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CHEMOKINE THERAPY FOR ANAL SPHINCTER INJURY IN RATS

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Objective: Anal incontinence is a quality-of-life condition that may result as a chronic sequelae of obstetric anal sphincter injury. Current treatment modalities for anal sphincter injury are ineffective and regenerative therapy, specifically cellular therapy, has shown promise in acute-injury animal models. C-X-C Motif Chemokine Ligand 12 (CXCL12) is a potential alternative to cellular therapy. We hypothesize that CXCL12 may augment anal sphincteric function long-term in our rat model following anal sphincterotomy compared to primary surgical repair alone.

Methods: Sixteen Sprague-Dawley adult female rats were divided into three groups. Group A was a control and did not undergo surgery. Group B had an anal sphincterotomy with primary surgical repair. Group C had an anal sphincterotomy with primary surgical repair and intra-sphincteric injection of CXCL12 at 6 weeks post-injury. All groups underwent anal manometry measurements at baseline, 6 weeks post-injury and 12 weeks post-injury. For each recording, the three best contractions as determined by operator's assessment were chosen. For these contractions, we calculated the mean values of the following: total duration (D), time to peak (T_{max}), and difference between maximal and minimal pressure value (P).

Results: At baseline, there were no statistically significant differences between D, T_{max} and P of Groups A, B and C. At 6-week manometry, there were no statistically significant differences between D, T_{max} and P of Groups A, B and C as well. At 12-week manometry, the total duration of contractions on anal manometry was significantly less in Group C compared to Groups A and B (3.65, 5.5, 5.3 $P < 0.01$). The time to peak of contraction at 12 weeks was also significantly less in Group C compared to Groups A and B (1.6,2.1,3.1 $P < 0.01$); however, group C had a significantly higher P at 12 weeks compared to Groups A and B (2.25,1.4, 0.34 $P < 0.01$).

Conclusions: In our pilot study, baseline measurements and measurements at 6 weeks showed similar anal sphincter function on anal manometry. At 12 weeks post-injury (6 weeks post-injection), CXCL12 seems to augment function of the anal sphincter compared to primary surgical repair alone and compared to a control group with no injury.

Table 1: Total duration (D), time to peak (T_{max}) and pressure changes (P Δ) in anal manometry in all rat models at baseline, 6 weeks post-injury and 12 weeks post-injury

		Control (Group A)	Injury without CXCL12 (Group B)	Injury with CXCL12 (Group C)	P value
Baseline	D (s)	9.80 (7.80-16.0)	7.00 (5.60-9.00)	8.95 (5.00-15.4)	0.06
	T_{max} (s)	5.00 (3.70-9.00)	3.10 (3.00-3.70)	5.55 (2.50-7.50)	0.12
	P Δ (mmHg)	9.90 (3.50-16.8)	4.6 (3.10-5.40)	4.30 (2.70-10.7)	0.17
6 weeks post-injury	D (s)	6.00 (5.00-6.30)	5.00 (4.00-6.50)	5.00 (4.00-6.00)	0.51
	T_{max} (s)	3.00 (2.40-3.00)	2.60 (2.20-3.00)	2.80 (2.20-4.00)	0.82
	P Δ (mmHg)	2.40 (0.80-3.10)	0.70 (0.56-3.00)	2.10 (0.80-6.10)	0.10
12 weeks post-injury	D (s)	5.50 (4.00-7.00)	5.30 (4.80-11.0)	3.65 (2.50-4.40)	<0.01
	T_{max} (s)	2.10 (1.90-3.20)	3.10 (2.70-4.70)	1.60 (1.20-2.40)	<0.01
	P Δ (mmHg)	1.40 (0.50-1.90)	0.34 (0.27-0.60),	2.25 (0.80-4.15)	<0.01

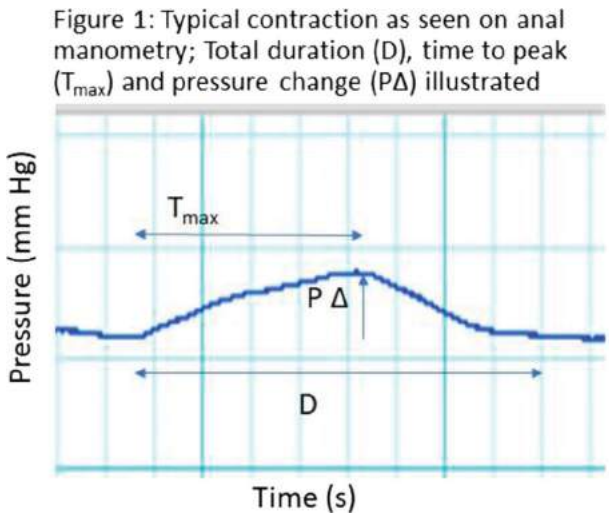

Figure 1: Typical contraction as seen on anal manometry; Total duration (D), time to peak (T_{max}) and pressure change (PΔ) illustrated

Disclosures: Amr El Haraki: None, Shannon Lankford: None, Gopal Badlani: None, James Williams: None

Full Oral 3

RISK FACTORS ASSOCIATED WITH SURGICAL FAILURE OVER 5 YEARS IN A RANDOMIZED TRIAL OF SACROSPINOUS HYSTEROPEXY WITH GRAFT VS VAGINAL HYSTERECTOMY WITH UTEROSACRAL LIGAMENT SUSPENSION FOR UTEROVAGINAL PROLAPSE

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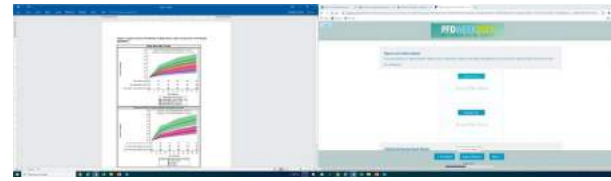
Objective: To identify factors associated with rate of surgical failure over 5 years among women undergoing sacrospinous mesh hysteropexy vs vaginal hysterectomy with uterosacral suspension for uterovaginal prolapse.

Methods: Planned secondary analysis of the Study of Uterine Prolapse Procedures – Randomized Trial a comparative effectiveness trial of two transvaginal apical suspensions (NCT01802281). Surgical failure was defined as either re-treatment of prolapse, recurrence of prolapse beyond the hymen, or bothersome prolapse symptoms. Baseline clinical and sociodemographic factors for eligible participants receiving the randomized surgery (N = 173) were compared across categories of failure (≤ 1 year, >1 year, no failure) with rank based tests. For factors with adequate prevalence and clinical relevance, bivariate association was assessed with a piecewise exponential survival model adjusting for type of apical repair and clinical site. The multivariable model included factors with bivariate $P < 0.2$ and age, POPQ point Ba, type of repair and site. Backward selection determined final retained risk factors ($P < 0.1$) with statistical significance evaluated by Bonferroni correction. Final factors were assessed for interaction with type of apical repair at $P = 0.1$. Association is presented by adjusted hazard ratio and illustrated categorization of risk factors.

Results: Ten factors from bivariate analyses were included in the multivariable model; two were retained with $P < 0.1$. The final model revealed mesh hysteropexy had lower rate of failure than hysterectomy with uterosacral suspension (aHR 0.6, 95% CI 0.4, 1.0, $P = 0.05$) adjusting for BMI (increase of 5 kg/m^2: aHR 1.7, 95% CI, 1.3, 2.2, $P < 0.001$) and duration of prolapse symptoms (increase of 1 year: aHR 1.1, 95% CI 1.0, 1.1, $P = 0.005$). Rate of failure is 3.0 times higher in obese than normal/underweight women (95% CI 1.5, 6.1) and 2.9 times higher in women experiencing >5 years prolapse symptoms compared to ≤1 year (95% CI 1.6, 5.3). Neither risk factor correlated with clinical or sociodemographic factors. Interaction between symptom duration and type of apical repair (p = 0.07) indicated hysteropexy was protective of failure for those with ≤5 years symptom duration, (aHR 0.5 (95% CI 0.2, 0.9) but not for those with >5 years symptoms (aHR1.0, 95% 0.5, 2.1), of whom 74% (28/38) failed within 5 years of surgery.

Conclusions: Risk factors associated with surgical failure over 5 years from transvaginal prolapse repair, regardless of approach, include obesity and duration of prolapse symptoms. Providers and patients may consider these modifiable risk factors when discussing treatment plans for bothersome prolapse.



Disclosures: Holly Richter: None, Amaanti Sridhar: None, Charles Nager: None, Yuko Komesu: None, Halina Zyczynski: ACOG: Board of Directors: Self , Heidi Harvie: None, Charles Rardin: None, A Visco: NinoMed: Major Stock Shareholder: Self , Donna Mazloomdoost: None, Sonia Thomas: None

Full Oral 4

MIX AND MESH: AN ELECTRONIC DATABASE OF FPMRS MESH PRODUCTS THROUGH 2020

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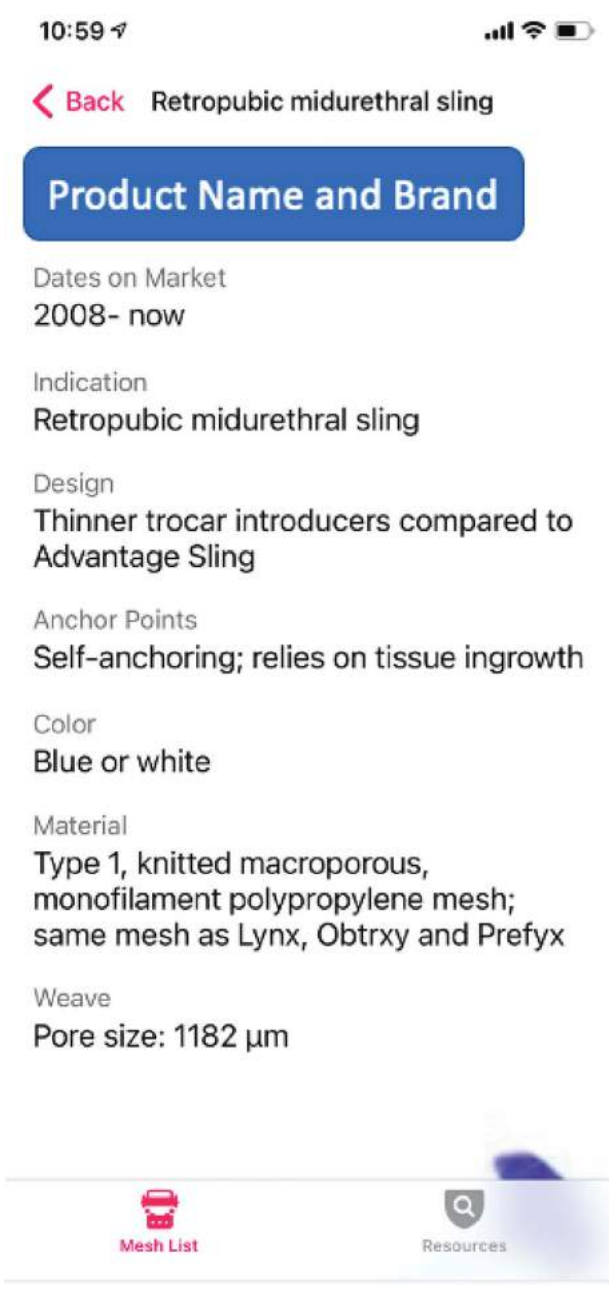
Objective: A sequelae of the removal of pelvic organ prolapse transvaginal mesh products from the United States market is that current and future Women's Health providers may be unfamiliar with mesh products historically used to treat pelvic floor disorders. Our goal was to create an easily accessible resource to address this knowledge gap.

Methods: The authors created an online database of mesh products used to treat pelvic organ prolapse and urinary incontinence. These products were all available in the United States and some are currently still on the market as of December 2020. Information, photographs and video were collated from internet searches, manufacturer materials and other primary sources. The database was linked to a smartphone application using a free, open-source product.

Results: This smartphone application includes, to the best of our knowledge, all mesh products used in the United States for the treatment of pelvic organ prolapse and stress urinary incontinence through December 2020. Included in the application are product descriptions of the mesh color, size, design and attachment points. Photographs and video, when available, are included. Figure 1 demonstrates an example of the application interface (FIGURE 1). The application is organized by mesh product name, but is also searchable by other categories, such as manufacturer name and color.

To download the application to a smart phone, go to vaginalmeshcatalogue.glideapp.io/ on a web browser on the smart phone or access via the QR code (FIGURE 2). Once the website is loaded, you are able to interact with the mesh catalogue as a website. To save as an application, the website should be added to the phone's home screen. The application will then be available to use with internet or data access.



Conclusions: Providers of all training and experience levels can use this free application for educational and clinical purposes to better understand patients' histories, improve preoperative planning and enhance patient counseling.

Disclosures: Katherine Woodburn: None, Olivia Cardenas-Trowers: None, Jocelyn Fitzgerald: None

Full Oral 5
IN-OFFICE VERSUS TELEMEDICINE PREOPERATIVE VISIT: A RANDOMIZED CONTROLLED TRIAL

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Objective: To determine if preoperative telemedicine appointments are non-inferior to in-office visits in preparing women for pelvic reconstructive surgery as measured by a preoperative preparedness survey. Secondary objectives included patient satisfaction, convenience, visit duration, total visits in the perioperative period, and patient travel time and distance.

Methods: This was a randomized controlled trial offered to women planning to undergo pelvic reconstructive surgery. Participants underwent either in-office preoperative counseling versus telemedicine counseling using a secure audio/visual platform. Following counseling, patients completed the Preoperative Preparedness Questionnaire (PPQ). The primary outcome was composite score of the PPQ. Secondary outcomes included patient satisfaction, convenience, visit duration for patients and providers, total patient travel time and distance, and number of office visits and contacts. Two weeks postoperatively, the preoperative subsection of the Consumer Assessment of Healthcare Providers and Systems Surgical Care Survey (SCAHPS) was completed. Six weeks postoperatively, total in-office visits, patient-initiated phone calls, and nurse-initiated phone calls were calculated. Round-trip patient travel time and distance from home to office were calculated. Sample size calculation revealed that 48 patients per arm were required to detect a 9-point difference in PPQ composite scores with 80% power and an alpha of 0.05. To allocate for 30% dropout, goal recruitment was 118 subjects.

Results: Between July 2019 and November 2020, 691 women were screened, 118 were randomized and 100 women were included in the final analysis: 52 to in-office counseling and 48 to telemedicine counseling. Demographic characteristics were similar between groups except for higher BMI in the telemedicine group (telemedicine 29.5 vs in-office 26.3 kg/m^2, $P = 0.01$) and fewer women in the telemedicine group had previously used text messaging for health care delivery (40.7% vs 59.3%, $P = 0.04$). Telemedicine preoperative visits were non-inferior to in-office preoperative visits (14.5 vs 14.0, p = 0.49, CI -0.8,¥). Patient satisfaction was higher in the telemedicine group (31.3 ± 1.5 vs 30.5 ± 2.1; $P = 0.02$) Telemedicine visits were more convenient than in-office visits (100% vs 85.2%, $P = 0.01$). Telemedicine visits were of shorter duration for patients (39.3 min vs 66.1 min, $P < 0.01$) and similar length for providers (28.8 min vs 28.2 min, $P = 0.77$). The telemedicine visit group had less office visits than the in-office group (2.0 vs 3.0, $P < 0.001$). The telemedicine visit group traveled 66 minutes ($p < 0.001$) and 28 miles ($p < 0.001$) less than the in-office group for the preoperative visit. There were no differences in patient-initiated calls or nurse-initiated calls between groups (1.00[0.00,2.0] vs 1.00 [1.00,3.0], $P = 0.88$, 1.00[1.00,2.0] vs 1.00[1.00,2.0], $P = 0.50$ respectively).

Conclusions: Telemedicine preoperative visits are non-inferior to in-office preoperative visits for preparing women to undergo pelvic reconstructive surgery. Telemedicine preoperative visits result in equivalent patient satisfaction, increased convenience, decreased travel burden, and decreased visit duration for patients when compared to in-office visit.

Disclosures: Elizabeth Braxton: None, Erinn Myers: Boston scientific: Paid to the hospital not to me.: Self, Jing Zhao: None, Sarah Evans: None, Megan Tarr: None

Full Oral 6
DEVELOPMENT AND VALIDATION OF MODELS TO PREDICT PERSISTENT STRESS AND URGENCY URINARY INCONTINENCE AND NEED FOR ADDITIONAL TREATMENT IN WOMEN PLANNING MID-URETHRAL SLING FOR MIXED URINARY INCONTINENCE

J. Jelovsek[1], V. Sung[2], B. Carper[3], M. Gantz[3], H. Richter[4], M. Lukacz[5], H. Harvie[6], D. Mazloomdoost[7], L. Barden[3]. *Duke University[1], Brown Medical School[2], RTI International[3], University of Alabama at Birmingham[4], University of California San Diego[5], University of Pennsylvania[6], National Institutes of Health[7]*

Objective: To develop and validate the prognostic performance of models estimating risks of persistent stress and urgency urinary incontinence (SUI/UUI) 1 year after midurethral sling (MUS) surgery (with and without behavioral therapy) in women with mixed urinary incontinence (MUI).

Methods: Data collected from women enrolled in a randomized trial comparing combined behavioral/pelvic floor muscle therapy with MUS to MUS alone for MUI were used for prognostic modeling. Participants had moderate or severe MUI symptoms for at least 3 months, and at least 1 SUI and 1 UUI episode on a 3-day bladder diary. Four outcomes were modeled at 1 year after surgery. A composite treatment failure outcome defined as: (1) not meeting the MID on the Urogenital Distress Inventory (UDI)-total score or (2) not achieving ≥70% improvement in mean daily incontinence episodes (IEs) on bladder diary, or (3) undergoing additional treatment for any lower urinary tract symptom (LUTS). Three additional outcomes were any additional treatment for LUTS, UDI-total score, and total IEs. Prognostic models used penalized logistic and linear regression with least absolute shrinkage and selection operator (LASSO) with baseline clinical characteristics, patient-reported outcome measures and urodynamic variables. Variable selection and internal validation were performed using 5-fold cross validation and uncertainty was assessed via bootstrap.

Results: The derivation and internal validation cohort consisted of 379 women. At 1 year, 30% met criteria for composite treatment failure; mean (SD) UDI-total score was 37.3 (47.9), median (IQR) total IEs was 0 (0-1) and 15% required additional treatment for LUTS. The final models consisted of 11 variables: race, ethnicity, menopausal status, prior OAB medication use, insurance type, patient global impression of severity, comorbidity index, detrusor overactivity and SUI on cystometrogram, baseline detrusor pressure, and treatment assignment. The composite treatment failure model discriminated between those with and without the composite outcome (c-statistic [equivalent to the area under the receiver operator characteristic curve] =0.65; 95%CI: 0.53-0.75, Brier = 0.20). Similar performance was seen for the model predicting additional treatment (c-statistic = 0.70; 95%CI: 0.50-0.77, Brier = 0.11). Calibration for the composite treatment failure model showed reasonable calibration when predicted probabilities were less than or equal to 50% but over-predicted risk when greater than 50%. Similarly, the additional treatment model showed reasonable calibration when predicted probabilities were less than or equal to 30% but over-predicted risk when greater than 30%. The UDI-total score model was accurate within 35 points (mean absolute error = 33.2, $R^2 = 0.08$). The total IEs model was accurate within one IE (mean absolute error = 0.97, $R^2 = 0.16$). The addition of urodynamic variables improved the prognostic performance of models predicting total IEs (MAE 1.05 to 0.97 and need for additional LUTS treatment (c-statistic 0.63 to 0.70)).

Conclusions: These models may provide individualized estimates for women with MUI of risk for persistent SUI/UUI and need for additional LUTS treatment after surgery with MUS. Urodynamic variables add new prognostic information to patient characteristics alone.

Disclosures: John Jelovsek: NIDDK LURN Research Network: Co-PI: Self, UpToDate: Royalties: Self , Vivian Sung: None, Benjamin Carper: None, Marie Gantz: None, Holly Richter: None, Mimi Lukacz: None, Heidi Harvie: None, Donna Mazloomdoost: None, Lindsey Barden: None

Full Oral 7
LONG-TERM OUTCOMES FOLLOWING VAGINAL AND LAPAROSCOPIC MESH HYSTEROPEXY FOR UTEROVAGINAL PROLAPSE: A PARALLEL COHORT STUDY

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Objective: To compare long-term outcomes and success for laparoscopic sacral hysteropexy (LSHP) and vaginal mesh hysteropexy (VMHP)

Methods: This multicenter, prospective parallel cohort was an extension to the initial VAULT study. Subjects were contacted and informed consent obtained. We collected baseline demographics and latest POP-Q data from chart review and conducted telephone interviews to update Charlson Comorbidity Index (CCI), smoking status, menopausal status and BMI plus collect PFDI-20, PGI-I, prolapse reoperation/pessary use, sexual activity and complications. Surgical success was defined as no bulge symptoms, satisfaction very much better or much better, and no reoperation/pessary use. Those with no recent visits were offered to return for POP-Q exam. Linear regression was used for PFDI-20 composite score and logistic regression for surgical success adjusted odds ratios.

Results: 5 of 8 original sites enrolled 53 subjects, LSHP (n = 34) and VMHP (n = 19). The LSHP group was younger (67 vs. 74, $P < 0.01$) but there were no differences in parity, BMI ,menopause, race), insurance, tobacco use or CCI. Median subjective follow up was 7.3 [±0.9] years, and did not differ between groups ($P = 0.75$). Composite success was 82% LSHP vs. 74% VMHP [$P = 0.50$,

OR 1.6(0.4,6.3), AOR 2.8(0.6,15.4)]. One LSHP subject had 2 reoperations for prolapse (vaginal hysterectomy with native tissue repair followed by abdominal sacrocolpopexy) and 1 VMHP used a pessary. 88% LSHP vs. 95% VMHP had no bulge symptoms ($P = 0.86$) and 91% LSHP vs. 79% VMHP were very much better/much better ($P = 0.02$). PFDI-20 composite scores were similar at baseline (95.6 vs. 102.5, $P = 0.65$) and improved for both groups ($P < 0.01$) with lower bother observed in the LSHP group (20.8 vs. 43.8, $P = 0.01$) which remained significant after adjusting for age ($p < 0.01$). LSHP had worse posterior prolapse at baseline (Ap -0.5 vs. -1.5, $P = 0.04$). POP-Q data was available for 31 LSHP and 18 VMHP at 5.2 years (4.7 vs. 5.9, $P = 0.15$). 94% LSHP vs. 83% VMHP ($p = 0.34$) had no prolapse beyond the hymen and 78% vs. 39% had stage<2, 19% vs. 44% stage 2 and 3% vs. 17% stage>2 ($P = 0.06$). LSHP had longer vaginal length (9.3 vs 8.2 cm, $P < 0.01$) and better posterior fornix support (D = -8 vs -7, $P < 0.01$). The majority of subjects were not sexually active in the past 4 weeks (67% vs. 61%, $P = 0.76$) and with low rates of dyspareunia (10.3% vs. 5.6% ($P = 0.74$)). There were no differences in complications related to the hysteropexies. The LSHP group had 1 subject with discharge and mesh exposure excised in the office, but this subject also underwent two reoperations for prolapse. The VMHP group had 1 subject with mesh and suture exposure treated with vaginal estrogen and excision and 2 with postmenopausal bleeding (1 negative endometrial biopsy and the other related to pessary use). There were no reported cervical issues, mesh erosions, or pelvic pain in either group.

Conclusions: Over 7 years after surgery, LSHP and VMHP have high success, low retreatment and low complication rates that did not differ between groups. LSHP had greater satisfaction on PGI-I and less bother on PFDI-20 composite score compared to VMHP. Although there is a trend towards better anatomic support in the LSHP group, these findings were not significant and we are underpowered to detect a difference.

Disclosures: Robert Gutman: Boston Scientific: Grant/Research Support: Self, Boston Scientific: Strategic Advisory Board Member: Self, Johnson & Johnson: Expert witness sling defense: Self, UpToDate: Royalties urethral diverticulum section: Self , Jocelyn Fitzgerald: None, Eric Sokol: None, Charley Rardin: None, Geoffrey Cundiff: None, Marie Fidela Paraiso: None, Jiling Chou: None

Full Oral 8
A COMPARISON OF MESH-ASSOCIATED INFLAMMATION IN NORMOGLYCEMIC AND HYPERGLYCEMIC CONDITIONS

A. Fisk[1], R. Liang[2], G. King[3]. *University of Pittsburgh[1], University of Pittsburgh/ Magee-Womens Research Institute[2], Magee-Womens Research Institute[3]*

Objective: Mesh-augmented repairs are associated with exposure and pain. While multifactorial factors contribute to the pathogenesis of these complications, mesh-associated chronic inflammation is considered as a trigger. Diabetes, which induces increased inflammation in wound healing, is an independent risk factor for mesh complications. This study evaluates the effect of hyperglycemia on the vaginal inflammatory response to mesh in a diabetic rat model. Since women receiving mesh repair are mostly post-menopausal, we also assessed the role of estrogen withdrawal in mesh-associated inflammation (MAI).

Methods: Diabetes was induced in middle-aged (9 – 12 mos) female Wistar rats using streptozotocin and confirmed with the development of polydipsia, polyuria, and hyperglycemia (≥ 350 mg/dL). After two weeks, a polypropylene mesh was implanted on the anterior and posterior vagina via sacrocolpopexy following supracervical hysterectomy with or without bilateral ovariectomy (OVX). Nondiabetic rats underwent the same procedures. At 7 days (only OVX groups) & 42 days (OVX and nonOVX groups) post-surgery, mesh-grafted vaginal tissues were collected for gross morphology and histology analysis with hematoxylin and eosin staining (n = 5 for each time point in each group). Mesh-associated inflammation was quantified using NIS-elements software, represented by total inflammation area subtracted by mesh area (Figure). Mesh fibers and fiber clusters' size were correlated to inflammation to determine the effect of mesh load (material amount at the unit area of vaginal tissue) on the inflammatory response. Linear regression model, F, and Kruskal-Wallis tests were used with significance set at $P < 0.05$.

Results: OVX did not have a significant impact on the MAI in both diabetic and nondiabetic groups. Compared to nondiabetic rats, the MAI in diabetic rats was similar at 7-days; yet it tends to be increased by 47% in diabetic rats at 42-days with significance found in the nonOVX group ($P = 0.047$). Strong positive correlations were found between mesh load and MAI at both times points in nondiabetic rats with or without OVX (all $r > 0.7$, $P < 0.001$), emphasizing the importance of decreasing mesh load in mesh implantation. However, the correlations were much weaker in diabetic rats at 42 days ($r = 0.541$, $P = 0.009$) with no association found at 7-days ($r = 0.420$, $P = 0.110$). Therefore, indicating a disproportional inflammation to mesh loads in hyperglycemic conditions.

Conclusions: Diabetes dysregulates inflammatory response at the mesh-tissue interface, leading to increased inflammation in the long term. Measures to decrease mesh load, such as using lighter weight mesh and mesh with stable pore configuration to eliminate in-vivo mesh deformation (wrinkling and shrinking), are likely beneficial.

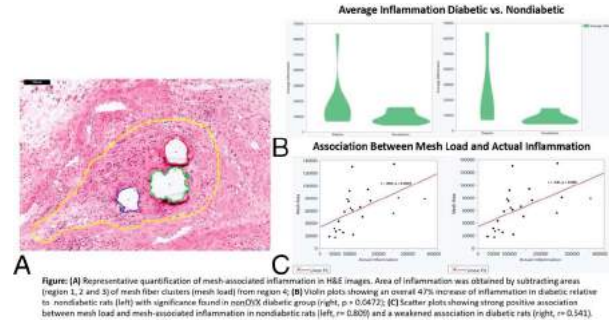

Figure: [A] Representative quantification of mesh-associated inflammation in H&E images. Area of inflammation was obtained by subtracting areas (region 1, 2 and 3) of mesh fiber clusters (mesh load) from region 4; [B] Violin plots showing an overall 47% increase of inflammation in diabetic relative to nondiabetic rats (left) with significance found in nonOVX diabetic group (right, $p = 0.0472$); [C] Scatter plots showing strong positive association between mesh load and mesh-associated inflammation in nondiabetic rats (left, $r = 0.809$) and a weakened association in diabetic rats (right, $r = 0.541$).

Disclosures: Abigail Fisk: None, Rui Liang: None, Gabrielle King: None

Full Oral 9
THE INTERACTION OF RESTING VAGINAL LENGTH AND HIATUS SIZE ON PROLAPSE DEVELOPMENT: MONTE CARLO SIMULATION OF PELVIC FLOOR SUPPORT BIOMECHANICAL MODEL

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Objective: The anterior vaginal wall is longer in women with cystocele. Though rarely discussed, one effect of anterior repair is return of vaginal wall length to normal and failure to normalize vaginal length may increase risk of surgical failure. The goal of this study is to investigate the effect of variation in vaginal length and its interaction with hiatus size and apical support properties on the development of prolapse using a newly developed Monte Carlo simulation plug-in of biomechanical model POP-SIM[1].

Methods: POP-SIM is a validated finite element (FE) biomechanical model simulation platform[1] that consists of anatomically based FE models and a suite of Python-based tools developed to rapidly construct models with desired structural and material parameters. We recently developed a new Monte Carlo

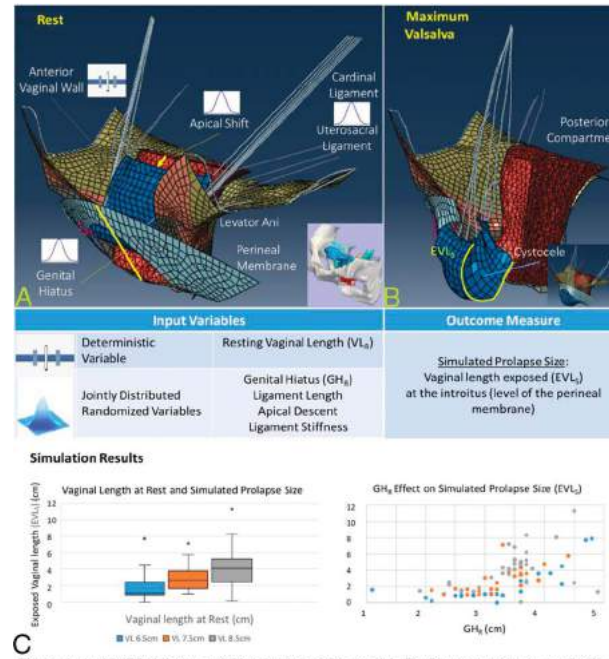


Figure 1 A: Modified input variables in the resting model. B: Outcome measure at simulated maximum Valsalva in a midsagittal slice. C: Simulation Results

Simulation plug-in using Python, allowing variation of input parameters based on their bell curve distribution and correlations. Vaginal length at rest (VL_R) was modeled as input variable at three lengths: 6.5 cm, 7.5 cm and 8.5 cm. Hiatus size (GH_R), apical descent, cardinal ligament length at rest and material properties are modelled based on the bell curve of variation (Fig. 1A). A random number generator samples this distribution and generates the input parameters for POP-SIM. A total of 108 simulation models were constructed. Each was loaded with 90 cmH_2O abdominal pressure and the deformation under load were calculated using ABAQUS® software. To assess prolapse size, vaginal length exposed (EVL_{-S}) at the introitus (level of the perineal membrane) under load was calculated for each model (Fig. 1B).

Results: Median, inter-quantile range (IQR), and total range of the simulated prolapse size EVL_{-S} increase significantly with longer VL_R. For every 1 cm increase in VL_R, median EVL_{-S} increased by 1.5 cm. (Fig. 1C, Left) For smaller GH_R, VL_R has little effect on simulated prolapse size (EVL_{-S}). However, with larger GH_R, variation in VL_R results in greater differences in simulation results. Longer VL_Rs were more likely to result in larger simulated prolapse sizes (Figure 1C, Right).

Conclusions: In these simulations, longer resting vaginal length are more likely to result in larger prolapse size at maximum Valsalva when their resting hiatus size is also large. Comments: Equipped with Monte Carlo simulation plug-in, POP-SIM simulation studies can help to identify vaginal length restoration targets for various hiatus sizes to optimize surgical outcomes.

Disclosures: Luyun Chen: None, Mark Gordon: None, John DeLancey: None, Carolyn Swenson: None

Full Oral 10
PELVIC FLOOR MUSCLE TRAINING MAY NOT IMPROVE URINARY INCONTINENCE SYMPTOMS IN OLDER WOMEN

C. Parker-Autry[1], R. Neiberg[1], I. Leng[2]. *Wake Forest University School of Medicine*[1]

Objective: Urinary incontinence (UI) and physical function impairment are inter-related geriatric conditions that result from skeletal muscle dysfunction in older women. When present concomitantly, they may affect the efficacy of pelvic floor muscle (PFM) based treatment to decrease UI episodes. The objective of this study was to examine the impact of physical function impairment on PFM-based treatment of UI among older women.

Methods: We conducted a prospective cohort study of 61 community-dwelling women, older than 70 years, with at least moderate UI symptoms in our Geriatric Research Center. UI severity was determined using the Questionnaire for Urinary Incontinence Diagnosis (QUID). Moderate UI was defined as having subscale score for stress ≥4, urge score ≥ 6, and/or total QUID score ≥ 10. At baseline, pelvic floor and physical function was assessed. The P.E.R.F.E.C.T scheme was applied to determine pelvic floor muscle strength and efficiency and used to create an individualized PFM exercise prescription. Physical function was determined using the Short Physical Performance Battery (SPPB). Poor physical function was defined as SPPB total score of ≤9. A 3-day bladder diary established daily UI severity and type at baseline, 6, and 12 weeks. Participants were assigned a 12-week PFM training prescription that included 3-sets of daily pelvic floor with urgency and stress suppression strategies. Individualized behavioral therapy included fluid and bowel management as appropriate. Our intervention included 12 weeks of individualized pelvic floor training along with a behavioral management plan if applicable. All participants were asked to log treatment compliance daily. Pelvic floor strength, UI symptom severity/type, and physical function was assessed at 6 and 12 weeks. The change in UI episodes based on baseline physical performance at 6 weeks was our primary outcome. Differences between physical function groups were compared using t-tests adjusted for age, race, and BMI.

Results: At baseline, there were no significant differences in mean age or ethnicity between groups. Women with SPPB ≤9 had higher BMI, 33.6 ± 14.5 kg/m^2 vs 27.4 ± 5.8 kg/m^2 than in women with SPPB >9, p = 0.032. At baseline, women with SPPB ≤9 had significantly greater urgency UI (2.4 ± 1.8 episodes/day) compared to women with SPPB >9 (1.6 ± 1.2), $P = 0.049$. Further, stress UI was also more severe among women with SPPB≤9 with 2.1 ± 1.9 episodes/day compared to 1.3 ± 1.1 episodes/day among women with SPPB>9, $P = 0.046$. However, UI episodes did not improve significantly after 6 or 12 weeks of PFM training with behavioral management, regardless of baseline physical function. (Table 1)

Conclusions: Pelvic floor training with behavioral management may not effectively treat UI symptoms among older women with moderate-to-severe UI symptoms. Older women with impaired physical function may have more severe UI symptoms. However, physical function impairment was not found to significantly impact the on the efficacy of pelvic floor training.

Table 1. Change in UI (mean±SD) episodes from baseline to 6 and 12 weeks based on physical function

	Change from baseline - 6 weeks			Change from baseline – 12 weeks		
	SPPB≤9	SPPB>9	P-value	SPPB≤9	SPPB>9	P-value
Total voids (excluding leaks)	0.92±2.0	0.20±3.3	0.33	0.17±1.9	-0.17±2.6	0.61
Urgency UI episodes	0.1±1.5	-0.5±1.1	0.07	-0.3±0.9	-0.6±1.5	0.36
Urgency UI leaks	-0.7±1.8	-0.5±1.4	0.75	-0.8±1.6	-0.5±1.6	0.48
Stress UI leaks	-0.3±1.6	-0.4±1.2	0.82	0.0±1.8	0.19±1.8	0.71
Mixed UI leaks	-0.2±0.9	-0.3±1.1	0.74	0.1±1.3	-0.4±0.8	0.16

Disclosures: Candace Parker-Autry: None, Rebecca Neiberg: None, Iris Leng: None

Full Oral 11
PHENOTYPING GERIATRIC INCONTINENCE IN WOMEN

C. Parker-Autry[1], R. Neiberg,[2] I. Leng[1]. *Wake Forest University School of Medicine*[1]

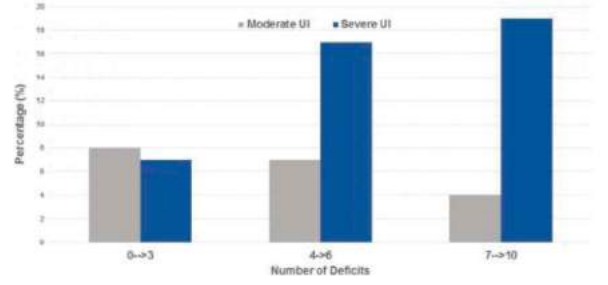
Objective: Urinary incontinence (UI) is heterogeneous among older women; presenting either as a pelvic-floor based condition or a multi-factorial geriatric incontinence syndrome (GIS). We hypothesize that this GIS may result from cumulative geriatric deficits. The objective of this study was to evaluate a cumulative deficit model for the GIS to characterize the features needed to identify this phenotype of UI in clinical practice.

Methods: We conducted a cross-sectional analysis of 61 community-dwelling women aged ≥70 years with moderate-to-severe UI who were prospectively enrolled. UI symptom severity was defined using a 3-day bladder diary. Physical performance was objectively assessed using the Short Physical Performance Battery (SPPB) that included domains on standing balance, lower-extremity strength (timed chair stands), and gait speed. SPPB scores ≤9 reflected impaired physical performance and scores >9 were normal. UI severity defined the comparative groups; moderate UI defined as <2 UI episodes/day and severe UI defined as ≥2 UI episodes/day. Disability was assessed using the Pepper Assessment Tool for Disability (PAT-D). The SARC-F, a validated questionnaire and grip strength measured using a hand dynamometer (kg) determined presence of sarcopenia. Cognitive function was assessed using the Montreal Cognitive Assessment (MoCA). We examined the geriatric characteristics of chair-stand pace, gait speed, grip strength, cognitive impairment, sarcopenia, disability, and fatigue using validated cut-offs that define abnormal conditions. A cumulative deficit model for the GIS was created to determine the number assessing their frequencies based on UI severity.

Results: The mean ± SD age was 77.3 ± 5.9 years. The majority of women were classified as having severe UI (69%). Women with severe UI had higher prevalence of SPPB≤9 (59%) compared to women with moderate UI (26%), $P = 0.02$. Chair stand pace was slower among women with more severe UI [(mean ± SD) 2.3 ± 1.4 vs 3.3 ± 0.9 among women with moderate UI], $P = 0.007$. Gait speed was also slower among women with severe UI episodes, 0.08 ± 0.2 m/s vs 1.0 ± 0.2 m/s (moderate UI), $P = 0.03$. Women with severe UI had greater subjective disability with PAT-D scores of 1.8 ± 0.6 vs 1.5 ± 0.6, $P = 0.033$. There were no significant differences in states of sarcopenia, cognitive impairment, or weakness determined by grip strength based on UI severity. Women with severe UI had higher frequency of geriatric deficits compared to women with moderate UI. (Figure 1)

Conclusions: Urinary incontinence severity may be associated with an accumulation of geriatric deficits in older incontinent women. The concomitant presence of severe UI symptoms and multiple different geriatric conditions may represent a novel phenotype of UI – the geriatric incontinence syndrome.

Figure 1. The cumulative number of deficits in physical performance, strength, and cognition present among baseline participants categorized based on UI severity.



Disclosures: Candace Parker-Autry: None, Rebecca Neiberg: None, Iris Leng: None

Full Oral 12
ASSOCIATION OF PLACEBO RESPONSE GENETIC POLYMORPHISMS AND OUTCOMES FOLLOWING PERCUTANEOUS TIBIAL NERVE STIMULATION OR SHAM IN WOMEN WITH FECAL INCONTINENCE

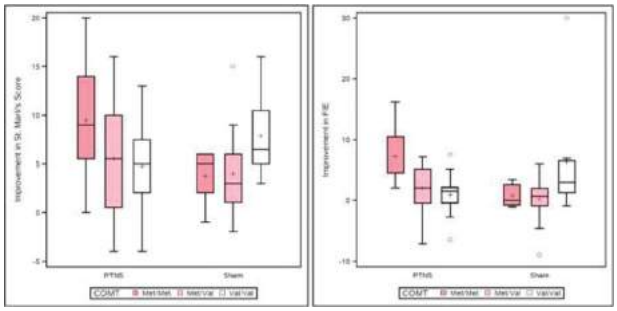
M. Florian-Rodriguez[1], H. Richter[2], M. Carnes[3], H. Zyczynski[4], M. Lukacz[5], A. Visco[6], L. Arya[7], V. Sung[8], D. Mazloomdoost[9], M. Gantz[3]. *University of Texas Southwestern Medical Center[1], University of Alabama at Birmingham[2], RTI International[3], University of Pittsburgh/Magee-Womens Research Institute[4], University of California San Diego[5], Duke University[6], University of Pennsylvania[7], Brown Medical School[8], National Institutes of Health[9]*

Objective: To evaluate the relationship between treatment response to percutaneous tibial nerve stimulation (PTNS) or sham for treatment of fecal incontinence (FI) and genetic markers of placebo response. The hypothesis is that there will be a relationship between improvement in St Mark's score and genetic markers that may vary by treatment type.

Methods: Blood specimens were collected from a subset of women (N = 96) with FI in the Neuromodulation for Accidental Bowel Leakage trial (NOTABLe, NCT 03278613) who received at least 10 of 12 active PTNS or sham treatments. DNA extracted from whole blood and genotyping was performed on target single nucleotide polymorphisms (SNPs) previously associated with placebo response: rs4680 (Val158Met) in catechol-O-methyltransferase (*COMT)*; rs4570625 (G-703 T) upstream of tryptophan hydroxylase-2 (*TPH2)*; rs6265 (Val66Met) in brain derived neurotropic factor (*BDNF*); rs324420 (Pro129Thr) in fatty acid amide hydrolase (*FAAH*); rs510769 (intronic) and rs1799971 (Asn40Asp) in mu-opiod receptors (*OPRM1)*. The primary outcome was improvement in St. Mark's score after 10-12 weeks of treatment. Secondary outcomes were improvement in number of fecal incontinence episodes (FIEs), dichotomized Patient Global Impression of Improvement (PGI-I) (1-2 vs >2), and responder status (dichotomized by a St. Mark's improvement threshold of 4). An additive linear regression interaction model adjusted for BMI, race, baseline FIEs or St. Mark's score was used to identify SNP by treatment effects significantly associated with primary and secondary accounts. In the absence of treatment interaction, SNP main effects were tested.

Results: There were no differences in age, BMI, FIEs or St. Mark's score at baseline or follow up between PTNS (n = 64) and sham (n = 32) treated patients. Lower BMI was significantly associated with improvement in St. Mark's score (P = 0.01). There was a significant interaction between the COMT SNP (Val158Met) and treatment group (PTNS vs sham) for change in St. Mark's score (interaction P = 0.02), change in FIEs (interaction P = 0.01) and near-significant for PGI-I (interaction P = 0.06). Val158Met was associated with better response to treatment in PTNS treated patients (St. Mark's score improvement: beta = 1.72; P = 0.06, FIE improvement: beta = 2.36; P = 0.001, and PGI-I: OR = 2.00; P = 0.06) but was not associated with treatment response in sham (St. Mark's score improvement: beta = -1.37; P = 0.24, FIE improvement: beta = 0.09; P = 0.95, and PGI-I: OR = 0.64; P = 0.48). PTNS participants homozygous for the Met allele (Met/Met) had the greatest response, Val/Met heterozygotes had an intermediate response, and Val allele homozygotes (Val/Val) had the lowest improvement in St. Mark's score and FIEs (Figure 1). No significant interaction or main effects were observed for TPH2, BDNF, FAAH, or OPRM1 SNPs.

Conclusions: Women with FI homozygous for the COMT Met allele (Met/Met) were more likely to have a better response to PTNS in this trial. These results suggest there may be an unexplored biological relationship between the increased dopamine availability conferred by the COMT Met allele and PTNS. Further research is needed to determine if this SNP is also associated with PTNS response in the treatment of overactive bladder.



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Full Oral 13
GENDER DIFFERENCES IN COMMERCIAL PATIENT REVIEWS OF WOMEN AND MEN UROGYNECOLOGIC SURGEONS

M. Mueller[1], J. Geynisman-Tan[1], E. Bretschneider[1], C. Lewicky-Gaupp[1], S. Collins[1], K. Kenton[1]. *Northwestern University[1]*

Objective: The objective of our study was to uncover differences in the commercial patient review comments of women and men urogynecologic surgeons.

Methods: We utilized a search strategy to identify surgeon reviews derived from Lopez et al 2012 and Marrero et al 2019. Reviews of surgeons on Yelp.com were included in four different metropolitan areas. Physician gender was obtained by reviewing publicly available data for each physician from their own practice websites by two independent investigators. Board-certification was verified at ABOG.org. Based on the qualitative assessment using grounded theory content analysis of major and minor elements employed in Marrero et al's study, we defined theme four categories with discrete elements: global experience, social interaction, technical skills, and ancillary elements (Table 1). The proportion of times these themes and elements mentioned in reviews was assessed by gender for each domain and thematic element by independent reviewers. Differences in proportions of mentioned themes as well as the overall ratings were evaluated with the appropriate statistical tests.

Results: 364 patient reviews were identified for 141 gynecologic surgeons identifying as "urogynecologists." 51.8 (N = 73) % identified as female and 48.2% (N = 68) identified as male. There were similar proportions of reviews written for female surgeons (51%) and male surgeons (49%). The majority of the cohort (77%) held subspecialty certification in FPMRS as confirmed by ABOG. Reviews were distributed among the four metro-city areas: New York (49.6%), Chicago (21.3%), Houston (5.7%), and Los Angeles (23.4%).

Women had a lower quantitative likelihood to recommend score compared to men (4.0 vs 4.3 P = 0.002). Frequency of domain themes mentioned in reviews varied between women and men with men having more frequent mention of technical domain themes Table 2. There were also differences in theme element mentions in the reviews of men and women with women receiving more mention in comfort (52% vs 40% P = 0.027) and professionalism (19.3% vs 9% p = 0.007) themes and less mention with respect to outcomes (28% vs 53% P < 0.001), and technical skills (5% vs 15% P = 0.011) compared to men.

Conclusions: Commercial online patient reviews for urogynecologic surgeons vary based on surgeon gender with women surgeons receiving more comments related to social interaction and men receiving more comments related to technical aspects of care. Online patient reviews seem to include implicit gender bias and should be used cautiously.

Table 1. Themes and elements identified in surgeon reviews

Global Experience	overall experience, would return to provider, would recommend to others
Social Interaction	professional, welcoming, lack of hostility, honesty, comfort, bedside manner
Technical Skills	outcomes, attention to detail, healing process, informative, technical skill, safety
Ancillary Elements	staff interactions, wait time, insurance issues, scheduling, litigation

Table 2. Proportion of comments per domain by gender

DOMAIN	Women N=187	Men N= 177	p value
Global	116 (62%)	120 (68%)	0.192
Social	143 (76.5 %)	131 (74.0%)	0.587
Technical	137 (73%)	145 (82%)	**0.048**
Ancillary	51 (27%)	57 (32%)	0.303

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Full Oral 14
MESH EXPOSURE FOLLOWING VAGINAL VERSUS LAPAROSCOPIC HYSTERECTOMY AT THE TIME OF SACROCOLPOPEXY

K. Woodburn[1], A. El Haraki[2], A. Sokol[3], R. Gutman[3], C. Matthews[4]. *Georgetown/MedStar Washington Hospital Center[1], Wake Forest Baptist Medical Center[2], MedStar Health / Georgetown University School of Medicine[3], Wake Forest Baptist Health[4]*

Objective: Minimally invasive sacrocolpopexy is increasingly utilized as a primary procedure for uterovaginal prolapse yet data regarding the impact of route

of hysterectomy and method of vaginal mesh attachment when performed concomitantly are lacking. The purpose of this study is to compare vaginal mesh exposure rates within 1 year postoperatively in patients who undergo vaginal hysterectomy with vaginal mesh attachment (TVH) versus laparoscopic/robotic hysterectomy with abdominal mesh attachment (TLH) for minimally invasive sacrocolpopexy. The study will also investigate the differences in composite success, prolapse symptoms, re-treatment and adverse events between groups.

Methods: This multi-center retrospective cohort study is a secondary analysis of data collected retrospectively at one tertiary care center and the multi-center randomized control PACT trial. Women were excluded if they had no follow up between 9 months and 2 years postoperatively or underwent concurrent non-urogynecologic procedures, such as rectopexy.

Results: Between December 2010 and December 2019, 182 patients underwent TLH and 132 TVH. Patients undergoing TVH were more likely to have a lower BMI (25.3 vs 27.3, $P < 0.001$), have a stage 4 prolapse preoperatively (39.4% vs 12.6%, $P < 0.001$) and undergo concurrent posterior repair (72% vs 47%, $P < 0.001$) but there were no differences in parity, menopausal status, estrogen use, smoking status, diabetes, or concomitant sling.

For the primary outcome, there were 15 (4.8%) vaginal mesh exposures: 12 (6.6%) in the TLH and 3 (2.3%) in the TVH group ($P = 0.133$) with zero mesh erosions. Logistic regression analysis for mesh exposure in the TLH v. TVH groups controlling for BMI, posterior repair and surgeon training also showed no significant difference (OR 4.8, 95% CI 0.94, 24.8, $P = 0.059$.) The overall intraoperative complication rate was low (19/314, 6.1%) with a higher rate of bladder injury in the TLH group (4.4% vs 0.8%, $P = 0.049$). In the TLH group, there was a higher rate of UTI (8.2% vs 2.3%, $P = 0.027$) and clean intermittent catheterization (11% vs 3%, $P = 0.009$). At 1 year follow up, there was no difference in composite failure (6%), bulge symptoms (5%) or retreatment (1%) between groups (Table 1).

Conclusions: At one year, there is no significant difference in vaginal mesh exposure rates between vaginal hysterectomy with vaginal mesh attachment and laparoscopic hysterectomy with abdominal mesh attachment. Both groups have equal efficacy with overall low rates of complications.

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Disclosures: Katherine Woodburn: None, Amr El Haraki: None, Andrew Sokol: None, Robert Gutman: Boston Scientific: Grant/Research Support: Self, Boston Scientific: Strategic advisory board member: Self, Johnson & Johnson: Expert Witness for sling defense: Self, UpToDate: Royalties for urethral diverticulum section: Self , Catherine Matthews: None

Full Oral 15
METHENAMINE HIPPURATE WITH CRANBERRY CAPSULES VERSUS CRANBERRY ALONE FOR UTI PREVENTION IN A SHORT-TERM INDWELLING FOLEY CATHETER POPULATION FOLLOWING UROGYNECOLOGIC SURGERY: A DOUBLE-BLIND RANDOMIZED CONTROLLED TRIAL

T. Tam[1], E. Aldrich[2], C. Crisp[2], E. Yook[3], J. Yeung[2], R. Pauls[2]. *TriHealth, Good Samaritan Hospital[1], TriHealth[2], TriHealth Hatton Research Institute[3]*

Objective: Urinary tract infection (UTI) rates following pelvic reconstructive surgery are high, with increased occurrence in those requiring an indwelling catheter. To date, there is conflicting data on the efficacy of non-antibiotic agents for UTI prevention. We sought to investigate the efficacy of methenamine hippurate (methenamine) with cranberry capsules compared to cranberry alone. Our study focused on UTI rates in patients requiring indwelling catheterization following prolapse surgery.

Methods: We conducted an institutional review board-approved, randomized double-blinded placebo-controlled trial. Eligible participants underwent pelvic reconstructive surgery, failed a post-operative voiding trial, and were discharged with an indwelling catheter. Patients were randomized to receive cranberry capsules with methenamine or cranberry with placebo and were instructed to take the pills twice daily until catheter removal at 1-week. Our primary outcome was number of subjects treated for UTI based on positive culture or clinical symptoms within 1-week of surgery. Secondary outcomes included incidence of UTI within 6-weeks of surgery, bacterial species and amount grown on culture, medication compliance, urine pH at 1 week, duration of catheter use, side effects, and patient satisfaction with their medications. Student-t test and Chi-square tests were used to detect differences between groups. Logistic regression was used to estimate treatment effect on incidence of UTI. Based on a prior study, a sample size of 88 patients per arm was calculated using alpha = 0.05 and 80% power.

Results: From June 2019 to February 2021, 146 patients were randomized. Three subjects withdrew and 143 (81%) were included in this preliminary analysis; 69 received cranberry with placebo and 74 received cranberry with methenamine. The average age was 60.1 (±13) years, and groups were overall similar. There was no difference in preoperative post-void residual (PVR), type of surgery performed, or sling placement. Seventy-three percent of patients had a UTI treated within 1 week of surgery, but this was not significantly different between the placebo (78.3%) and methenamine group (68.9%) (OR 1.62; 95% CI (0.76-3.45); $P = 0.208$). However, in the 6 weeks following surgery, incidence of UTI was significantly higher in the placebo group (91.3% vs 73.0%; OR 3.89; 95% CI (1.46-10.38); $P = 0.007$). Majority of cultures grew 10^5 CFU/mL with similar bacterial species. However, there was a non-significant trend toward higher Pseudomonal infections among the placebo group (25% vs 11.1%; $P = 0.056$). There were no differences in total days of catheter use ($P = 0.474$), postoperative complications, or urine pH ($P = 0.238$). Compliance and satisfaction were high among both groups with low side effects. Logistic regression revealed no significant confounding variables.

Conclusions: Methenamine did not significantly reduce UTI rates among women with an indwelling catheter following pelvic reconstructive surgery at 1 week. However, at 6 weeks, subjects taking methenamine had significantly lower incidence of UTI. We believe this supports the addition of methenamine in this population. Further research of methenamine among patients with shorter duration of catheterization could show a greater benefit.

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Full Oral 16
UUI-IR: DISTINGUISHING A SUBTYPE OF URGENCY URINARY INCONTINENCE BASED ON MOLECULAR PROFILING

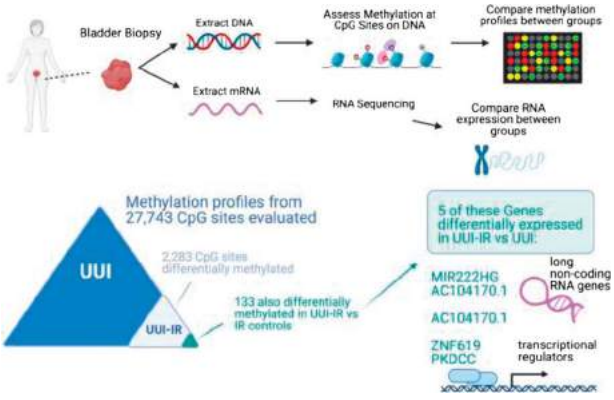
N. Siddiqui[1], K. Lu[2], C. Amundsen[2], J. Prinz[2], S. Murphy[1]. *Duke University Medical Center[1], Duke University[2]*

Objective: Among women with idiopathic urgency urinary incontinence (UUI), there are high proportions who also have insulin resistance, including prediabetes and type II diabetes mellitus. As such, UUI with insulin resistance (UUI-IR) may be a distinct subtype with unique pathophysiologic features. Insulin resistance is associated with systemic changes in DNA methylation, which helps regulate gene activity. We hypothesized that, different from other UUI, UUI-IR results from altered DNA methylation of urothelial genes involved in sensory nerve signaling. Thus, we compared methylation and RNA expression profiles in urothelial tissue between these groups.

Methods: Non-muscle invasive bladder biopsies were performed in 3 groups of women: idiopathic UUI (no IR), UUI-IR, and IR controls. IR controls with normal bladder function were included to ensure that findings were not attributed to IR alone. UUI was assessed with a validated questionnaire; IR with serum Hemoglobin A1C (Hgb A1C). Methylation profiling was performed using the Illumina Infinium MethylationEPIC array. Expression profiling was performed using RNA-sequencing. Methylation and expression profiles were compared; false discovery rate adjustment was not performed due to small sample sizes in this pilot study. We triangulated sites that were differentially methylated between UUI and UUI-IR, and also differentially methylated in UUI-IR compared to IR controls. RNA-sequencing data for candidate genes corresponding to these methylation sites were reviewed to determine which genes were also differentially expressed between UUI and UUI-IR.

Results: A total of 38 women were included: 13 with idiopathic UUI, 17 with UUI-IR, and 8 IR controls. Baseline characteristics were not significantly different, although by design, Hgb A1C was lower in women with idiopathic UUI (5.1 mmol/mol) compared to the other groups (6.7 in UUI-IR, 6.8 in IR controls; ANOVA $P < 0.01$). Of the 27,743 CpG sites that remained after normalization, 2,283 sites were differentially methylated between UUI and UUI-IR groups ($P < 0.01$). Of these, 133 sites were also differentially methylated in UUI-IR compared to IR controls ($P < 0.01$, Figure). Of these, 5 genes were differentially expressed in tissues from UUI-IR compared to UUI groups, including long non-coding RNAs and other transcriptional regulators.

Conclusions: Data from bladder biopsies demonstrate molecular differences between UUI and UUI-IR. These findings underscore the need to better understand pathophysiologic subtypes for targeted therapies. We propose a set of candidate genes that may be useful for future studies targeting the pathophysiology of UUI-IR.



Disclosures: Nazema Siddiqui: Medtronic Inc: Grant/Research Support: Self, Ethicon: Grant/Research Support: Self, UpToDate: Other Financial or Material Support: Self , Kathy Lu: None, Cindy Amundsen: None, Joseph Prinz: None, Susan Murphy: None

Full Oral 17
REDUCING PELVIC FLOOR INJURY BY INDUCTION OF LABOR

L. Burkett[1], T. Canavan[2], R. Durst[3], S. Glass Clark[1], L. Giugale[1], A. Artsen[4], P. Moalli[1]. *Magee Womens Hospital/University of Pittsburgh Medical Center[1], East Tennessee State University[2], UPMC Magee Women's Hospital/MWRI[3], Magee-Womens Research Institute[4]*

Objective: To test the hypothesis that women undergoing elective induction of labor (eIOL) at 39 weeks are protected from pelvic floor injury and have fewer pelvic floor symptoms at 6 weeks postpartum as compared to women who undergo expectant management of labor.

Methods: Prospective cohort pilot study of uncomplicated, primiparous women with a singleton, vertex gestation enrolled immediately post vaginal delivery (VD). Subjects dichotomized into groups based on labor management: eIOL without complication defined by the ARRIVE trial versus spontaneous VD between 39 weeks$^{0/7}$ and 42 weeks$^{5/7}$, or no indication for IOL prior to 40 weeks$^{5/7}$ after declining eIOL. The primary outcome was immediate pelvic floor injury at 6 weeks postpartum as evidenced by any of the following ultrasound measures of levator ani muscle injury (LAMI): 1) increased levator hiatal area or 2) increased enthesis elasticity index (inverse tissue modulus) or 3) LAM avulsion. Secondary outcomes included POP-Q points, vaginal angle, maternal and neonatal clinical and sociodemographic characteristics, pelvic floor symptom and subjective birth experience questionnaires. Follow-up questionnaires, pelvic exam, and transperineal ultrasound occurred at 4-8 weeks postpartum. A sample size of 21 in each group had 80% power to detect a 20% difference in mean LHA of 1500 mm^2 (sd 335) based on a two-group t-test with a 5% two-sided significance level.

Results: 42 of 102 consented women attended study visits from 7/2019- 10/2020 (eIOL n = 22 and spontaneous VD n = 23). Maternal and neonatal clinical and sociodemographic characteristics, degree of obstetric perineal injury, pelvic floor symptoms, and subjective birth experience did not differ between groups. Anterior vaginal wall POPQ points were greater and TVL longer in the spontaneous VD group. Fewer women had LAMI as defined by the primary outcome with eIOL (n = 5, 23.8%) as compared to spontaneous VD (n = 15, 65.2%), $P = 0.008$. There were 10 avulsion injuries in 7 patients with higher incidence in the spontaneous VD group, ($P = 0.062$). Enthesis elasticity index was increased (more deformable) with spontaneous VD as compared to the eIOL [10.66 (8.99) vs. 5.68 (2.93), $P = 0.046$]. On multivariable logistic regression women undergoing spontaneous VD had unadjusted OR of 6.0 (1.6-22.5, $P = 0.008$) of sustaining an injury as compared to those undergoing eIOL.

Conclusions: Composite ultrasound measures of pelvic floor muscle injury though not pelvic floor symptoms are markedly increased in women undergoing spontaneous VD as compared to those undergoing eIOL at 39 weeks. Further research is needed with a larger sample size to determine the mechanistic basis of the eIOL protective effect and the long-term consequences of markers of immediate asymptomatic injury.

Table: Comparison of outcomes between elective induction of labor and spontaneous vaginal delivery groups

Variable*	All (n=44)	Elective Induction (n=21)	Spontaneous VD (n=23)	p value*
Primary Composite (LHA>2500, q75 strain, Levator avulsion), n(%)	20 (45.45)	5 (23.8)	15 (65.2)	**0.008**
LHA >2500mm^2, n (%)	11 (24.44)	3 (13.63)	8 (34.78)	0.096
Any levator avulsion, n (%)	7 (15.91)	1 (4.76)	6 (26.09)	0.062
Elasticity index > 75% quartile,** n(%)	8 (27.59)	1 (6.25)	7 (53.85)	**0.010**
Elasticity index**, mean (sd)	7.91 (6.76)	5.68 (2.93)	10.96 (8.99)	**0.046**
Levator hiatal area rest, mean (sd)	1814.0 (459.9)	1687.5 (400.6)	1929.4 (488.2)	0.081
Levator hiatal area Valsalva, mean (sd)	2131.7 (512.7)	2017.3 (450.0)	2236.0 (523.0)	0.159
Levator hiatal area Kegel, mean (sd)	1678.2 (434.1)	1578 (353.4)	1769.4 (486.4)	0.147
Perineal degree, n (%)				
1st	10 (28.57	6 (35.29)	4 (22.22)	0.725
2nd	23 (65.71)	10 (58.82)	13 (72.22)	
3rd	2 (5.71)	1 (5.88)	1 (5.56)	
Gh strain	3.3 (0.78)	3.2 (0.62)	3.5 (0.89)	0.161
Pb strain	3.4 (0.59)	3.3 (0.50)	3.5 (0.65)	0.245
Aa	-1.8 (0.64)	-1.5 (0.71)	-2.0 (0.49)	**0.011**
Ba	-1.8 (0.64)	-1.5 (0.71)	-2.0 (0.49)	**0.011**
C	-7.0 (1.62)	-6.7 (-7.39)	-7.3 (1.67)	0.187
D	-7.6 (1.59)	-7.2 (1.49)	-8.0 (1.61)	**0.008**
TVL	8.7 (4.23)	8.3 (4.63)	8.9 (3.89)	0.632
Ap	-2.4 (0.68)	-2.3 (0.65)	-2.4 (0.72)	0.939
Bp	-2.4 (0.62)	-2.4 (0.61)	-2.3 (0.65)	0.742
Brinks score¥	8.42 (1.49)	8.36 (1.65)	8.47 (1.38)	0.801
EPIQ^ POP, n(%)	2 (4.44)	1 (4.55)	1 (4.35)	1
EPIQ SUI, n(%)	4 (8.89)	2 (9.09)	2 (8.70)	1
EPIQ OAB, n(%)	0	0	0	1
EPIQ AI, n(%)	3 (6.67)	2 (9.09)	1 (4.35)	0.608
LAS§, mean (sd)	56.9 (8.75)	55.5 (9.42)	58.4 (7.97)	0.276

*P-values from Fisher's exact, Mann-U Whitney, or Student's t-test where appropriate. Categorical data is expressed as n (%), continuous data are expressed as mean (±standard deviation).
**Deformation standardized relative to rigid bone and expressed as a strain ratio. Greater values indicate more relative deformation and lower values indicate less, with a value of 1 indicating the same deformation as bone.
¥The Brink's score is a validated measure of pelvic floor muscle function by vaginal palpation, scored from 3 to 12 with higher score indicating better muscle function.
^The modified Epidemiology of Prolapse and Incontinence Questionnaire (EPIQ) has validated cut off points for visual analog scale responses to symptoms of pelvic organ prolapse (POP), stress urinary incontinence (SUI), overactive bladder (OAB) and anal incontinence (AI). If score above the cut-off subjects screen positive for symptoms of each pelvic floor disorder.
§The Labor Agentry scale (LAS) The total score out of 80 represents the inverse relationship between anxiety and control with higher scores indicating more control.
Other abbreviations: LHA = levator hiatal area, Gh = genital hiatus, Pb= perineal body, TVL= total vaginal length

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Full Oral 18
IMPACT OF REPEATED BIRTH INJURIES ON THE PELVIC FLOOR MUSCLE REGENERATION

P. Duran[1], E. Zelus[1], S. French[1], K. Christman[1], M. Alperin[1]. *University of California, San Diego[1]*

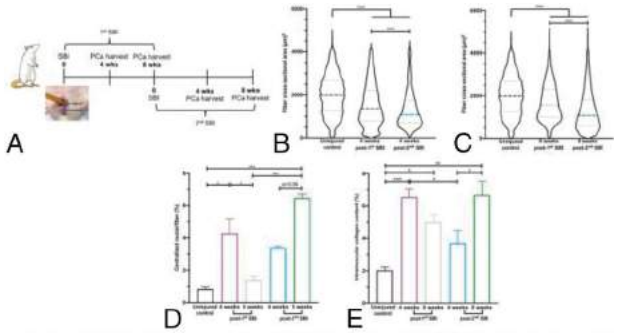
Objective: Childbirth is a key risk factor for pelvic floor muscle (PFM) injury and the associated PFD. Multiparity further exacerbates these risks, with a two-fold greater risk of POP after 2 *vs* 1 vaginal delivery. Using the validated rat model, we have previously identified that acutely simulated birth injury (SBI) damages PFM intrinsic components, especially the pubocaudalis (PCa) portion of the rat levator ani, analogous to the human pubococcygeus. We hypothesized that multiple SBIs overwhelm PFM regenerative capacity, leading to pathological alterations long-term.

Methods: Three-month old Sprague-Dawley rats underwent SBI via vaginal distention and were euthanized 4 or 8 weeks later. Another group of animals underwent repeat SBI after an 8-week recovery period and were euthanized 4 or 8 weeks after the 2nd SBI (N = 3-6/group/timepoint; **Fig.A**). Uninjured animals served as controls. PCa was harvested and prepared for analyses. Antibodies against laminin and collagen I, and nuclear DAPI stain were used to quantify fiber cross-sectional area (CSA), intramuscular collagen content, and % centralized nuclei (CN, index of regeneration), respectively.

Results: CSA decreased 4 wks post-1st SBI compared to controls, with further reduction in fiber size after the 2nd SBI ($P < 0.0001$, **Fig. B**). Following a single SBI, CSA increased at 8- relative to 4 wks, $P < 0.0001$, but remained significantly smaller compared to controls, $P < 0.0001$, **Fig.B,C**. After repeat SBI, a profound decrease in CSA was observed at both timepoints relative to controls and relative to animals post-single SBI ($P < 0.0001$, **Fig.B,C**). In contrast to one SBI, PCa fiber size did not improve at 8- compared to 4 wks post 2nd SBI, $P > 0.9$. CN increased substantially 4 wks post-1st SBI compared to controls, $P = 0.01$, returning to baseline by 8 wks, $P = 0.9$. In contrast, regenerating myofibers, identified by CN, did not increase significantly until 8 wks post 2nd SBI ($P < 0.001$ *vs* controls, **Fig. D**). PCa collagen content rose >3-fold 4 wks after 1st SBI ($P < 0.001$ *vs* controls). This dramatic increase attenuated but remained high 8 wks post-single SBI ($P = 0.3$ *vs* 4wks; $P < 0.04$ *vs* controls, **Fig.E**). The opposite pattern was observed in the repeat SBI group, with collagen content progressively rising over the 8-wk recovery period, **Fig.D**.

Conclusions: Our findings indicate that a single birth injury causes insufficient PFM regeneration, resulting in atrophic and fibrotic degeneration. Repeat vaginal distention further impairs PFM regeneration in the pre-clinical rat model, providing a putative mechanism for the additive risk of multiparity in pelvic floor dysfunction. Future studies will assess PFM properties at an

even longer timepoint, given substantially delayed muscle regeneration following repeat SBIs.



Disclosures: Pamela Duran: None, Emma Zelus: None, Saya French: None, Karen Christman: None, Marianna Alperin: None

Full Oral 20
PATIENT-REPORTED OUTCOME MEASURES TO ASSESS QUALITY OF PROLAPSE CARE

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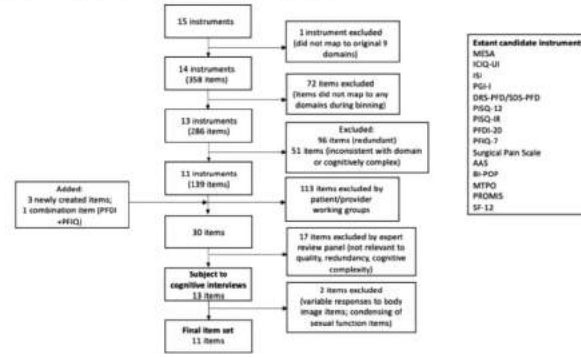
Objective: Patient-reported outcomes (PROs) are important for measuring quality of care, particularly for interventions aimed at improving symptom bother such as procedures for pelvic organ prolapse (POP). A challenge for assessing POP with PROs is that multiple, sometimes lengthy, instruments would be required to measure the full range of patient-centric domains. We aimed to collaborate with patients and providers to create a concise yet comprehensive PRO measurement tool that would be useful to assess POP care in high-volume clinical environments.

Methods: The relevant concepts to be measured to assess POP treatment quality were first established through literature review, qualitative interviews, and a patient and provider-driven consensus-building process. Extant items mapping to these concepts, or domains, were then identified from an existing pool of condition-specific and generic health-related quality of life measures. Item classification and selection was performed to group items assessing similar concepts while eliminating items that were redundant, inconsistent with the domains, or overly complex. A consensus meeting was held in March 2020 where patient and provider working groups ranked the remaining candidate items in order of relevance to the goals of measuring POP treatment quality. Some extant items were revised and new items were created when necessary. Following subsequent expert review, the revised candidate items underwent a cognitive interviewing process with a diverse patient population and were further refined in an iterative process.

Results: Fifteen relevant PRO instruments were initially identified (Figure 1). A total of 358 individual items were reviewed, mapped to domains relevant for POP care, and considered for inclusion in a concise questionnaire. After 2 iterative consensus reviews and 4 rounds of cognitive interviewing with 20 total patients (age range 36–88 years), a total of 11 final items were identified for the final questionnaire. These items map to 5 consensus-based domains that include: awareness and bother from prolapse, physical function, physical discomfort during sex, pain, and gastrointestinal/urinary symptoms. Items related to body image were initially tested but eventually excluded due to highly variable responses during cognitive interviews and poor correlation with quality metrics in other PRO studies.

Conclusions: We present a concise set of candidate items that were developed using rigorous patient-centered methodology and a national consensus process including urogynecologic patients and providers. Validation and performance assessment of these candidate items are ongoing for the development of quality assessment and benchmarking tools for POP care.

Figure 1: Candidate instrument and item selection



Disclosures: Michele O'Shea: None, Sarah Boyles: None, Catherine Bradley: None, Kristin Jacobs: None, Vivian Sung: None, Kevin Weinfurt: None, Nazema Siddiqui: Medtronic Inc: Grant/Research Support: Self, Ethicon: Grant/Research Support: Self, UpToDate: Other Financial or Material Support: Self

Full Oral 21
LEVATOR ANI SUBTENDED VOLUME (ELASV): A PREDICTIVE BIOMARKER FOR SURGICAL OUTCOMES FOLLOWING NATIVE TISSUE APICAL REPAIR

A. Wyman[1], J. Salemi[2], K. Greene[1], R. Bassaly[1], S. Lai-Yuen[1], L. Hoyte[3]. *University of South Florida[1], University of South Florida College of Public Health[2], The Pelvic Floor Institute[3]*

Objective: The levator ani subtended volume (eLASV) plays an important role in pelvic support [1-3]. eLASV is an easily attainable and reproducible objective MRI measurement that quantifies the integrity of the pelvic floor and has been previously described to predict surgical failure following a uterosacral ligament suspension (USLS) in a retrospective study [2,3]. The primary objective of this study was to investigate the clinical utility of eLASV as a prospective preoperative biomarker (positive/negative) to predict surgical outcomes. Our hypothesis was that, compared to patients with a high levator ani subtended volume (eLASV ≥38.5), patients with a low levator ani subtended volume (eLASV <38.5) will have a lower surgical failure rate at one year follow up.

Methods: A prospective cohort pilot study was performed at a single institution. All patients were recruited and consented between 1/2018 and 12/2020 and included for final analysis if they underwent a pre-operative pelvic MRI, planned prolapse surgery (USLS), and followed up at least one year post-operatively. Early surgical failure was defined as presence of a bulge at/or beyond hymnal ring, presence of bulge symptoms, or retreatment for prolapse. eLASV was calculated for each patient from pre-operative MRI based on a previously published algorithm [3]. Descriptive statistics and Fisher's exact tests were used to present eLASV and patient characteristics by surgical outcome. Log-binomial regression was used to calculate risk ratios and 95% confidence intervals representing the association between high levator ani bowel volume (eLASV ≥38.5) and surgical failure.

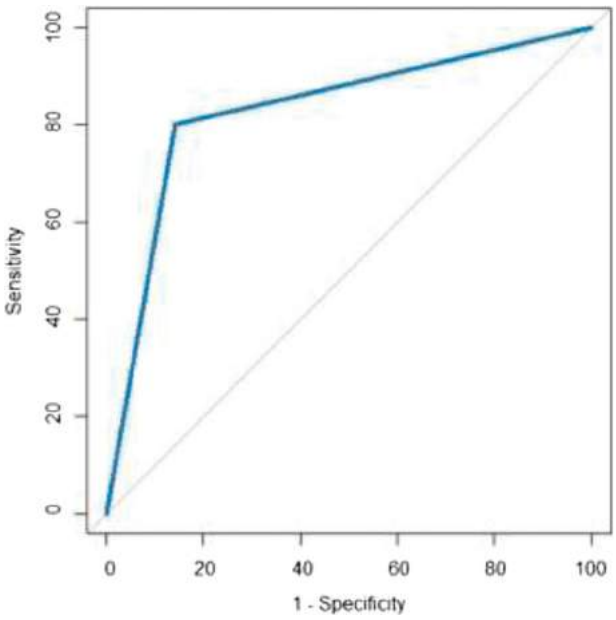
Results: Fifty-one patients were consented for the study, 31 completed a pre-operative MRI, 27 underwent the planned surgery (USLS), and 19 followed up for a one-year post op exam and were included in the final analysis. Five patients (26.3%) met the criteria for early surgical failure at one year with median eLASV volume measurement of 57.0 (IQR: 50.1, 66.2). Fourteen patients (73.7%) met the criteria for surgical success with median eLASV volume measurement of 28.2 (IQR: 17.2, 24.3). Among the patients with defined surgical failure, 80.0% (4/5) had an eLASV above the cutoff point, whereas only 14.3% (2/14) did among patients with defined surgical success ($p = 0.0173$). No patient factors (age, BMI, stage, or parity) were significant confounders and unadjusted log-binomial regression suggested that patients with a high eLASV were 8.7 (95% CI: 1.2, 61.9) times more likely to experience surgical failure compared to those with low eLASV. The c-statistic (area under the receiver operating characteristic curve) was high (0.829), suggesting good discriminative ability of the simple model.

Conclusions: In this small prospective pilot study, patients with an eLASV above 38.5 on a pre-operative pelvic MRI were associated with an increased risk for surgical failure of USLS at one year. Levator ani subtended volume (eLASV) may be used as a prognostic test for surgical outcomes and may aid when counseling patients for apical suspension.

Table 1. Distribution of eLASV and patient characteristics by surgical outcome

Characteristic	Failure	Success	P*	% Surgical Failure
Overall	5	14		26.3
eLASV			0.0173	
≥ 38.5	4 (80.0)	2 (14.3)		66.7
< 38.5	1 (20.0)	12 (85.7)		7.7
Parity			0.6027	
1-2	2 (40.0)	9 (64.3)		18.2
≥ 3	3 (60.0)	5 (35.7)		37.5
Menopausal			0.0844	
Yes	3 (60.0)	2 (14.3)		60.0
No	2 (40.0)	12 (85.7)		14.3
Previous prolapse surgery			0.2632	
Yes	1 (20.0)	0 (0.0)		100.0
No	4 (80.0)	14 (100.0)		22.2
Smoking history			0.3378	
Yes	1 (20.0)	7 (50.0)		12.5
No	4 (80.0)	7 (50.0)		36.4
Diabetes			0.9999	
Yes	0 (0.0)	1 (7.1)		0.0
No	5 (100.0)	13 (92.9)		27.8
COPD or asthma			0.4678	
Yes	1 (20.0)	1 (7.1)		50.0
No	4 (80.0)	13 (92.9)		23.5
BMI			0.6027	
≥ 30	3 (60.0)	5 (35.7)		37.5
< 30	2 (40.0)	9 (64.3)		18.2
Pre-operative stage			0.6027	
Stage 2	2 (40.0)	9 (64.3)		18.2
Stage 3	3 (60.0)	5 (35.7)		37.5
Post-operative stage			0.6027	
Stage 3 or 4	3 (60.0)	5 (35.7)		37.5
Stage 1 or 2	2 (40.0)	9 (64.3)		18.2
eLasv (median, IQR)	57.0 (50.1, 66.2)	28.2 (17.2, 34.3)	0.0031	—
BMI	31.3 (26.8, 31.6)	27.2 (24.2, 32.0)	0.4047	—
Age	51.0 (46.0, 66.0)	48.5 (42.0, 51.0)	0.4307	—

* P-value from a Fisher's exact test (categorical measures) or a Wilcoxon rank-sum test (continuous measures)



1.PMID: 31401263 2.PMID: 22075059 3.PMID: 26596232

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Full Oral 22
DEFORMED MESH LEADS TO FIBROBLAST ACTIVATION IN VIVO

K. Knight[1], G. King[2], A. Suda[1], S. Palcsey[2], S. Abramowitch[1], P. Moalli[3]. *University of Pittsburgh[1], Magee-Womens Research Institute[2], Magee Women's Hospital of the University of Pittsburgh[3]*

Objective: The mesh complication of pain has been localized to areas of deformed, encapsulated mesh. Mesh deformations (pore collapse, wrinkling) lead to variable stress distributions on the underlying tissue (Barone et al 2015). We test the hypothesis that vaginal fibroblasts are highly sensitive to mesh induced stress variations at a very local level and that areas of increased stress that occur with implantation of a deformed mesh result in pathologic myofibroblast proliferation and matrix deposition – a TGF-b1 induced response.

Methods: After laparotomy, 38 rhesus macaques underwent a total hysterectomy and complete transection of level I and II vaginal support (IACUC 16088646). A square-pored polypropylene mesh (3 cm x 12 cm) was implanted in 30 animals by sacrocolpopexy with 3 predefined geometries resulting in progressively increased deformation: **stable**(square pore, open n = 10), **unstable**(diamond pore, collapsed n = 10), and **predeformed**(pores collapsed, mesh wrinkled, n = 10). The mesh bridge to the sacrum was placed at high tension (10 N). **Sham** operated animals served as controls (N = 8). At 12 weeks, mesh-vagina complexes (MVCs) were excised *en bloc*, embedded, cryosectioned (7 μm), and stained with Masson's trichrome or labeled with DAPI, a-smooth muscle actin, and quantitatively assessed for the number of myofibroblast present within the adventitia layer. Latent and active TGF-b1 were quantified via ELISA. One-way ANOVA and Kruskal-Wallis tests were used for statistical analysis with the appropriate post-hoc testing.

Results: All animals had similar weight, gravidity and parity. An increase in fiber/tissue area was observed with each progressive increase in deformation ($P < 0.001$). Mesh deformation resulted in stress variations at a local level as evidenced by areas of tissue thinning (stress shielded) adjacent to thickened areas with collagen and/or matrix deposition (high stress). Myofibroblasts, not normally present in the adventitia, were increased in the unstable (33%, $P = 0.010$) and predeformed (55%, $P = 0.004$) groups but not the stable group ($P = 0.073$) (Figure). The presence of myofibroblasts was positively associated with mesh fibers per area. Two distinct phenotypes were observed in areas of myofibroblast proliferation: 1) collagen deposition/fibrosis and 2) abnormal ECM deposition both resulting in thickening of the adventitia ($P = 0.046$). Active TGF-b1 was highest (79%, $P = 0.001$) in the predeformed group.

Conclusions: Vaginal fibroblasts are sensitive to mesh induced stress variations with likely high stress areas leading to increased TGF-b1, myofibroblast proliferation, and matrix deposition with the implantation of deformed mesh. Myofibroblast induced tissue contraction and fibrosis are a likely mechanism of pain.

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Disclosures: Katrina Knight: None, Gabrielle King: None, Amanda Suda: None, Stacy Palcsey: None, Steven Abramowitch: None, Pamela Moalli: None

Full Oral 23
DOES A DIET MODIFICATION PROGRAM IMPROVE FECAL INCONTINENCE IN OLDER WOMEN?

U. Andy[1], N. Koelper[2], Y. Borodynaskaya[2], L. Arya[2]. *Alayne Markland, University of Pennsylvania School of Medicine[1], University of Pennsylvania[2]*

Objective: Dietary modifications are considered part of first-line management for the treatment of fecal incontinence (FI). However, there is a dearth of evidence-based recommendations. We previously developed a diet modification program (DMP) for community-dwelling older women with FI. The aim of this study was to establish the feasibility and estimate the clinical effectiveness of the DMP.

Methods: We conducted a single-arm pre-post intervention pilot study in women age 65 and older with FI. Participants were instructed to adhere to the DMP for 6 weeks. Briefly, the DMP, developed with patient input, consisted of educational booklets that included: 1) information about FI, 2) healthy diet for older women, 3) diet strategies for managing FI including identifying and managing food triggers, 4) ways to increase dietary fiber intake with information on reading nutrition labels, and 5) sample meal plans and recipes. Participants also completed a 1-week food and bowel journal with review by a physician to give personalized feedback on the DMP. FI symptoms were measured at baseline and 6-weeks. Feasibility was determined as participants' willingness to complete the pilot (ratio of those who started/completed the pilot). The effectiveness outcome was the change in St. Mark's (Vaizey) Score between baseline and 6 weeks. The Vaizey scale is a validated patient-reported instrument used to measure FI symptom severity. Scores range from 0-24, with higher score representing worse symptoms. Secondary effectiveness outcomes included change in the domains of the Fecal Incontinence Quality of life (FIQL) questionnaire. The FIQL consists of 29-items and is divided into 4 domains: general health/lifestyle, coping behaviors, self-perception/depression, and embarrassment scales. Domain scores range from 1-5(higher scores indicating better quality of life). Paired t-test (or paired-sample Wilcoxon signed rank test depending on distribution of the data) was used to compare baseline and post-intervention outcomes. A target sample size

of 46 women was estimated to give 90% power to detect a change equivalent to the estimated MID of 5 points of the Vaizey score.

Results: Of the 46 women recruited, 39 women completed the intervention (85%). Mean age and BMI were 72.3 ± 6.6 years and 29.3 ± 7.3 kg/m2, respectively; 30 (77%) were White, 8 (20%) were Black and 1 (3%) was Asian. Comorbidities included urinary incontinence (22; 58%), depression (11; 29%), and diabetes (5; 13%). The mean Vaizey score decreased (improved) from pre-intervention: 12.3 ± 4.5 to post-intervention: 10.1 ± 0.2; a mean reduction in score of 2.3 points, p = 0.01. For the FIQL, improvements were noted in the coping/behavior subscale (pre: 2.4 ± 0.7 vs. post: 2.6 ± 0.7, $P = 0.01$) and the embarrassment subscale (pre: 2.3 ± 0.8 vs. post: 2.6 ± 0.8, $P = 0.01$) but not the lifestyle or depression/self-perceptions subscales.

Conclusions: Older women with FI are highly interested in diet modification. In this pilot study, we established the feasibility and potential efficacy of our educational DMP for FI. The DMP provided modest improvements in FI symptoms although the clinical significance is unclear. A randomized, controlled trial with longer follow-up is needed to establish the efficacy of the DMP for older women with FI.

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Full Oral 24
SAFETY OF NITROFURANTOIN FOR THE TREATMENT OF URINARY TRACT INFECTIONS IN WOMEN

J. Panza[1], T. Ding[2], Z. Zhao[2], R. Ward[2]. *University of Rochester Medical Center[1], Vanderbilt University Medical Center[2]*

Objective: Nitrofurantoin has many desirable characteristics for treating urinary tract infections (UTIs) in women: low rates of antimicrobial resistance, minimal drug-drug interactions and low microbiome disturbance. However, the Beers Criteria strongly cautions against the use of nitrofurantoin in people aged 65 and older despite noting low-quality evidence to support this recommendation. This study estimated the risk of severe adverse drug events (ADEs) with nitrofurantoin compared to other antibiotics for the treatment of UTIs in women.

Methods: A retrospective cohort study was conducted to assess severe ADEs following antibiotic use for the treatment of UTIs in adult women. Data on nitrofurantoin and other commonly used oral antibiotics (ciprofloxacin, levofloxacin, cephalexin, cefixime, penicillin, amoxicillin ± clavulanic acid, trimethoprim/sulfamethoxazole, and fosfomycin) were collected. Subjects were identified using deidentified electronic medical records at an academic tertiary care center from 1992-2019. UTIs were identified by ICD 9/10 code (599.0/N39.0), urine culture with >100,000 organisms or positive nitrite on urinalysis. Serious ADEs were defined as pulmonary (pulmonary fibrosis), hypersensitivity (anaphylaxis, Stephen Johnson Syndrome), hepatic (hepatic failure/necrosis, drug-induced hepatitis), musculoskeletal (tendonitis, tendon rupture), neurologic (peripheral neuropathy, optic neuritis), hemolytic anemia, C. diff colitis, or coded ADE not otherwise specified (NOS) and identified by ICD9/10 codes that occurred during and up to 30 days following antibiotic prescription. We estimated the odds ratio of severe ADEs with nitrofurantoin compared to other antibiotics using a logistic regression model adjusted for age, BMI, chronic medical conditions and length of antibiotic use (< or ≥ 14 days, or unknown duration).

Results: Of 75,129 UTIs treated with a single antibiotic, 20,117 were treated with nitrofurantoin. The mean age was 51.6 years, with women ≥65 years comprising 20.8% of the nitrofurantoin group compared to 32.7% of all other antibiotics. Baseline renal, pulmonary, or liver comorbidities were present in 12% (8,711). The rate of ADEs on nitrofurantoin was 0.92%, which was approximately one-third the rate on all other antibiotics 2.78% [OR 0.33, 95% CI 0.28 to 0.38, $P < 0.001$]. The discrepancy remained after adjusting for age, BMI, drug duration, and underlying liver, renal, or pulmonary disease [OR 0.37, 95% CI 0.31 to 0.44, $P < 0.001$]. The model was well fit, with an AUC of 0.702. All pulmonary, hepatic, hematologic, ADE NOS and peripheral neuropathy ADEs were less common following nitrofurantoin compared to other antibiotics ($P < 0.002$). The data were inconclusive for musculoskeletal ADEs, C. diff colitis or optic neuritis. Only optic neuritis occurred at a higher frequency with nitrofurantoin (0.015% vs 0.005%). As expected, advanced age, history of liver, renal, or pulmonary disease, and long drug duration increase the odds of having an ADE.

Conclusions: Serious ADEs from nitrofurantoin are much less common than other oral antibiotics, even when adjusted for confounding factors. Despite common lore, the overall risk of severe pulmonary and hepatic adverse events are significantly less likely to occur on nitrofurantoin. These data strongly support the safety of nitrofurantoin and suggests its use should not be limited in older women.

Disclosures: Joseph Panza: None, Tan Ding: None, Zhiguo Zhao: None, Renée Ward: None

Full Oral 25
INCIDENCE OF DE NOVO STRESS URINARY INCONTINENCE FOLLOWING MINIMALLY INVASIVE SACROCOLPOPEXY

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Objective: To investigate the incidence of postoperative de novo stress urinary incontinence (SUI) following minimally invasive sacrocolpopexy (MISC).

Methods: We completed a multicenter, retrospective cohort study of women undergoing MISC without concurrent anti-incontinence procedures at three urogynecology practices from October 2006 through January 2021. Women were excluded if they had prior anti-incontinence surgery, had SUI symptoms, or findings of SUI during preoperative evaluation (urodynamics or prolapse reduction stress test). We performed multivariable logistic regression to evaluate factors associated with the development of de novo SUI, including age, BMI, preoperative urinary urgency, history of transvaginal mesh for pelvic organ prolapse, and diabetes selected a priori as covariates.

Results: Of the 180 women who underwent MISC without concurrent anti-incontinence procedures, 19.4% (n = 35) developed de novo SUI within a mean follow-up of 81 ± 35 months. Of them, 51.4% (n = 18) developed symptoms within the first 6 months. Nearly two-thirds (65.7%) of those who developed de novo SUI complained of SUI symptoms, while 34.3% also had clinical evidence of SUI on postoperative urodynamics or clinical examination. Women who developed de novo SUI compared to women who did not had higher mean BMI (29.4 ± 7.0 vs. 25.8 ± 4.2, $P < 0.001$) and higher median total parity (3 ± 1 vs. 2 ± 1, $P = 0.02$). Furthermore, a greater proportion of women with de novo SUI had a transvaginal mesh history for pelvic organ prolapse ($P = 0.01$) and symptoms of preoperative urinary urgency ($P = 0.017$). However, there were no differences in mean age, prolapse stage, or urodynamic parameters, including preoperative midurethral closure pressure, maximal cystometric capacity, maximal flow rate, or presence of detrusor overactivity (all $P > 0.05$). On multivariable logistic regression, BMI (aOR 1.13, 95% CI 1.05-1.20), preoperative urinary urgency (aOR 2.70, 95% CI 1.13-6.45), and history of transvaginal mesh use (aOR 19.4, 95% CI 2.27-164.8) were found to be significantly associated with de novo SUI (Table 1). A generalized linear model of the existing de novo SUI calculator which was generated from vaginal prolapse surgical data showed a significant correlation for predicting the de novo SUI with our MISC data (RR 35.0, 95% CI 2.91-42.5). Of those who developed de novo SUI, 37.1% (n = 13) declined treatment, 28.6% (n = 10) underwent pelvic floor physical therapy and 34.3% (n = 12) underwent a midurethral sling (MUS). There were no differences between these three groups with regards to demographics, past medical or surgical history.

Conclusions: In our cohort, the incidence of de novo SUI after MISC is low, and most women chose conservative therapy or expectant management. Higher BMI, vaginal parity, urinary urgency, and transvaginal mesh history for pelvic organ prolapse were associated with an increased risk of de novo SUI. We were unable to identify any preoperative urodynamic parameters that increased the risk of de novo SUI. Preoperative counseling for a sacrocolpopexy should include a discussion of the risk of de novo SUI and preoperative factors that may increase this risk.

Table 1: Multivariable analysis of the Risk of De Novo SUI

Risk Factors	OR	95% Confidence Interval	p
Age	0.97	0.93 -1.01	0.22
Body Mass Index (BMI)	1.13	1.05-1.20	0.001
Preoperative urinary urgency	2.70	1.13 - 6.45	0.025
Prior transvaginal mesh for pelvic organ prolapse	19.4	2.27 - 164.8	0.007
Diabetes	0.96	0.26 -3.55	0.946

Disclosures: Jennifer Rowley: None, Youngwu Kim: None, Kaitlyn James: None, Emily Von Bargen: None

Short Oral 1

COMPARISON OF 30-DAY READMISSION RATES FOR SAME DAY VERSUS NEXT DAY DISCHARGE AFTER VAGINAL HYSTERECTOMY USING A NATIONAL SURGICAL DATABASE

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Objective: More robust national data for same day discharge after vaginal hysterectomy is needed. We aim to evaluate readmission rates after same day discharge (SDD) versus next day discharge (NDD) after vaginal hysterectomy in a low-risk surgical cohort using a national surgical database.

Methods: This is a retrospective cohort study of the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database for years 2012-2019. Cases of vaginal hysterectomy with or without adnexal surgery or prolapse repair were identified by CPT codes. Exclusion criteria included hospital stay >1 day, unrelated concurrent procedures, laparotomy or laparoscopy, serious medical comorbidities (eg, insulin dependent diabetes, heart disease, dialysis), American Society of Anesthesiologists (ASA) Class >2, major complication during surgical admission, duplicate coding or key missing data. Demographic and clinical variables were abstracted. The primary outcome was a comparison of 30-day readmission rates between SDD and NDD. Secondary outcomes included comparison of readmission reason and time to readmission between SDD and NDD. Unadjusted and adjusted odds ratios were determined using univariate and multivariate analysis for the primary outcome.

Results: 24,277 women were included and 4,073 (16.8%) were discharged same day. The SDD cohort was younger (48.2 ± 11.3 vs 50.8 ± 12.8 years, $p < 0.0001$). There was no difference in mean body mass index (BMI) (28.7 ± 5.9 kg/m^2), smoking history (14.3%) or ASA class 2 (86.2%) between SDD and NDD. NDD had more cases of hypertension on medication (23.4 vs 18.3%, $P < .0001$) and non-insulin dependent diabetes (4.5 vs 3.3%, $P = .001$). The majority of cases (95.1%) had general anesthesia but when spinal or regional anesthesia was used this was more common in NDD (2.5% vs 4.4%, $P < .0001$). NDD had longer operative times (100.7 ± 47.5 vs 111.2 ± 57.5 minutes, $P < .0001$) and more concurrent prolapse (24.1 vs 41.6%, $P < .0001$) and incontinence procedures (10.7 vs 17.5%, $P < .0001$). SDD had more adnexectomy (63.5 vs 47.2%, $P < .0001$), uterine weight > 250 grams (7.7 vs 5.3%, $P < .0001$) and cystoscopy (29.6 vs 18.8%, $P < .0001$). There was no difference in the 30-day readmission rates between SDD and NDD (1.8 vs 2.0%, OR 0.9, 95% CI 0.7-1.2, $P = 0.40$). This remained true after adjusting for age, race, obesity (BMI>/= 30), smoking, operative time > 180 minutes, and uterine weight > 250 grams (aOR 0.9, 95% CI 0.7-1.2). Smoking status (aOR 1.5, 95%CI 1.2-1.9), obesity (1.4, 95% CI 1.1-1.6), age 45-64yo (age </= 44 yo referent, aOR 0.7, 95% CI 0.6-0.9) and age 65-79yo (0.6, 95% CI 0.5-0.8) were all significantly associated with readmission in the multivariate analysis. The median time to readmission was 11 days for both SDD [IQR 5,16; range 0-29] and NDD [IQR 7,16; range 1-30]. The distribution in the two groups did not differ significantly ($Z = -1.30$, $P = 0.193$). The most common reasons were bleeding complications, surgical infection, bowel obstruction, postoperative pain and ileus or nausea/vomiting.

Conclusions: In this cohort of low-risk surgical patients, SDD was not associated with an increased odds of 30-day readmission when compared to next day discharge. In those without major medical comorbidities, same day discharge may be safely considered.

Disclosures: Elizabeth Robison: None, Kristina Burger: None, Andrew Hundley: None, Silpa Nekkanti: None, Catherine Hudson: None

Short Oral 2

OPIOID CONSUMPTION AFTER UROGYNECOLOGIC SURGERY: A PROSPECTIVE MULTICENTER OBSERVATIONAL STUDY UTILIZING A TEXT-MESSAGING SURVEY TOOL

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Objective: Opioids are commonly prescribed after urogynecologic surgery, however exact opioid requirements for different types of procedures are unknown. Our primary aim was to quantify the morphine equivalents consumed after urogynecologic surgery. Secondary aims were: 1) quantifying non-steroidal anti-inflammatory (NSAID) and acetaminophen use 2) describing prescription patterns 3) establishing mean pain levels by type of surgery and 4) testing for demographic associations with high opioid consumption.

Methods: This was a prospective, multicenter study of patients undergoing surgery for pelvic organ prolapse (POP), or a sling procedure for urinary incontinence at nine academic centers from May 2019 through January 2021. Patients were excluded if they were unable to use text-messaging in English or Spanish, underwent concomitant laparotomy (other than a fascial sling), were hospitalized more than one day postoperatively, or answered zero text-messages. Preoperative demographics and baseline Brief Pain Inventory (BPI) were collected. Perioperative information including surgical details and prescriptions were extracted from the electronic medical record. Automated text-message surveys were sent daily on postoperative days (POD) 1-14. Daily pain, opioid use, NSAID use and acetaminophen use were collected. Fisher's Exact and Kruskal-Wallis tests were used to analyze associations between baseline demographics and opioid consumption in morphine milligram equivalents (MME). This study was supported by the Fellows Pelvic Research Network and IRB approved at each site.

Results: 262 patients were enrolled in the study. 34 participants were excluded for prolonged hospitalization or insufficient data available. 228 participants were included in the analysis. Median opioid consumption over the two-week period was 25 (IQR 0-60) MME, and the median MME prescribed was 75 (IQR 50-113) MME. Over two weeks, a median of 19 (IQR 9.5-33.5) NSAID tablets and a median of 12 (IQR 3-26) acetaminophen tablets were consumed. Mean pain on a Likert scale 0 to 10 was 5.5 (SD 2.3) on POD1 compared to 1.4 (SD 1.8) on POD14. High opioid consumption (>60 MME, N = 68) was associated with longer operative time ($p = 0.001$), perineorrhaphy ($P = 0.03$), and higher baseline pain scores on the BPI ($P = 0.01$). There was no significant association between high opioid use (>60 MME) and hysterectomy ($P = 0.10$), or a chronic pain diagnosis ($P = 0.08$).

Conclusions: Uorgynecology patients consume a median of 3.3 oxycodone tablets (25 MME) after surgery. Urogynecologists prescribe a median of 6.7 oxycodone tablets (50 MME) more than required. The amount of MME consumed varies significantly with the route and type of surgery performed. Additionally, longer operations, a perineorrhaphy, and elevated baseline pain scores are associated with higher postoperative opioid use. These data highlight the need to generate standard prescribing recommendations by procedure, though individualizing based on patient and surgical factors remains important.

TABLE 1. Opioid consumption by type of urogynecologic surgery

	Vaginal POP Surgery †		Laparoscopic/Robotic POP Surgery‡		Sling §	P
	No Hysterectomy	*Hysterectomy*	*No Hysterectomy*	*Hysterectomy*		
Median MME* consumed (IQR)	20 (0-75)	30 (7.5-70)	30 (0-67.5)	37.5 (5-112.5)	12.5 (0-35)	.03

*MME: morphine milligram equivalents, per CDC guidelines www.cdc.gov/drugoverdose/prescribing/guideline
† Any vaginal prolapse surgery with or without a sling
‡ Any laparoscopic or robotic prolapse surgery with or without a sling or other concomitant vaginal prolapse surgeries
§ Isolated midurethral sling or autologous fascial sling procedure

Disclosures: Molly Dahl: None, Oluwateniola Brown: None, Gabriela Halder: None, Tess Crouss: None, Sarah Eckhardt: None, Mallorie Hoover: None, Christina Dancz: None

Short Oral 3

EFFICACY AND SAFETY OF 2% VS 4% CHLOROHEXIDINE GLUCONATE FOR SURGICAL PREPARATION OF THE VAGINA

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Objective: Chlorhexidine (CHX) is commonly used for surgical preparation of the vagina, at both 2% and 4% concentrations. However, there have been reports of post-operative vaginal discomfort when using the stronger 4% concentration. Our primary objective was to assess the non-inferiority of 2% CHX vs 4% CHX to reduce bacterial contamination rates at 60 minutes after surgical preparation of the vagina. Our secondary objectives were to assess differences in colony forming units (CFU), post-operative vaginal burning and pain for 2% CHX vs 4% CHX.

Methods: This is a single-blinded randomized controlled trial of women who underwent vaginal prolapse surgery with or without hysterectomy from February to August 2020. Exclusion criteria included age < 18 or allergy to CHX. Participants were randomized into two groups: 2% CHX vs 4% CHX for surgical preparation of the vagina. Two vaginal bacterial cultures were collected: 1) preoperatively prior to vaginal preparation and 2) intraoperatively at 60 minutes after vaginal preparation. Contamination is defined in the literature as ≥5,000 CFU. A questionnaire on vaginal pain and burning was also administered preoperatively and in the first three hours postoperatively. For sample size, a prior study reported a post-preparation vaginal bacterial contamination

rate of 22% for 4% CHX. Assuming that 2% CHX would have double the contamination rate of 4% CHX (thus 44%) then 26 participants were needed per group to demonstrate non-inferiority of 2% CHX.

Results: Of 62 women enrolled, 61 (98.4%) completed the study, with 30 in the 2% CHX group and 31 in the 4% CHX group. There were no differences in baseline demographics, length of surgery, or surgical procedures between groups. For our primary outcome, the post-preparation contamination rates were 7% for 2% CHX vs 10% for 4% CHX, with a difference of 3% ($P = 0.52$) (Table 1). This difference did not surpass the 22% threshold needed to rule out non-inferiority. There was no difference between groups in pre-preparation contamination rates, or in pre-preparation or post-preparation CFU counts. There was also no difference in mean reduction in CFU counts between groups. Vaginal pain and vaginal burning were not different between groups, both pre- and postoperatively.

Conclusions: 2% CHX is non-inferior to 4% CHX in reducing vaginal bacterial contamination at 60 minutes after vaginal surgical site preparation. Both groups had a significant decrease in bacterial counts after preparation and low rates of post-preparation contamination and vaginal discomfort. 2% CHX is a reasonable option for vaginal surgical site preparation for prolapse repair including hysterectomy.

Table 1: Results

	2% CHX n=30	4% CHX n=31	p value
Pre-preparation CFU[‡]	162,273 ± 72,129	183,332 ± 40,479	0.17*
Pre-preparation Contamination[¥]	28 (93)	31 (100)	0.24†
Post-preparation CFU[‡] (1 hour after prep)	4,167 ± 18,362	4,612 ± 22,609	0.93*
Post-preparation Contamination[¥]	2 (7)	3 (10)	0.52†
Change in CFU (Pre-preparation to Post-preparation)	-158,107 ± 72,359	-178, 710 ± 56,274	0.22*
Pre-op Vaginal Burning Scale (0-5)	0.03 ± 0.2	0.1 ± 0.3	0.32*
Post-op Vaginal Burning Scale (0-5)	0.6 ± 1.1	0.8 ± 1.1	0.59*
Pre-op Vaginal Pain VAS[£] (0-10)	0.5 ± 1.1	0.5 ± 1.6	0.96*
Post-op Vaginal Pain VAS[£] (0-10)	3.3 ± 2.1	3.2 ± 1.5	0.73*

Data presented as mean ± SD or n (%)
*t-test
†Fisher's Exact
‡CFU = colony forming units
¥Contamination defined as ≥ 5000 CFU
£VAS = visual analog score

Disclosures: Radhika Patnam: None, Amy Askew: None, Jennifer Wu: None, Elizabeth Geller: Boston Scientific: Grant/Research Support: Self, Marcella Willis-Gray: None, Kevin Alby: None, Bravada Hill: None

Short Oral 4
CHLORHEXIDINE GLUCONATE VERSUS POVIDONE IODINE VAGINAL ANTISEPSIS FOR UROGYNECOLOGIC SURGERY: A RANDOMIZED-CONTROLLED NON-INFERIORITY TRIAL

N. Rockefeller[1], T. Petersen[1], K. Meriwether[1], Y. Komesu[1], G. Dunivan[1], C. Ninivaggio[1], P. Jeppson[1]. *University of New Mexico*[1]

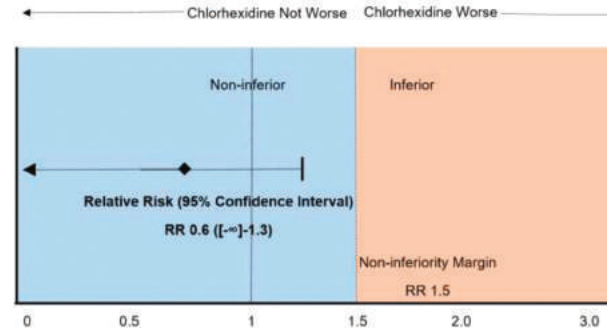
Objective: Povidone iodine (iodine) is currently the only vaginal antiseptic solution approved for use by the FDA, despite a lack of comparative data evaluating other alternatives. Chlorhexidine gluconate (CHG) is readily accessible and recommended by multiple societies as an alternative for patients with iodine allergy. The primary objective of this study was to evaluate the comparative effectiveness of CHG and iodine as pre-surgical vaginal antiseptic solutions on the most common surgery-associated infection following gynecologic surgery, urinary tract infections (UTI).

Methods: We conducted a single-masked randomized-controlled non-inferiority trial for women presenting for urogynecologic surgery at a tertiary care center. The primary outcome measure was symptomatic UTIs within 2 weeks of surgery. Secondary outcomes included culture-proven UTIs at 2 and 6 weeks, symptomatic UTI at 6 weeks, any surgical site infection (SSI) at 2 weeks, and patient reported vaginal irritation. We required 58 patients per arm to demonstrate non-inferiority of CHG compared to iodine (margin of RR < 1.5 for the upper limit of 95% CI) between groups for the primary outcome. As a unidirectional analysis, an upper limit of the 95% CI of <1.5 would denote non-inferiority of CHG. Between and within group differences were evaluated using Fisher's exact test for categorical variables and t-test for continuous variables.

Results: A total of 119 patients (61 CHG; 58 iodine) completed the primary outcome and were included in this analysis. There were no differences between groups' regarding demographic characteristics (mean age ± SD, 58 ± 13 vs 57 ± 12, $P = 0.66$), medical history (recurrent UTI 15% vs. 27%, $P = 0.15$; menopausal 67% vs. 69%, $P = 0.99$; diabetes 12% vs. 15% $P = 0.87$), operations performed, or other perioperative factors. CHG was non-inferior to iodine with respect to the primary outcome, symptomatic UTIs at 2 weeks (10% vs 17%; RR 0.6; 95% CI <1.3) (Figure 1). CHG was also non-inferior to iodine for the secondary UTI outcomes (culture proven UTI's at 2 and 6 weeks, symptomatic UTI's at 6 weeks). Additional secondary outcomes comparing CHG vs. iodine for SSI (1.6% vs 3.4%, $P = 0.5$) and any vaginal irritation (~7% for both groups, $P = 0.99$) did not demonstrate a difference between groups.

Conclusions: CHG is non-inferior to iodine for vaginal antisepsis prior to urogynecologic surgery. Given the similar postoperative infection rates demonstrated in this study, and lack of difference in vaginal irritation, CHG appears to be a safe, reasonable option for vaginal antisepsis prior to urogynecologic procedures.

Figure 1. Non-Inferiority Margin: Symptomatic Urinary Tract Infection at 2 Weeks



Disclosures: Nicholas Rockefeller: None, Tim Petersen: None, Kate Meriwether: Society of Gynecologic Surgeons: Voting Board Member: Self, RBI Medical: Consultant: Self, Elsevier Publishing: Book editor: Self, Caldera: Grant/Research Support: Self , Yuko Komesu: None, Gena Dunivan: Pelvalon: Grant/Research Support: Self, ABOG: Travel reimbursement: Self, ACOG: Travel reimbursement: Self, Viveve: Grant/Research Support: Self , Cara Ninivaggio: Cook MyoSite: Grant/Research Support: Self , Peter Jeppson: None

Short Oral 5
RISK FACTORS FOR ADVERSE OUTCOMES AFTER MINIMALLY INVASIVE PELVIC ORGAN PROLAPSE SURGERY

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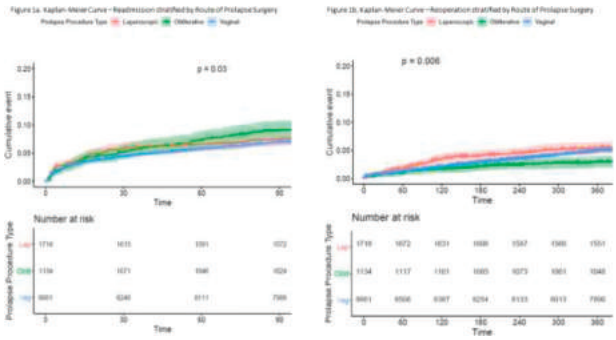
Objective: To describe complications, 90-day readmission and 1-year reoperation rates after minimally invasive pelvic organ prolapse (POP) surgery between 2011–2017 using Medicare 5% Limited Data Set (LDS) Files. Secondary objectives include identifying risk factors associated with these outcomes.

Methods: We identified women undergoing minimally invasive POP surgery in the inpatient and outpatient settings between 2011-2017 using Current Procedural Terminology codes. The Medicare 5% LDS reflects a random sampling of 5% of all Medicare claims across the nation. The incidence of complications, 90-day readmission, and 1-year reoperation for POP or related complications were estimated. We described differences between patient groups using chi-square tests and Wilcoxon rank-sum tests and described cumulative incidences for readmissions and reoperations using Kaplan-Meir estimates across patient factors. Multiple logistic regression was used to identify risk factors for complications, while Cox proportional hazards regression was used for time to readmission and time to reoperation. Models controlled for age, race, Medicaid eligibility, region, type of prolapse surgery, hysterectomy, vaginal mesh, sling and Charlson Comorbidity (CC) Score. A P value <0.05 was considered significant.

Results: 11,513 women met inclusion criteria. The mean age was 72 years (SD ± 8); the majority were White (91%) and from the South (43%). The majority of procedures were performed vaginally(75%) and did not include hysterectomy (68%). During the index surgical encounter, 7% experienced a complication. Laparoscopic (aOR1.3, 95%CI1.1-1.5) and obliterative surgery (aOR1.5, 95%CI1.3-1.8), vaginal hysterectomy (aOR1.4, 95%CI1.2-1.6) and CC score (aOR1.1, 95%

CI1.1-1.2) were associated increased odds of complications; Northeast (aOR0.7, 95%CI0.6-0.9) and Southern US (aOR0.8, 95%CI0.7-0.9) were associated with lower odds compared to the West. The 90-day readmission rate was 7.3%, and the 1-year reoperation rate was 4.5%. Figure 1 displays the risk of readmission and reoperation stratified by route of surgery. In regards to readmission, Medicaid eligibility (aHR1.6, 95%CI1.3-1.9) and concurrent sling procedures (aHR1.2, 95%CI1.1-1.4) were associated with increased risk; living in the Northeast (aHR0.8, 95%CI0.6-0.9) was associated with a decreased risk compared to the West. In regards to reoperation, vaginal mesh was associated with an increased risk (aHR1.4, 95%CI1.1-1.7); obliterative surgery was associated with a decreased risk (aHR0.6, 95%CI0.4-0.9).

Conclusions: In Medicare recipients, complication, readmission, and reoperation rates are low after minimally invasive POP surgery. These findings can help inform counseling about the risk of adverse outcomes in women ≥65 undergoing minimally invasive POP surgery.



Disclosures: C. Emi Bretschneider: None, Charles Scales: None, Oyomoare Osazuwa-Peters: None, David Sheyn: Renalis: Grant/Research Support: Self , Vivian Sung: None

Short Oral 6
IS DELAYING UROGYNECOLOGIC SURGERY FOR PATIENTS WITH ELEVATED HEMOGLOBIN A1C HIGH-VALUE CARE?

R. Wang[1], H. Harvie[2]. *Hartford Hospital[1], University of Pennsylvania/PSOM[2]*

Objective: Poor glycemic control is a risk factor for surgical complications. Urogynecology surgery can be delayed or avoided to optimize outcomes. We aimed to evaluate the cost-effectiveness of immediate pelvic reconstructive surgery versus delayed surgery for women with hemoglobin A1c (HgA1c) >8%.

Methods: A Markov decision model was constructed from the healthcare sector perspective to compare costs (2020 U.S. dollars) and effectiveness (quality-adjusted life-years, QALY) of three treatment strategies. Patients with HgA1c >8% can undergo immediate surgery, delay surgery for 6 months, or delay surgery until HgA1c decreases to <8%. Those in the delayed surgery groups undergo treatments to improve their glycemic control. Our primary outcome was the incremental cost-effectiveness ratio (ICER). Input parameter estimates were from the literature, including probabilities of complications by HgA1c level, probability of improved glycemic control, health utilities associated with surgery, and costs of complications, glycemic control, and surgery. Time horizon was one year. Sensitivity analyses were performed on input variables.

Results: Immediate surgery for patients with HgA1c >8% cost $13,775 vs. $6,622 with health utility of 0.78 vs 0.76 compared to delaying surgery until HgA1c is <8%. The ICER was $347,132/QALY, higher than the maximum willingness-to-pay threshold of $150,000/QALY. Delaying surgery for 6 months was dominated (higher cost and lower effectiveness). For patients with severe prolapse symptoms resulting in health utility <0.71 without surgery (base case 0.75) or when health utility following surgery is >0.84 (base case 0.80), immediate surgery becomes cost effective. Sensitivity analyses showed if the probability of complications with elevated HgA1c decreases to <17% (base case 27%), then immediate surgery becomes cost-effective.

Conclusions: For patients with pre-operative HgA1c >8%, delaying surgery until improved glycemic control is generally the cost-effective option. However, immediate surgery can be cost-effective for patients who have severe cases of prolapse or if the complication rate decreases to 60% of currently reported rates.

Figure 1. Decision tree model with Markov chain for the strategy of delaying surgery until hemoglobin A1c (HbA1c) decrease below 8%.

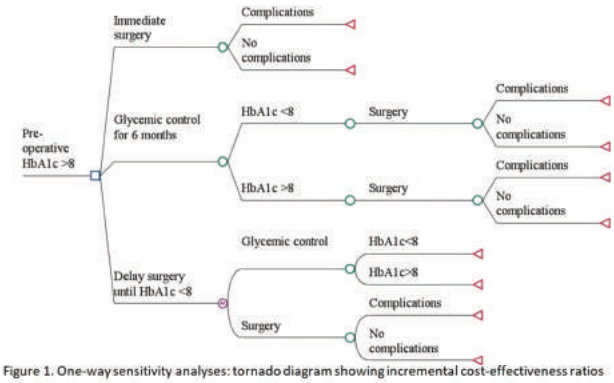
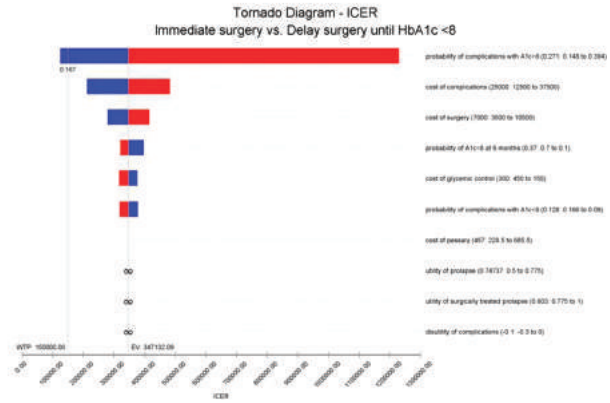


Figure 1. One-way sensitivity analyses: tornado diagram showing incremental cost-effectiveness ratios (ICER) for all ranges of input variables. Variables with the greatest impact on the model are listed at the top with the widest bars. The base case estimates and range of each variable are listed in parentheses. When the ICER is less than the willingness-to-pay (WTP) threshold, immediate surgery is cost effective. Red bars denote ICER results from input values larger than the base case estimates; blue bars denote ICER results from input values smaller than base case estimates. EV: expected value.



Disclosures: Rui Wang: None, Heidi Harvie: None

Short Oral 7
ENHANCED RECOVERY AFTER SURGERY OPTIMIZATION IN UROGYNECOLOGY

J. Shi[1], E. Von Bargen[1], M. Weinstein[2], K. James[1]. *Massachusetts General Hospital[1], Massachusetts General Hospital, Harvard Medical School[2]*

Objective: Enhanced Recovery After Surgery (ERAS) has been widely implemented as an effective method of improving surgical outcomes. Implementation of ERAS protocols reduces hospital stays, decreases postoperative pain, decreases complications, and increases patient satisfaction in gynecologic surgery. However, there is a lack of robust data evaluating methods of improving basic ERAS tenets in urogynecologic surgery. The objective of our study was to identify ERAS parameters that optimize same day discharge and postoperative pain control.

Methods: We conducted a retrospective cohort study of women who underwent minimally invasive urogynecologic surgery with hysterectomy at a tertiary care academic institution from October 2016 through January 2021. Patients were managed following an ERAS pathway which was broadly implemented at the institution. Perioperative parameters including surgical timing, surgical route, patient demographics, comorbidities, and perioperative pain management were compared using parametric and non-parametric tests between patients with and without same day discharge. The same tests were performed in patients who were and were not administered postoperative narcotic pain medications. A multivariable logistic regression model was created to determine associations between covariates chosen a priori and same day discharge; the model included patient age, case start time, operative time, route of surgery, ASA class, and insurance status. A multivariable linear regression model for total postoperative opioid dosage in morphine milligram equivalents (MME) included various preoperative analgesics as well as postoperative ketorolac and prior opioids.

Results: During the study period, 353 of 358 women were included. The average age was 61.5 (SD 11.2) and the average BMI was 27.1 (SD 5.0). Women were predominantly Caucasian (84.1%) and privately insured (58.1%). Surgical approaches included laparoscopic/robotic (54.7%), and vaginal (45.3%). 217 (61.5%) women were discharged home same day and 136 (38.5%) were discharged home postoperative day one or later. Factors that impacted same day discharge included earlier case start time ($P < 0.001$), shorter duration of surgery ($P = 0.031$), and lower ASA class ($P = 0.041$). In adjusted models for same day discharge, longer operative time was associated with a decreased risk of same day discharge (aOR 0.61 per hour of operative time (95% CI 0.45-0.83)) as was case start time after noon (aOR 0.12 (95% Cl 0.07-0.22)). There was no difference in same day discharge based on route of surgery, ASA class, or insurance provider. Administration of postoperative ketorolac was associated with administration of postoperative opioid medications ($P = 0.018$). In the adjusted linear regression model for total postoperative narcotic dose measured in MME, preoperative celecoxib and gabapentin were associated with a postoperative narcotic requirements (?? = -66.0 ($P = 0.029$), ?? = -68.0 ($P = 0.042$), respectively).

Conclusions: Following ERAS protocols, case start time after noon and cumulative surgical time were associated with an increased risk of unsuccessful same day discharge. Administration of preoperative celecoxib and gabapentin resulted in decreased postoperative opioid dosing. Information from this study may assist in counseling patients and setting expectations for odds of same day discharge after surgery. Future studies should use this information to generate a predictive model for same day discharge after surgery.

Disclosures: Joe Shi: None, Emily Von Bargen: None, Milena Weinstein: None, Kaitlyn James: None

Short Oral 8
VESICOVAGINAL FISTULA REPAIR AND SURGEON SPECIALTY: ANALYSIS OF A NATIONAL DATABASE

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Objective: Vesicovaginal fistula (VVF) is a rare condition in United States that confers significant physical and emotional morbidity to the patient. Most VVFs require repair which can be performed by surgeons in the gynecologic or urologic specialties. Given the rare nature of the surgery, it is imperative to monitor peri-operative outcomes to ensure quality of patient care. We aim to compare rates of major and minor complications for VVF repair based on surgeon specialty and to identify risk factors for complications. The secondary outcomes include readmission and reoperation rates.

Methods: This is a retrospective cohort analysis of the National Surgical Quality Improvement Program (NSQIP) for the years of 2014-2019. Cases were identified using current procedural terminology (CPT) codes for VVF repair. Cases were excluded for pre-existing malignancy, sepsis, renal failure, or emergent surgery. Two cohorts were defined by primary surgeon's specialty: gynecology versus urology. Complication rates for VVF repair were compared between gynecology and urology trained surgeons. Complications were categorized as minor (urinary tract infections, superficial surgical site infection) and major (deep or organ space infections, pneumonia, cardiac arrest, stroke, thrombotic events or blood loss requiring transfusion). Additional outcomes included readmission, reoperation and death rates. Multivariable logistic regression was performed to investigate risk factors for complications and readmissions.

Results: A total of 382 women undergoing VVF repairs were included in analysis of which 135 (35.3%) were performed by gynecologists and 247 (64.7%) by urologists. The average body mass index (BMI) was 29.5 ± 7.4 kg/m^2 and majority of patients were white (258, 67.5%). There were no significant differences in the demographic or medical characteristics between groups except race with fewer non-white subjects in gynecology cohort (9.6% vs 17.0%, $P = 0.007$). Gynecologists performed more concomitant hysterectomies (8.9% vs 0.8%, $P < 0.001$) and apical suspension procedures (5.2% vs 0%, $P = 0.001$). There were no differences in minor (6.7% vs 6.5%, $P = 0.943$) or major (2.2% vs 3.6%, $P = 0.551$) complications between gynecology and urology surgeons. Overall readmission rate was 5.2% and reoperation rate was low at 2.3% with no differences between surgeon specialties. On multivariable logistic regression analysis, longer operative time was the only risk factor associated with having a minor or major complication (p = 0.018). However, regression analysis for readmissions showed that concomitant hysterectomy, mid-urethral sling, insulin dependent diabetes, non-white race and smoking (all $P < 0.05$) were risk factors when controlling for age, Hispanic ethnicity, BMI, ASA class, any comorbidity, concomitant flap, concomitant minor vaginal procedures, and surgeon specialty.

Conclusions: Complication rates did not differ for VVF repairs performed by gynecologists compared to urologists. Readmission and reoperation rates were low for both groups. Surgical planning should take into consideration that concomitant hysterectomy, sling, smoking status, diabetes and non-white race increase the risk of readmissions for VVF repair.

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Short Oral 9
EVALUATION OF GENITOURINARY TRACT INJURY DURING SURGERY FOR PELVIC ORGAN PROLAPSE UP TO 1 YEAR AFTER SURGERY

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Objective: To identify the incidence & risk factors of genitourinary (GU) tract injury related to pelvic organ prolapse (POP) surgery.

Methods: Women who underwent surgery for POP between 2010 and 2019 were identified using Current Procedural Terminology (CPT) codes using the Premier Healthcare Database from Premier Applied Sciences. Patients were excluded if they underwent concomitant non-GU tract surgery or fistula repair, were diagnosed with malignancy, had more than one type of hysterectomy or apical repair listed, or died during the index hospitalization. The primary outcome was GU tract injury within 90 days of surgery. GU tract injury was defined as bladder injury, ureteral injury, and vesicovaginal or ureterovaginal fistula; these were identified using ICD-9-CM and ICD-10-CM codes and CPT codes associated with repair of these injuries. We additionally evaluated the incidence of GU tract injury up to 1 year after the index surgery. Patients were divided into two groups: those who experienced GU tract injury and those who did not. Differences between groups were evaluated using Student's t-test, Wilcoxon rank-sum test, and Fisher's exact test as appropriate. Multivariable logistic regression was used to evaluate the independent predictors of GU tract injury occurring within 90 days of surgery. Separate logistic regression analyses were performed to assess risk factors for bladder injury, ureteral injury and fistula.

Results: 434,982 surgeries for POP were captured during the study period. The mean age of the group was 49.5+/-13.2 years and the majority (77.6%) of patients were white. Apical repair was performed in 22.7%, and hysterectomy was performed in 88.1% of surgeries. Most (84.3%) surgeries were performed by gynecologists, and 9.8% of surgeries were performed by surgeons with ≥50 cases in the 12 months prior to the index surgery. The overall rate of GU tract injury was 14.2 per 1,000 surgeries: 6.3 bladder injuries per 1,000 surgeries, 8.2 ureteral injuries per 1,000 surgeries, and 0.1 fistulas per 1,000 surgeries. The median time to ureteral injury was 0 (0-3) months from surgery, 0 (0-0) months for bladder injury, and 3 (2-8) months for fistula. While the majority of bladder and ureteral injuries were diagnosed within the first 90 days after surgery, 50% (n = 47) of fistulas were diagnosed after 90 days. The most significant variables associated with GU tract injury were: adhesiolysis (aOR = 2.45, 95%CI: 1,79-3.26), hematoma (aOR = 2.33, 95%CI: 1.20-4.08), blood transfusion (aOR = 1.87, 95%CI: 1.26-2.68), and low volume surgeons, <12 cases/year, (aOR = 1.50, 95%CI: 1.33-1.68) while laparoscopic-assisted vaginal hysterectomy (aOR = 0.38, 95%CI: 0.33-0.45) and obliterative repair (aOR = 0.53, 95%CI: 0.32-0.90) were protective.

Conclusions: The majority of GU tract injuries at the time of POP surgery are detected within the first 90 days although 50% of fistulas are detected after 90 days from surgery. Minimally invasive approaches are associated with a decreased risk of GU tract injury, while factors such as intraabdominal adhesiolysis, higher blood loss and low volume surgeons are associated with a higher probability of injury.

Disclosures: Carol Bretschneider: None, Sarah Boyd: None, Ankita Gupta: None, Jonathan Shoag: None, Xian Wu: None, David Sheyn: Renalis: Principal Investigator: Self

Short Oral 10
THE UTILIZATION OF DISPOSABLE SUPPLIES IN A UROGYNECOLOGIC OPERATING ROOM: MEASURING SUBURETHRAL SLING SURGICAL WASTE BY COST AND WEIGHT

A. Melnyk[1], N. Woods[2], M. Bradley[3], P. Moalli[1]. *Magee Women's Hospital of the University of Pittsburgh[1], University of Pittsburgh School of Med[2], University of Pittsburgh Medical Center[3]*

Objective: The health care industry is a leading contributor to solid waste in the United States. Two thirds of a hospital's regulated medical waste is produced

in a surgical unit. Given the large amount of visible waste produced from surgery, we sought to evaluate waste produced during one of the most common urogynecologic procedures. The primary objective was to assess the utilization of single-use disposable supplies in the urogynecology operating room during suburethral sling cases. We hypothesized that an environmentally significant amount of items would be wasted in this minor surgical procedure.

Methods: We performed an observational study of suburethral sling plus cystoscopy procedures performed by seven urogynecologists at an academic medical center from November 1, 2020 to March 31, 2021. Cases were excluded if concomitant procedures were performed. Each case was directly observed by the principal investigator and surgical items were verified with scrub technicians. Our primary outcome was the quantity of wasted supplies, defined as disposable supplies that were opened at the start of the procedure and remained unused at the end of the procedure. Our secondary outcomes included the quantification of those supplies in both weight and United States dollars. In a subset of cases (n = 11), we also obtained the weight of the total amount of trash generated from the case.

Results: A total of 20 suburethral sling cases were directly observed. The most frequently wasted disposable items included the emesis basin, ring basin, and rectangle plastic tray (Table). Redundant supplies were among those most commonly wasted, such as a 1 L sterile water bottle, when typically most cases had greater than 1 L of unused cystoscopy fluid at the conclusion of the case [mean 1387.5 mL (SD 401.0)]. The sum of the weight of the most frequently wasted items among cases was 1.33 lbs, associated with 9.50 dollars. The average total amount of trash (including packaging materials) produced from 11 cases was 14.13 lbs (SD 2.27), which would equate to approximately 14,000 lbs per 1,000 cases. Removal of the most frequently wasted items would achieve a 9.4% reduction in solid waste produced by the case.

Conclusions: This study reveals the large waste burden per surgical case produced by a minor procedure. Removal of frequently wasted items from surgical packs, a reduced number of towels, and smaller cystoscopy fluid bags are simple strategies that could be easily employed to decrease the overall amount of waste produced. The observations from this study speak to the need for all surgeons to re-evaluate unused and unnecessary items in the operating room in order to decrease surgical waste.

UPLOAD-https://planion-client-files.s3.amazonaws.com/AUGS/blobs/dd556d9c-5042-455e-8563-fcd6795e8522/1/Table_Melnyk_Slings.tiff

Disclosures: Alexandra Melnyk: None, Noe Woods: None, Megan Bradley: None, Pamela Moalli: None

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Short Oral 11

FACTORS ASSOCIATED WITH PROLONGED OPIOID USE FOLLOWING STRESS INCONTINENCE AND PROLAPSE SURGERY

M. Willis-Gray[1], S. Dejene[1], J. Young[1], M. Jonsson Funk[1], J. Wu[1]. *University of North Carolina at Chapel Hill*[1]

Objective: The aim of this study is to identify factors associated with prolonged opioid use following surgery for stress incontinence (SUI) and pelvic organ prolapse (POP).

Methods: We identified a population-based cohort of commercially insured individuals using the 2005-2015 IBM Marketscan® databases to identify opioid naïve women, 18 years and older who underwent SUI and/or POP surgery based on CPT codes. Women were considered opioid naïve if they did not have ≥2 opioid prescriptions filled in the 30-days prior to surgery. We evaluated those who received a perioperative opioid prescription defined as an opioid filled 30 days prior to or 7 days after surgery. We assessed demographic and perioperative factors associated with prolonged opioid use. Prolonged opioid use was defined as the proportion who filled any opioid prescription between 90-180 days after surgery. In a log-binomial regression model, we evaluated whether age, year of surgery, US region, route of surgery, any mesh procedure for SUI or POP, concomitant hysterectomy, and type of opioid prescribed were associated with prolonged use and we report adjusted relative risk (adj RR) and 95% confidence intervals (CI).

Results: A total of 160,690 women underwent pelvic reconstructive surgery, with 51,859 (32%) having POP only surgery, 44,844 (28%) having both POP and SUI surgery, and 63,987 (40%) having SUI only surgery. Perioperative opioids prescriptions were filled by 124,667 (78%) women, while 36,023 (22%) did not fill any perioperative opioid prescriptions. The risk of prolonged opioid use in those that received perioperative opioids was 7.5% (95% CI: 7.3, 7.6). In multivariable regression analysis, factors associated with prolonged opioid use include younger age (adj RR, 1.2; 95%CI: 1.1, 1.3 for ages 18-34 compared to ages 45-54), surgeries performed between 2005-2008 (adj RR, 1.2; 95% CI: 1.1, 1.3 for 2005 compared to 2011), surgeries performed outside of the Northeast (adj RR, 1.4; 95%CI: 1.3, 1.5 for the South vs Northeast) and being prescribed tramadol compared to hydrocodone (adj RR, 1.4; 95% CI: 1.2, 1.5). Factors that decreased the risk of prolonged opioid use included prolapse surgery without SUI surgery (adj RR, 0.9; 95%CI: 0.8, 0.9), concomitant hysterectomy (adj RR, 0.8; 95% CI: 0.8, 0.9), surgeries using mesh (adj RR, 0.9; 95%CI: 0.8, 0.9) and being prescribed oxycodone compared to hydrocodone (adj RR, 0.9; 95% CI 0.9, 1.0) perioperatively.

Conclusions: Among opioid naïve women undergoing pelvic reconstructive surgery, younger age, having surgery prior to 2009, living outside of the Northeast region, and perioperative tramadol prescriptions were associated with prolonged opioid use defined as any opioid filled within 90-180 days.

Disclosures: Marcella Willis-Gray: None, Sara Dejene: None, Jessica Young: None, Michele Jonsson Funk: GlaxoSmithKline: Grant/Research Support: Self, GlaxoSmithKline, Takeda, AbbVie, Boehringer Ingelheim, UCB: Collaborative agreement: Self , Jennifer Wu: None

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Short Oral 12

EFFECT OF PREOPERATIVE FIBER ON POSTOPERATIVE BOWEL FUNCTION: A RANDOMIZED CONTROLLED TRIAL

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Objective: To evaluate if pre-operative fiber intake reduces time to first bowel movement after surgery for pelvic organ prolapse.

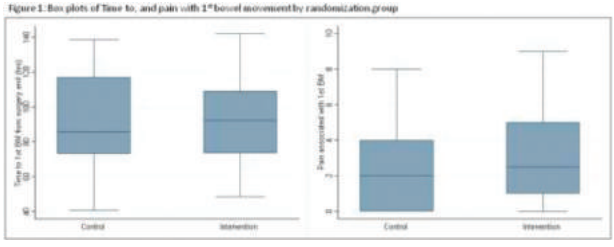
Methods: We performed an unblinded, randomized, controlled trial of women undergoing pelvic organ prolapse surgery between July 2019 and April 2021. Women > age of 18 were eligible if they were undergoing prolapse repair with or without hysterectomy. Women undergoing concomitant bowel surgery or sphincteroplasty were excluded, as were women with conditions affecting bowel function including inflammatory bowel disease, colorectal cancer, sigmoid resection or rectal surgery. Participants were recruited at their pre-operative visit and randomized to receive either 3.4 g psyllium fiber supplementation twice a day for one week before surgery or no fiber supplementation prior to surgery. Randomization was blinded and performed using a 1:1 ratio and a block randomization scheme. Subject demographics and medications that could potentially cause constipation were recorded. Participants were asked to complete the Patient Assessment of Constipation Symptoms (PAC-SYM) questionnaire as well as information about their bowel movement frequency and quality as per the Bristol Stool Scale. On the day of surgery, information was collected about the subject's last bowel movement, adherence to bowel regimen if randomized to intervention group, and procedure performed. Post-operative bowel regimen was standardized for both groups with a standard escalation of treatment for constipation. Subjects completed a bowel diary for their first postoperative bowel movement after surgery characterized by the Bristol Stool Scale and any associated pain or urgency. They also recorded their daily postoperative pain using a Visual Analogue Scale (VAS). Total use of pain and bowel medications was captured. The primary outcome was time to first bowel movement. Secondary outcomes included pain associated with first bowel movement. Fisher's exact test and Student's t-test were used to compare patient demographics. Adjusted linear regression was used for the primary outcome.

Results: 66 patients were enrolled in the study. 1 patient was readmitted with ileus, 3 patients withdrew from the study and 4 patients did not complete their bowel diaries, leaving 58 subjects for the final analysis. Demographic and perioperative characteristics were similar between the groups. There was no difference found between the groups with respect to time to first bowel movement (control: 91.7 hours versus intervention: 92.2 hours, $P = 0.944$). There was no difference found with pain associated with first bowel movement [VAS(range) control: 2.0 (0.0-4.0) versus intervention: 2.5 (1.0-5.0)]. With respect to urgency associated with first bowel movement after surgery and overall pain after surgery, there were no differences found.

Conclusions: Pre-operative fiber prior to prolapse surgery does not appear to improve time to first bowel movement after surgery.

Table 1. Patient demographics and preoperative characteristics

	Randomization group		
	Control	Fiber	p-value
	N=32	N=26	
Age	59.9 (10.3)	61.2 (13.0)	0.683
BMI	27.8 (5.2)	28.4 (6.4)	0.666
Prior prolapse surgery	1 (3%)	5 (19%)	0.080
Use of bowel medications	6 (19%)	3 (12%)	0.495
Anti-cholinergic use	0	1 (4%)	0.448
Calcium channel blocker use	4 (13%)	4 (16%)	0.720
Stage of prolapse			0.999
1	1 (3%)	0	
2	16 (50%)	14 (54%)	
3	14 (44%)	11 (42%)	
4	1 (3%)	1 (4%)	
Frequency of bowel movements pre-operatively	3 (7%)	2 (4%)	0.809
Daily	20 (63%)	17 (65%)	
5-6 times per week	8 (25%)	6 (23%)	
3-4 times per week	4 (13%)	2 (8%)	
Less than 3 times per week	2 (6%)	3 (8%)	
Pre-operative PAC-SYM score	0.3 (0.2-0.7)	0.3 (0.1-0.6)	0.620
Route of surgery			0.823
Abdominal	11 (34%)	12 (46%)	
Vaginal	12 (38%)	8 (31%)	
Laparoscopic	4 (13%)	2 (8%)	
Robotic	5 (16%)	4 (15%)	



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Short Oral 13
OPERATIVE TIME FOR MINIMALLY INVASIVE SACROCOLPOPEXY: COMPARISON OF CONVENTIONAL LAPAROSCOPY VERSUS ROBOTIC PLATFORM

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Objective: Evaluate the operative time for performance of abdominal sacrocolpopexy (ASC) using conventional laparoscopy as compared with the Intuitive DaVinci robotic system. Additionally, we sought to compare anatomic recurrence or retreatment. We hypothesized there would be no difference in operative time, recurrence or retreatment between the two minimally invasive modalities.

Methods: This was a retrospective chart review of all laparoscopic and robotic assisted ASC performed by FPMRS surgeons in a single academic institution between 1/1/2019-12/31/2019. We included all ASC using the DaVinci Si or Xi platform and conventional laparoscopy. We defined operative time as procedure start and stop times (incision to close, in minutes). We also collected information on anatomic prolapse recurrence (leading edge at or beyond the hymen) and any retreatment with pessary or surgery. Patients were excluded if they did not attend a postoperative visit. The primary outcome, operative time, was compared between groups with Student's t test, and a multiple linear regression was performed to adjust for confounders. A margin of equivalence was set at 24 minutes for the two minimally invasive modalities. Chi square analyses and Fisher's exact tests were performed for prolapse recurrence, retreatment, and intraoperative complications.

Results: A total of 142 women were included in this study. Mean age was 61.8 ± 9.6 years and mean BMI 27.1 ± 4.4 kg/m^2. Surgical data from 8 surgeons were included in this analysis. Eighty-five (59.9%) ASC were performed with conventional laparoscopy and 57 (40.1%) with robotic assistance. There were no significant differences between robotic and laparoscopic groups for baseline demographic variables. Robotic ASC had 42 concomitant hysterectomies and laparoscopic ASC had 43 (73.7% vs 50.6%, $P < 0.01$). With regard to the primary outcome, the mean operative times were significantly different between robotic and laparoscopic groups (176.3 ± 45.5 min and 195.0 ± 45.4 min, p 0.02) and within the prespecified margin of equivalence. On linear regression, the variables that predicted significant change in operative time were robotic assistance, concomitant hysterectomy, age, BMI, and no resident involvement (Table). There were no differences in anatomic recurrence beyond the hymen (p 0.74), retreatment (p 0.15), mesh complications (p 0.39), or intraoperative bladder or bowel injury (p 0.15) between minimally invasive approaches.

Conclusions: Contrary to previous evidence, the use of robotic assistance does not appear to increase operative time for patients undergoing ASC in a large academic practice. This data may help to provide new insight into cost utilization for minimally invasive ASC.

Table. Multiple Linear Regression for Operative Time of Minimally Invasive Abdominal Sacrocolpopexy

Predictor	β	95% CI	p value
Robotic Assistance	-16.09	-31.54, -0.64	0.04
Concomitant hysterectomy	25.95	12.13, 39.77	<0.01
Surgeon experience (less than or greater than 5 years in practice)	11.95	-2.36, 26.25	0.10
Age (years)	-0.81	-1.52, -0.10	0.03
Body Mass Index (kg/m^2)	2.58	1.08, 4.09	<0.01
No resident involvement	-32.15	-49.97, -14.34	<0.01

Disclosures: Stephanie Glass Clark: None, Alexandra Melnyk: None, Michael Bonidie: None, Lauren Giugale: None, Bradley Megan: None

Short Oral 14
THE IMPACT OF POST-INJECTION URINARY TRACT INFECTION ON EFFICACY OF INTRAVESICAL ONABOTULINUMTOXINA – A SECONDARY ANALYSIS OF ROSETTA

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Objective: To compare urinary symptoms in women who did and did not develop a urinary tract infection (UTI) within 30 days after intravesical onabotulinumtoxinA (BTX-A) injections for treatment of refractory urgency urinary incontinence (UUI). We hypothesized that a UTI would be associated with inferior BTX-A response.

Methods: This is a secondary analysis of the Refractory Overactive Bladder: Sacral Neuromodulation vs Botulinum Toxin Assessment (ROSETTA) Trial, a randomized controlled trial of BTX-A versus sacral neuromodulation for treatment of refractory UUI. Only those who received BTX-A injection were analyzed, grouped by presence or absence of UTI (UTI vs No UTI). UTI was defined as symptomatic with a positive urine culture per the primary ROSETTA protocol. Our primary outcome was the change from baseline in mean number of UUI episodes based on monthly 3-day bladder diaries averaged over 6 months. Secondary outcomes included other diary parameters, additional treatment for UUI, Overactive Bladder Questionnaire Short Form, Urogenital Distress Inventory, Incontinence Impact Questionnaire, Sandvik questionnaire, and Patient Global Impression of Improvement. We performed t-tests and Chi-Square/ Fisher's exact for continuous and categorical variables, respectively (IBM® SPSS® Version 27, Armonk, NY). We considered a p-value of <0.05 to be statistically significant.

Results: Of 190 participants in the BTX-A arm, 35 (18.4%) experienced a UTI within 30 days of injection and 155 (81.6%) were in the No UTI group. The mean age was 62.9 ± 11.5 years and BMI 32.5 ± 8.4 kg/m^2. Groups did not differ in baseline demographics, baseline mean UUI episodes per day [No UTI (5.30 ± 2.51) vs UTI (5.77 ± 3.28), $P = 0.72$], or any other diary parameters. For our primary outcome, there was no difference in the change in mean daily UUI episodes between the UTI groups 6 months after BTX-A [No UTI (-3.50 ± 2.91) vs UTI (-3.53 ± 2.97); mean difference (95% CI) 0.03 (-1.07 to 1.02), p 0.96])). Similarly, there were no group differences in any secondary outcomes (Table). Given that no variables were statistically significant on bivariable analyses, no regression analyses were performed.

Conclusions: A UTI within 30 days after intravesical injection of BTX-A for refractory UUI was not associated with decreased treatment response at 6 months.

Table. Efficacy and Quality of Life Outcomes at 6 months

Outcomes	No UTI (n=155)	UTI (n=35)	Effect Size [a] (95% CI)	P-value
Change in mean daily urgency urinary incontinence episodes, Mean ± SD [b]	-3.50 ± 2.91	-3.53 ± 2.97	0.03 (-1.07 to 1.02)	0.96
Repeat Botox Injection (%)				
2nd injection, OR (95% CI)	96 (61.9%)	24 (68.6%)	1.34 (0.61 to 2.94)	0.46
3rd injection, OR (95% CI)	45 (29.0%)	13 (37.1%)	1.44 (0.67 to 3.12)	0.35
Anticholinergic Treatment after injection (%)	38 (24.5%)	10 (28.6%)	1.23 (0.54 to 2.80)	0.62
Change From Baseline in Urinary Incontinence, Mean ± SD [b]				
Any	-3.69 ± 3.61	-3.40 ± 2.94	-0.29 (-1.60 to 1.02)	0.66
Nocturia	-0.23 ± 1.15	-0.41 ± 1.41	0.18 (-0.27 to 0.64)	0.42
Voids	-0.72 ±2.79	-0.78 ± 2.30	0.06 (-0.95 to 1.08)	0.90
Pads/day	1.71 ± 2.05	2.27 ± 2.86	-0.56 (-1.61 to 0.49)	0.19
Overactive Bladder Questionnaire Change From Baseline, Mean ± SD				
Symptom bother	-41.87 ± 31.23	-36.76 ± 24.67	-5.10 (-16.40 to 6.20)	0.37
Quality of life	39.16 ± 26.04	34.11 ± 26.27	5.05 (-4.72 to 14.82)	0.31
Score at 6 Months, No. (%)				
PGI-I [c]				
Urinary leakage	83 (69.2%)	20 (76.9%)	1.49 (0.55 to 4.00)	0.43
Bladder function	82 (66.7%)	20 (76.9%)	1.67 (0.62 to 4.47)	0.31
Sandvik [d]			0.63 (0.28 to 1.43)	0.54
Slight	24 (22.6%)	5 (21.7%)		
Moderate	30 (28.3%)	4 (17.4%)		
Severe	25 (23.6%)	5 (21.7%)		
Very severe	27 (25.5%)	9 (39.1%)		
Change From Baseline, Mean ± SD				
Urinary Distress Inventory SF [e]	-24.17 ± 24.92	-20.60 ± 23.14	-3.57 (-14.07 to 6.93)	0.50
Incontinence Impact SF [f]	-28.97 ± 26.52	-23.99 ± 32.14	-4.98 (-16.73 to 6.78)	0.40

[a] Effect size for continuous data reported as mean difference (95% Confidence Interval) and for categorical data as odds ratio (95% confidence interval).
[b] Values for any urinary incontinence, urgency urinary incontinence, nocturia, voids are based on mean number of episodes per day on a 3-day diary captured monthly.
[c] The Patient Global Impression of Improvement (PGI-I) is a patient reported measure of perceived improvement with treatment on a scale of 1 (very much better) to 7 (very much worse). Included here are the proportion of participants who had adequate improvement, defined as a rating of 1, 2 or 3 (better).
[d] The Sandvik scale has a range of 1–12, with higher scores representing worse outcomes categorized into a severity index: slight (1-2), moderate (3-6), severe (8-9), very severe (10-12).
[e] The Urinary Distress Inventory short form (UDI-SF) scale has a range of 0–100, with higher scores indicating greater distress.
[f] The Incontinence Impact Questionnaire short form (IIQ-SF) scale has a range of 0–100, with higher scores representing a worse quality of life.

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Short Oral 15
URINARY TRACT INFECTION FOLLOWING INTRADETRUSOR ONABOTULINUMTOXINA INJECTION FOR NON-NEUROGENIC URGE URINARY INCONTINENCE: SINGLE VS. MULTI-DOSE PROPHYLACTIC ANTIBIOTIC TREATMENT REGIMENS

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Objective: Urinary tract infection (UTI) is one of the most common adverse events following intradetrusor onabotulinumtoxinA (ID-BoNT-A) injection for urge urinary incontinence (UUI). The primary objective was to compare the proportion of post-procedure UTIs within 30 days of injection across two cohorts: those who received single (SDA) vs. multi dose (MDA) prophylactic antibiotics.

Methods: A multi-center retrospective cohort study was conducted through the Fellows' Pelvic Research Network. Females >/= 18 years of age who underwent ID-BoNT-A injection for non-neurogenic UUI were included. Male patients, those with neurogenic UUI, bladder pain syndrome or recurrent UTI, and those who did not receive prophylactic antibiotics were excluded. Chi square was used to compare proportions of those with a clinical UTI within 30 days of injection across the cohorts.

Results: Data from 281 patients who received ID-BoNT-A injection for non-neurogenic UUI from four academic medical centers composed the overall cohort. The SDA cohort included 145 patients (51.6% overall), and the MDA cohort included 136 patients (48.4% overall). Overall, the mean age was 65, patients were primarily Caucasian (81.4%), on average were obese (mean body mass index of 32.3 kg/m^2), and 20% were diabetic. The majority of patients received their first dose of prophylactic antibiotics the day of the procedure or earlier (99.3%), and most (97.2%) received 100 units of ID-BoNTA. Cohorts were similar with the following exceptions: compared to the MDA cohort, a higher proportion of the SDA cohort were obese (47.1 vs. 62.8%, P = .047). The SDA cohort received primarily intravenous antibiotics (75%), while the MDA cohort received primarily oral antibiotics (95%). Regarding the primary outcome, there was no difference in the proportion of clinical UTIs diagnosed within 30 days of injection between SDA and MDA cohorts (Table). More UTIs in the SDA cohort were culture proven than in the MDA cohort (Table). Those with a positive urine culture within 30 days of injection had a 15.2 times greater odds of having a post-procedure UTI than those who did not (95% CI 3.19 -72.53). No individual antibiotic type was associated with post-injection clinical UTIs (Figure). Adverse health events following injection were more common in the SDA vs. the MDA cohort (13.8 vs. 5.9%, P = 0.027), although there was no difference in new diagnoses of recurrent UTI or urinary retention between groups.

Conclusions: In females with non-neurogenic UUI undergoing ID-BoNT-A injection, multi dose prophylactic antibiotic regimens were not associated with lower post-procedure UTI rates. Those with a positive urine culture prior to injection were more likely to have a post-procedure UTI than those who did not.

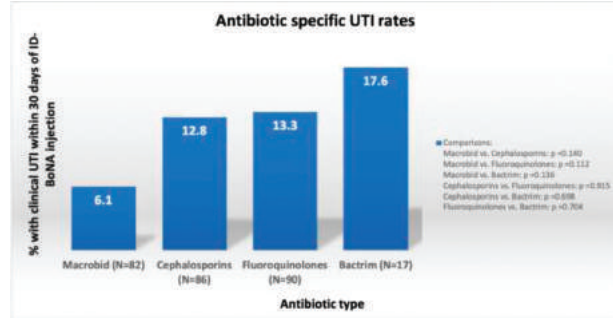


Table: Urinary tract infection data

	Overall (N=281)	Single Dose (N=145)	Multi dose (N=136)	OR	P value
Clinical UTI 30 days pre-procedure	17 (6)	6 (4.1)	11 (8.1)	0.49 (0.16 - 1.37)	0.165
Positive urine culture 30 days pre-procedure	12 (4.3)	2 (1.4)	10 (7.4)	0.18 (0.02 - 0.85)	0.013*
Clinical UTI 30 days post-procedure	34 (12.1)	20 (13.8)	14 (10.3)	1.39 (0.64 - 3.13)	0.369
Culture proven UTI 30 days post-procedure	11/34 (32.4)	10/20 (50)	1/14 (7.1)	13 (1.33 - 606.48)	0.011*
Clinical UTI 30 to 90 days post-procedure	39 (13.9)	20 (13.8)	19 (14)	.99 (0.47 - 2.06)	0.966
Culture proven UTI 30 to 90 days post-procedure	15/39 (38.5)	15/20 (75)	0/19 (0.0)	–	<0.001*

Data were presented in n (%) or n/N (%)
UTI: urinary tract infection
Positive urine culture: urine culture showing >100,000 colony forming units of a single bacterium
Clinical UTI: suspected UTI requiring treatment
Culture proven UTI: a clinically suspected UTI with a positive urine culture showing >100,000 colony forming units of a single bacterium requiring antibiotics
* $p \leq 0.05$ was considered statistically significant

Disclosures: Tess Crouss: None, Youngwu Kim: None, Erica Lai: None, Vini Chopra: None, Matthew Fagan: None, Krystal Hunter: None, Lioudmila Lipetskaia: None

Short Oral 16
EFFECTIVENESS OF A COIN-SIZED TIBIAL NERVE STIMULATOR FOR URGENCY URINARY INCONTINENCE IN A TENS RESPONDER COHORT AT 48 WEEKS

A. Rogers[1]. *Sansum Clinic[1]*

Objective: To evaluate the effectiveness of a subcutaneously implanted coin-sized tibial nerve stimulator (study device) for the treatment of urgency urinary incontinence (UUI) in a transcutaneous electrical nerve stimulation (TENS) responder cohort at 48 weeks.

Methods: The eCoin-2 trial was a prospective, single-arm study evaluating the safety and efficacy of the study device for the treatment of UUI. The primary effectiveness outcome was the proportion of subjects achieving at least a 50% improvement in the number of UUI episodes after 48 weeks of therapy. Secondary outcomes include additional voiding diary measures and patient reported outcomes.

Subjects enrolled had at least 1 UUI episode daily on a 3-day voiding diary, and were intolerant or showed an inadequate response to at least 1 second or third line therapy prior to enrollment with the exception of prior sacral neuromodulation therapy.

Prior to implantation, subjects completed a seven-day TENS protocol to determine their response to TENS of the lower leg, involving two 30 minute stimulation sessions per day. TENS responders were predetermined as those with at least a 30% reduction in either urgency or UUI episodes when compared to baseline. Response to TENS had no bearing on inclusion in the trial. The leadless, primary battery-powered study device is slightly larger than a U.S. nickel and delivers automated therapy every 3-4 days for 30 minutes. It is implanted

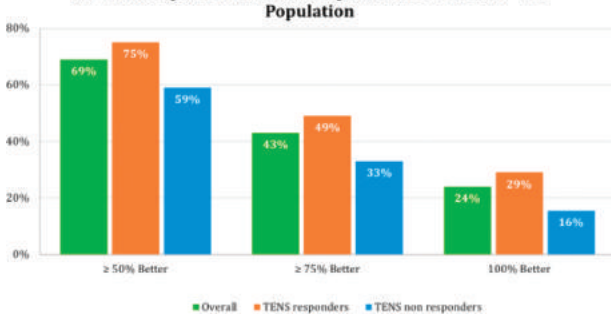
subcutaneously in the medial lower leg during an office procedure under local anesthesia, then activated at 4 weeks post-implantation.

Results: There were 132 subjects in the ITT population, 83 of whom are TENS responders. There were no differences in baseline characteristics between the groups. The majority (63%) of subjects in the ITT population showed a response to the TENS protocol. At 48 weeks post-activation, 68% (95% CI: 60, 76) of subjects in the whole cohort improved by at least 50% in their UUI episodes, 75% (95% CI: 66, 85) in the TENS responder cohort (Figure 1).

Secondary outcomes indicated TENS responders perform slightly better as well, with TENS responders having an average reduction in urgency episodes/day of -1.83 (SD 3.8) and TENS non-responders at -0.87 episodes per day (SD 2.9). Patient reported outcomes also favor TENS responders with an average Patient Impression of Improvement score of 1.96 as compared to non-responders with 2.81.

Conclusions: At 48 weeks, in both the whole cohort and TENS responders show treatment success. Although there is a trend towards greater improvement in the TENS responders, no statistically significant differences are seen. A larger sample size may be needed to assess predictive success of the implant using non-invasive TENS data. Clinicians may consider use of a short-term non-invasive TENS protocol as a helpful counseling tool for prospective patients.

Figure 1. URGENCY URINARY INCONTINENCE IMPROVEMENT for TENS responders and non-responders at 24 Weeks – ITT Population



Disclosures: Alexandra Rogers: Valencia Technologies Corporation: Consultant: Self, Valencia Technologies Corporation: Other Financial or Material Support: Self

Short Oral 17
EFFICACY OF HOME TRANSCUTANEOUS TIBIAL NERVE STIMULATION FOR OVERACTIVE BLADDER

J. Wong[1], D. Stram, M. Patel[2]. *Kaiser Permanente Easy Bay, University of California San Francisco[1], Kaiser Permanente, Northern California[2]*

Objective: To compare the efficacy of home transcutaneous tibial nerve stimulation (TTNS) to traditional office percutaneous tibial nerve stimulation (PTNS) for the treatment of overactive bladder (OAB) and to identify demographic and clinical factors associated with treatment success or failure.

Methods: This is a retrospective study of women with OAB who did PTNS in the office for 12 weeks or did home treatments with TTNS within Kaiser Permanente Northern California from 01/01/2017 to 09/30/2020. TTNS and PTNS cohorts were matched by age and race. Clinically meaningful success was defined as continuation to monthly maintenance treatments. Data were analyzed using chi-square test and multivariate logistic regression.

Results: A total of 592 subjects (n = 296 TTNS, n = 296 PTNS) were identified, of which 276 subjects (n = 60 TTNS, n = 216 PTNS) were included. Subjects who did not have any follow up data or completed less than 8 sessions were excluded. There more subjects in the TTNS group that did not have any follow up data as compared to the PTNS group. The TTNS group without follow up data were still members of Kaiser Permanente and even with extensive chart review we could not find that these women were doing any other treatments for their OAB. Demographics between the two groups were similar. Baseline symptom severity of daytime frequency and urgency related urinary incontinence (UUI) symptoms were similar between groups. Success rates were not significantly different between TTNS and PTNS cohorts (58% and 63%, respectively, p = 0.51). Among subjects with treatment success, demographic and clinical factors, including the severity of OAB symptoms, did not differ significantly between the TTNS and PTNS cohorts (Table 1). In a multivariable analysis of treatment success adjusting for clinical and demographic factors, African American race and former tobacco use were significantly associated with lower treatment success (Table 2).

Conclusions: Weekly home TTNS and traditional office PTNS is about 60% successful in improving symptoms of OAB. We could not find a difference in success in either treatment group although we were underpowered to detect a difference due to lower numbers of follow up data in the TTNS group. While the TTNS subjects without follow up data were not found to be doing other treatments, we cannot assume that this means they were still doing TTNS. Baseline symptoms of urgency, frequency and UUI were not factors associated with success of either TTNS or PTNS. African Americans women and former tobacco users had significantly lower treatment success.

Clinical and demographic characteristics by treatment group

	Failure			Success		
	TTNS No. (%)	PTNS No. (%)	p*	TTNS No. (%)	PTNS No. (%)	p*
Age			0.706			0.524
<55	9 (36)	25 (31)		10 (29)	33 (24)	
55-64	4 (16)	15 (19)		5 (14)	34 (25)	
65-74	9 (36)	23 (29)		14 (40)	53 (39)	
75+	3 (12)	17 (21)		6 (17)	16 (12)	
Race/ethnicity			0.323			0.798
White	23 (92)	58 (73)		27 (77)	111 (82)	
Asian/Pacific Islander	1 (4)	7 (9)		3 (9)	8 (6)	
Hispanic/Latino	0 (0)	7 (9)		2 (6)	10 (7)	
African American	1 (4)	6 (8)		1 (3)	1 (1)	
Other	0 (0)	2 (3)		2 (6)	6 (4)	
BMI			0.498			0.108
<20	0 (0)	3 (4)		4 (11)	4 (3)	
20-24.9	7 (28)	27 (34)		11 (31)	33 (24)	
25-29.9	11 (44)	24 (30)		9 (26)	38 (28)	
30+	7 (28)	26 (33)		11 (31)	61 (45)	
Tobacco use			0.806			0.664
No	14 (56)	48 (60)		25 (71)	97 (71)	
Quit	10 (40)	27 (34)		10 (29)	36 (26)	
Yes	1 (4)	5 (6)		0 (0)	3 (2)	
Detrusor overactivity			0.266			0.357
No	9 (36)	15 (19)		11 (31)	35 (26)	
Yes	6 (24)	20 (25)		11 (31)	22 (16)	
Unknown	10 (40)	45 (56)		13 (37)	79 (58)	
Recurrent UTI			0.195			0.350
No	14 (56)	56 (70)		25 (71)	85 (63)	
Yes	11 (44)	24 (30)		10 (29)	50 (37)	
Unknown	0 (0)	0 (0)		0 (0)	1 (1)	
Intradetrusor onabotulinum toxin A	6 (24)	11 (14)	0.225	2 (6)	20 (15)	0.157
Anticholinergic medications	19 (76)	55 (69)	0.488	21 (60)	98 (72)	0.167
History of stroke	3 (12)	13 (16)	0.606	4 (11)	13 (10)	0.742
Diabetes	3 (12)	16 (20)	0.364	5 (14)	26 (19)	0.508
Daily urinary symptoms – mean (SD)						
Daytime voids	8.8 (3.4)	9.1 (0.9)	0.817	7.9 (3.6)	9.0 (4.0)	0.261
Nighttime voids	3.6 (2.8)	2.3 (1.9)	0.082	2.3 (1.6)	2.2 (1.4)	0.676
Urgency incontinence episodes	1.6 (2.1)	2.3 (3.2)	0.587	2.0 (2.9)	1.9 (2.3)	0.917

*P-value from chi-square test comparing TTNS and PTNS.

Multivariable logistic regression model for odds of treatment success

	Odds ratio (95% CI)	p
Treatment type		
PTNS	1.00	—
TTNS	0.83 (0.45-1.53)	0.545
Age		
<55	1.00	—
55-64	1.50 (0.69-3.24)	0.306
65-74	1.74 (0.86-3.49)	0.122
75+	0.89 (0.38-2.10)	0.794
Race/ethnicity		
White	1.00	—
Asian/Pacific Islander	0.72 (0.26-1.95)	0.513
Hispanic/Latino	0.90 (0.31-2.58)	0.848
African American	0.16 (0.03-0.84)	0.030
Other	2.34 (0.45-12.17)	0.312
BMI		
<20	1.00	—
20-24.9	0.42 (0.10-1.79)	0.238
25-29.9	0.39 (0.09-1.69)	0.207
30+	0.69 (0.16-3.07)	0.631
Tobacco use		
No	1.00	—
Quit	0.56 (0.32-1.00)	0.050
Yes	0.29 (0.06-1.33)	0.113
Recurrent UTI	1.13 (0.63-2.01)	0.691
Intradetrusor onabotulinum toxin A	0.63 (0.29-1.37)	0.244
Anticholinergic medications	0.92 (0.51-1.68)	0.788
History of stroke	0.61 (0.27-1.37)	0.230
Diabetes	0.90 (0.43-1.87)	0.777

Disclosures: Jennifer Wong: None, Douglas Stram: None, Minita Patel: None

Short Oral 19
PATIENT EXPERIENCE OF ANTIMUSCARINIC TREATMENT FOR OVERACTIVE BLADDER: A QUALITATIVE EXPLORATION OF ONLINE FORUM CONTENT

C. Dancz[4], E. Morocco[2], K. Latack[3], K. Ciesielski[3], B. Nguyen[3]. *University of Southern California[1], LAC USC Medical Center[2], Keck School of Medicine of USC[3]*

Objective: To characterize the patient experience of antimuscarinic medications and examine themes related to satisfaction and discontinuation.

Methods: We examined online user reviews for the antimuscarinic medications: oxybutynin, tolterodine, solifenacin, fesoterodine, favoxate, darifenacin and trospium from *drugs.com*, a public-facing, pharmaceutical resource and community forum. Anti-muscarinic medication reviews prior to Feb 2, 2020 were exported to text using "Web Scraper" for analysis. Extracted user content was reviewed qualitatively using an inductive content analysis where clinical relevance (e.g., side effects) formed the basis for initial codes. Codes were subsequently modified by salient, emergent findings. Reviewers additionally coded their impression of the user's entries, categorizing each as: all positive, mostly positive, mostly negative, or all negative. Three members of the research team independently coded 10% of the reviews, with duplicated coding to allow comparison of codebooks, and iterative modification until substantial agreement was obtained (Cohen's kappa >0.6) at which point the remainder were reviewed independently.

Codes were combined thematically for comparative analysis. Individual codes and overall themes were analyzed qualitatively. Proportions of symptoms were compared across medication type using Chi-Square, Mann-Whitney U test, Kruskal-Wallis test as appropriate. Representative quotes were reviewed and presented to support emerging themes.

Results: A total of 469 records were included in our analysis. The most commonly reviewed drugs were oxybutynin (30.5%) followed by solifenacin (29.2%) and fesoterodine (13.2%). Most had taken the medication for <1 month (24.1%), or 1-6 months (17.5%), though duration of use was commonly unreported (42%). The median satisfaction rating of all medications was 7/10. Highest satisfaction was seen with favoxate (10/10), trospium (8/10), trospium XR (9/10), and tolterodine (8/10) ($P < 0.05$). There was no difference in duration of use across medication type ($P = 0.06$).

Most reviews (68.2%) reported improvement in symptoms. The most common side effects were dry mouth (29%) and fatigue (10.7%). Lower satisfaction scores were associated with reviews reporting neurologic, ENT, gastrointestinal, cardiac, psychological, and systemic side effects. Shorter duration of use at time of review was associated with neurologic, gastrointestinal, psychological, and systemic side effects. Fewer neurologic side effects were reported in the solifenacin (none reported) and trospium groups (13.9%, p = 0.009).

Conclusions: While the majority of reviews report improvement of symptoms and satisfaction, antimuscarinic medications are associated with many side effects. Neurologic, gastrointestinal, psychologic, and systemic side effects were associated with lower satisfaction scores and shorter duration of use at time of review.

Representative quotes:

Improvement	"This has worked wonders!" "This has been a life saver" "HURRAY!""
Neurologic	"I developed severe dizziness/vertigo and that I can't deal with"
ENT	"severe dry mouth and throat, my voice has become raspy even"
Gastrointestinal	"During the space of 30 days I lost over 5kg in weight ... I stopped [it] immediately and normal bowel movements restored"
Cardiac	"I felt like my heart was about to jump out of my chest. PLEASE who ever makes this please fix the side effects, so that I can take this medicine"
Psychological	"I feel very nervous and anxious"
Systemic	"This drug kind of made me turn into a zombie"

Disclosures: Elise Morocco: None, Kyle Latack: None, Katharine Ciesielski: None, Brian Nguyen: None, Christina Dancz: None

Short Oral 20
URGENT PC VERSUS A GENERIC POSTERIOR TIBIAL NEUROSTIMULATOR FOR OVERACTIVE BLADDER: A NONINFERIORITY STUDY

S. Handler[1], S.J. Yang[2], J. Nguyen[3]. *Los Angeles County Harbor-UCLA Medical Center[1], Kaiser Permanente[2], Kaiser Permanente Downey Medical Center[3]*

Objective: The objective of this study is to determine if a generic posterior tibial neurostimulator is noninferior to Urgent PC in the treatment of nonneurogenic overactive bladder, urinary urgency incontinence, and mixed urinary incontinence, with treatment success defined as a response of "very much better" or "much better" on the Patient Global Impression of Improvement index collected at the 12 week visit. Secondary outcomes include rates of starting and completing 3 months of maintenance therapy, treatment success at the 3-month maintenance visit, and rates of adverse events.

Methods: We performed a retrospective cohort analysis of women in our tertiary care center whose nonneurogenic overactive bladder, urinary urgency incontinence, or mixed urinary incontinence was treated with either Urgent PC or a generic posterior tibial neurostimulator. Previous research shows a 55% treatment success rate for PTNS. In order to demonstrate noninferiority with a limit of 14% and 80% power, our analysis required 157 patients per group.

Results: We included 267 Urgent PC and 234 generic patients. A per-protocol analysis demonstrated treatment success in 55.3% (121 of 219) of the Urgent PC and 48.6% (85 of 175) of the generic cohort ($P = 0.187$); the difference of 6.7% is within the noninferiority limit. An intention-to-treat analysis showed treatment success in 45.3% (121 of 267) of the Urgent PC and 36.3% (85 of 234) of the generic cohort ($P = 0.690$); the difference of 9% is also within the noninferiority limit. There were no significant differences in rates of starting (82.2% versus 78.2%, $P = 0.409$) or completing (79.9% versus 70.9%, $P = 0.129$) 3 months of maintenance therapy, treatment success at the 3 month maintenance visit (78.5% versus 73.8%, $P = 0.485$), and rates of adverse events (0.37% versus 0.85%, $P = 1.000$) in the Urgent PC versus generic group, respectively.

Conclusions: In this cohort of women undergoing posterior tibial nerve stimulation for nonneurogenic overactive bladder, urinary urgency incontinence, or mixed urinary incontinence, the generic neurostimulator demonstrated noninferior rates of treatment success compared to Urgent PC.

Table 1: Treatment Outcomes for PTNS patients

	Urgent PC (n = 219)	Generic (n = 175)	Total (n = 394)	p-value
Primary outcome				
Treatment success at 12 weeks, n (%)	121 (55.3%)	85 (48.6%)	206 (52.3%)	0.187
Secondary outcomes				
Started maintenance, n (%)	134 (82.2%)	86 (78.2%)	220 (80.6%)	0.409
Completed 3 months of maintenance, n (%)	107 (79.9%)	61 (70.9%)	168 (76.4%)	0.129
Treatment success at 6 months, n (%)	84 (78.5%)	45 (73.8%)	129 (76.8%)	0.485
	Urgent PC (n=267)	Generic (n=234)	Total (n = 501)	
Adverse events (foot pain)	1 (0.37%)	2 (0.85%)	3	1.000

Abbreviations: PGI-I Patient Global Impression of Improvement
*Successful PTNS response indicates PGI-I ≤ 2

Disclosures: Stephanie Handler: None, Su-Jau Yang: None, John Nguyen: None

Short Oral 21
TREATMENT PATTERNS IN WOMEN WITH URINARY URGENCY AND URGENCY INCONTINENCE

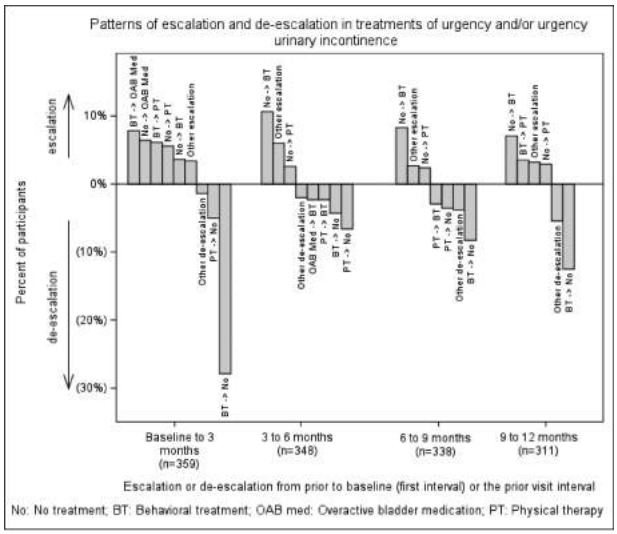
C. Bretschneider[1], J. Jelovsek[2], J. Liu[3], A. Smith[3], C. Amundsen[2], H. Lai[4], J. Geynisman-Tan[1], A. Kirby[5], Z. Kirkali[6]. *Northwestern University[1], Duke University[2], Arbor Research Collaborative for Health[3], Washington University School of Medicine[4], UW Medicine[5], National Institute of Diabetes & Digestive & Kidney Diseases[6]*

Objective: To describe the treatment patterns over 1-year for women presenting to specialty care with urinary urgency (UU) and/or urinary urgency incontinence (UUI).

Methods: This is an analysis of data from a multi-center 1-year prospective cohort study that comprised of participants seeking care for lower urinary tract symptoms (LUTS). This analysis included adult women who reported bothersome UU and/or UUI of "sometimes" or "greater" on the LUTS Tool. UU was defined as a sudden need to rush to urinate or a sudden need to rush to urinate for the fear of leaking; UUI was defined leaked urine in connection with a sudden need to rush to urinate. Participants were queried at baseline and at each of four follow up visits regarding any previous and current UU or UUI treatments over the 12 months of follow up. Treatment groups were ordered from least to more invasive: 1) no treatment, 2) behavioral therapy (BT), 3) physical therapy (PT), 4) overactive bladder (OAB) medications, 5) percutaneous tibial nerve stimulation (PTNS), 6) intradetrusor onabotulinumtoxinA (BTX), and 7) sacral neuromodulation (SNM). Escalation was defined as an increase in treatment level, while de-escalation was defined as a decrease. Treatment escalation and de-escalation and types of treatments were explored graphically.

Results: Among 359 women, 286 reported UUI and 73 reported UU alone at baseline. From baseline to 12 months, 6% of participants reported none of the treatments listed above, 41% reported one type of treatment (36% BT, 3% medication, 2% other), 42% reported 2 types of treatment (24% BT + PT, 16% BT + medication, 2% other), and 11% reported 3+ types of treatments (6% BT + PT + medication, 6% other). Third line treatments were the least used mode of treatment with 13 (4%) participants reporting BTX, 4 (1%) PTNS and 11 (3%) SNM. The figure represents the patterns of treatment escalation and de-escalation during the study period. The most prevalent treatment escalation from baseline to 3 months was a change from BT to medication while the most prevalent de-escalation was BT to no treatment. From baseline to 12 months, 14% of participants reported no change in level of treatment, 63% reported any escalation and 68% reported any de-escalation (not mutually exclusive).

Conclusions: Nearly half of the participants presenting to specialty care with UU and/or UUI reported conservative measures only (BT or no treatment) during the 12-month study period despite reporting bother from these symptoms. Participants who either were on OAB medications at baseline or were started after their first visit tended to stay at this level of treatment over time, and very few participants were escalated to third line treatments.



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Short Oral 22
WET VS. DRY: ARE OVERACTIVE BLADDER PATIENTS WITH AND WITHOUT URGENCY INCONTINENCE THE SAME PHENOTYPE?

M. Torosis[1], A.L. Ackerman[1]. *University of California, Los Angeles*[1]

Objective: The diagnosis of overactive bladder (OAB) includes patients with and without urgency incontinence (UUI). While the same OAB treatment pathway is applied to these patients, it is unclear whether patients with and without UUI are one population spectrum with differing severities or two distinct etiological groups. This study sought to compare OAB women with and without UUI with respect to demographic data, medical history, and pelvic floor symptoms.

Methods: Deidentified data from the NIH/NIDDK-sponsored Symptoms of Lower Urinary Tract Dysfunction Research Network (LURN) was obtained from the NIDDK repository. These data include demographic data for men and women with LUTS seeking care at six US centers and responses to the LUTS Tool, the Functional Comorbidity Index (FCI), Genitourinary Pain Index (GUPI), and the Pelvic-Floor Distress Inventory (PFDI-20). All enrollment data was analyzed and characteristics of women who met criteria for urgency, frequency with (OAB-wet) and without incontinence (OAB-dry) were analyzed. Differences between populations were compared using Student's t-test with Bonferroni correction for multiple comparisons and Mann-Whitney U-test.

Results: In this multicenter dataset, 658 subjects met OAB criteria based on LUTS Tool responses, with 183 and 475 meeting criteria for OAB-dry and OAB-wet, respectively. OAB-dry women were younger, more likely to be premenopausal, and had a lower BMI. While both groups had similar reporting of frequency and nocturia, the OAB-wet group reported more urgency (LUTS A6, $P < 0.0005$) and difficulty postponing urination. Women in the OAB-dry group were more likely to report vaginal and voiding pain, and trended towards increased intermittency and weak stream. The OAB-dry group complained of more incomplete bladder emptying and was more likely to report a need to strain to empty the bladder (LUTS B7, $P < 0.05$), which did not correlate with post-void residual (PVR) volumes. There was no difference in PVR between the two groups.

Conclusions: Women with OAB-dry are younger, have lower BMIs, and are more likely to endorse genitourinary pain and obstructive voiding symptoms.

Acknowledgment: The LURN was conducted by the LURN Investigators and supported by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The data from the LURN reported here were supplied by the NIDDK Central Repositories. This manuscript was not prepared in collaboration with Investigators of the LURN study and does not necessarily reflect the opinions or views of the LURN study, the NIDDK Central Repositories, or the NIDDK.

Characteristics	OAB-dry (n=183)	OAB-wet (n=475)	p value
Age	55.9	59.7	0.07
BMI	28.4	30.5	0.05
Parity	1.37	1.77	0.07
Post-Menopausal	15.8%	47.5%	0.05
Diabetes	13.0%	18.1%	NS
COPD	7.6%	2.0%	NS
Peripheral Vascular Disease	4.4%	4.5%	NS
Smoking History	7.6%	7.7%	NS
PVR (cc)	40	54.00	NS
Prior Hysterectomy	7.5%	22.7%	NS
Prior c-section	4.3%	10.0%	NS
Prior Surgery for LUTS	10.4%	13.9%	NS
Diagnosis of Depression	76.3%	85.5%	NS
Finding Atrophy on Exam	22.4%	17.8%	NS
Self-reported vaginal pain	21.00%	9.00%	0.05

Table. *Demographic features of subjects by OAB subgroup.* NS: not significant.

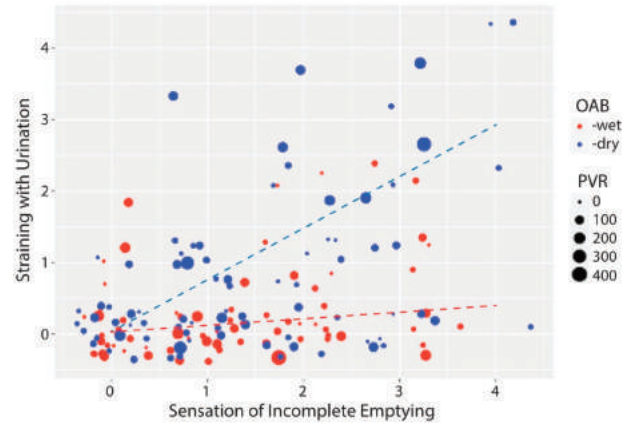

Figure. *OAB-dry subjects exhibit more obstructive urinary symptoms.* OAB-dry subjects were more likely to report the need to strain with urination to empty, which correlated with the sensation of incomplete emptying. In contrast OAB-wet subjects variably endorsed a sensation of incomplete emptying, but infrequently expressed the need to strain to empty. There was no relation between either the subjective sensation of incomplete voiding or the need to strain to empty with post-void residual (PVR) volumes.

Disclosures: Michele Torosis: None, A. Lenore Ackerman: Cynosure, Inc.: Consultant: Self, Watershed Medical: Consultant: Self, Medtronic, Inc.: Grant/Research Support: Self

Short Oral 23
A PHYSICIAN LED COMMUNICATION INITIATIVE TO INFORM OAB PATIENTS OF DEMENTIA RISK ASSOCIATED WITH ANTICHOLINERGIC MEDICATIONS

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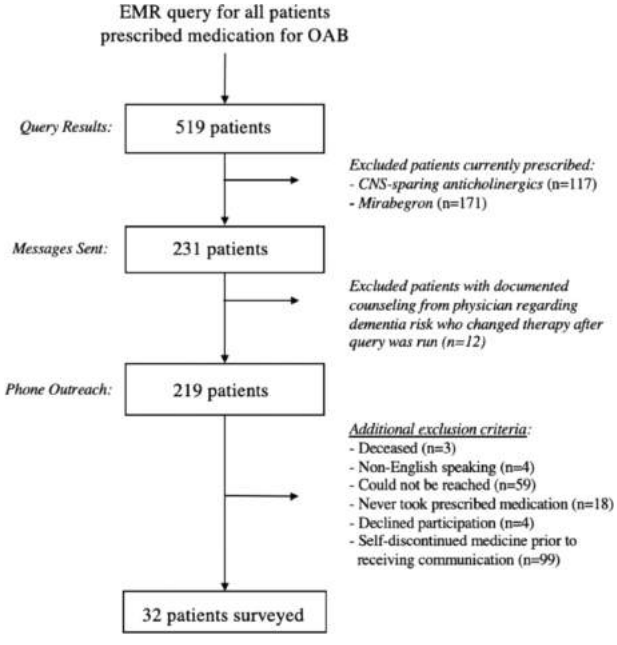
Objective: The aims of this study were to assess the ability of an outreach initiative to communicate the possible cognitive risks to patients taking a 'non-CNS sparing' anticholinergic medication, counsel on treatment alternatives, and determine if this leads to changes in treatment of OAB.

Methods: This was an IRB-approved prospective observational study at a large urban academic center. An institutional data warehouse query was performed via the electronic medical record (EMR) for all patients under the care of our FPMRS faculty who had been prescribed an anticholinergic for treatment of OAB between January 2018 and August 2019. Recent generation anticholinergic medications have been purported to be 'CNS-sparing' in that *in vitro* animal studies have shown limited blood brain barrier penetration. Similarly, Mirabegron has been shown to

have fewer cognitive side effects compared to traditional anticholinergic medications. Thus, we excluded patients last prescribed Mirabegron or a 'CNS-sparing' anticholinergic and sent a message via EMR messenger or traditional mail to patients last prescribed a 'non-CNS sparing' anticholinergic medication. Then, we followed up with a telephone survey to assess if they received the message and were still taking the anticholinergic medication. Patients still taking an anticholinergic medication at the time they received the communication, were surveyed to assess satisfaction with the outreach initiative and for changes in treatment plan.

Results: Of the 231 patients sent the written outreach, 32 were still taking an anticholinergic medication at the time they received the communication and completed the survey. All 32 surveyed patients reported that they had read the written outreach and that it clearly communicated the risk of dementia associated with their bladder medication. Of patients still taking medication, 87.5% were not aware of the risk of dementia associated with their bladder medication prior to receiving the communication; 96.88% felt that the communication sufficiently explained why they should consider changing medication. Additionally, 84.38% reported that the written message was sufficient at explaining the alternate treatment options and these patients made a treatment change. All patients who elected for a change in treatment said their decision was due to fear of dementia. The change in treatment decisions included 13 patients (40.63%) electing to discontinue their medication, 7 patients (21.88%) changed therapy to Mirabegron and 7 patients (21.88%) changed therapy to a 'CNS-sparing' anticholinergic medication.

Conclusions: Overall, this outreach initiative successfully communicated the cognitive risk of anticholinergic medications to our patients and resulted in most patients electing to change their treatment. There was a high rate of self-discontinuation of medication prior to receiving the communication and of those still taking, most elected to discontinue all OAB medications. Patients reported satisfaction with the communication initiative.



Disclosures: Hannah Millimet: None, Kerac Falk: None, Jessica Harroche: None, R Littman: None, Nina Metcalfe: None, Gina Northington: Boston Scientific: Grant/Research Support: Self

Short Oral 24
POSTOPERATIVE URINARY INCONTINENCE IN DIABETIC PATIENTS WHO UNDERGO PELVIC RECONSTRUCTIVE SURGERY

M. Siddique, N. Ringel[1], K.L. de Winter[2], T. Marczak[3], C. Kisby[4], E. Rutledge[5], A. Soriano[6], P. Samimi[7], M. Schroeder[8], S. Handler[9], R. Gutman[10]. *Georgetown University/Medstar Health[1], COMPLETE WOMEN CARE INC[2], Mount Auburn Hospital/Beth Israel Deaconess Medical Center[3], Mayo Clinic[4], Houston Methodist Hospital[5], University of Pennsylvania[6], Vanderbilt University Medical Center[7], UNC Health[8], Los Angeles County Harbor-UCLA Medical Center[9], MedStar Washington Hospital Center/Georgetown[10]*

Objective: Our primary objective was to compare incidence of postoperative stress urinary incontinence (SUI) and urgency urinary incontinence (UUI) in patients with diabetes mellitus (DM) undergoing pelvic reconstructive surgery (PRS) with or without anti-incontinence procedures for SUI. We also sought to investigate SUI and UUI among those undergoing anti-incontinence procedures alone and to identify risk factors associated with different UI outcomes.

Methods: This is a secondary analysis of the SUGAR study, a multicenter retrospective cohort study involving 10 geographically diverse FPMRS programs that used CPT, ICD-9 and ICD-10 codes to identify women with DM who underwent prolapse and/or anti-incontinence surgery from 9/1/13- 8/31/18. For this analysis, we compared rates of UI in the postoperative period among patients who underwent PRS only and PRS with anti-incontinence procedures, and reported on prevalence of postoperative UI for patients who had anti-incontinence procedures only. Patients without data on urinary outcomes were excluded from analyses. Chi-square test or Kruskal-Wallis rank sum test were performed to compare differences among groups.

Results: 330 patients underwent PRS only, 305 had PRS with anti-incontinence procedures, and 189 had anti-incontinence procedures only. Demographics were similar between groups. Rates of de novo UUI were higher among those who underwent PRS with an anti-incontinence procedure compared to PRS alone (26.4% vs 14.1%, $P < 0.01$). Rates of persistent SUI were higher for those who underwent PRS alone vs PRS with an anti-incontinence procedure (21% vs 4.9%, $P < 0.01$). There were no differences in rates of de novo SUI or persistent UUI for those who had PRS with or without anti-incontinence procedure. However, persistent UUI was the most common type of postoperative UUI with a prevalence of 39% and 33.5% reported among those who underwent PRS only and PRS with anti-incontinence procedures, respectively. Denovo SUI was least common, with both groups reporting a prevalence of 9%. For those who reported postoperative UI vs those who did not, prior SUI surgery with mesh was associated with de novo SUI among those who underwent PRS only (19.0% vs 4.9%, $P = 0.041$). There were no differences in mean hemoglobin A1cs between those who did and did not report postoperative UI.

Among patients who underwent anti-incontinence procedures only, 66% had preoperative UUI symptoms in addition to SUI symptoms. After surgery, 13.5% reported persistent SUI, 48.7% reported persistent UUI, and 24.1% reported de novo UUI. Older age was associated with persistent SUI (69 vs 57 years, $P = 0.047$) and persistent UUI (62 vs 54 years, $P = 0.026$). There were no differences in mean hemoglobin A1cs between those who did and did not report postoperative UI.

Conclusions: In this multi-center secondary analysis of the SUGAR study, postoperative denovo UUI rates were high, with incidence being significantly higher for PRS with a concomitant anti-incontinence procedure compared to PRS alone. Older age was associated with persistent UI in patients who underwent anti-incontinence procedures alone. Patients with DM who are considering PRS should be counseled on the different risks of experiencing persistent or de novo SUI or UUI in the postoperative period.

Disclosures: Moiuri Siddique: None, Nancy Ringel: None, K. Lauren de Winter: None, Tara Marczak: None, Cassandra Kisby: None, Emily Rutledge: None, Alex Soriano: None, Parisa Samimi: None, Michelle Schroeder: None, Stephanie Handler: None, Robert Gutman: Boston Scientiic: Grant/Research Support: Self, Boston Scientific: Strategic advisory board member: Self, Johnson & Johnson: Expert Witness for sling defense: Self, UpToDate: Royalties for urethral diverticulum section: Self

Short Oral 25
HYPERGLYCEMIA NEGATIVELY IMPACTS HOST IMMUNE RESPONSE TO PROLAPSE MESH

R. Liang[1], A. Fisk[2], G. King[3], S. Abramowitch[4], P. Moalli[1]. *University of Pittsburgh, Magee-Womens Research Institute[1], University of Pittsburgh[2], Magee-Womens Research Institute[3], University of Pittsburgh[4]*

Objective: Nearly 1 in 5 postmenopausal women is affected by diabetes. Women with diabetes have a ~ 5-fold higher risk in developing mesh exposure/ erosion relative to the general population. We hypothesized that hyperglycemia negatively impacts host response to mesh, resulting in a prolonged inflammation which contributes to the development of mesh complications. This study aims to define the effect of hyperglycemia on the inflammatory response and immune cell population at mesh-tissue interface in a rat sacrocolpopexy model.

Methods: Diabetes was induced in middle-aged female Wistar rats (9–12 months, 300–450 g, n = 24) with streptozotocin. Threshold of hyperglycemia was set at >350 mg/dL. Two weeks following the development of hyperglycemia, a polypropylene mesh was implanted on the anterior and posterior vagina via modified sacrocolpopexy following bilateral ovariectomy and supracervical hysterectomy. Normoglycemic rats (n = 24) undergoing the same procedures

served as control group. At 3-, 7- and 42-days post-surgery, mesh-grafted vaginal tissues (n = 6, 9 and 9 at each time point in each group, respectively) were examined with H&E and Trichrome staining and processed to obtain single cell suspension for flow cytometry. A cocktail of anti-rat antibodies identifying surface markers on different types of immune cells including CD45 (pan-marker of immune cells), CD3 (T cells), CD45R (B cells), CD161a (NK cells) and macrophage markers (CD11b, CD86, CD163, CD172a) were used in the gating strategy. Student t and Mann-Whitney tests were used for statistical analysis with significance set at $P < 0.05$.

Results: Rats developed polydipsia, polyuria, and hyperglycemia (350–626 mg/dL) starting at 72 hours following STZ induction ($p < 0.0001$). Gross morphology of vagina was not different between diabetic and nondiabetic rats with both groups showing mesh fiber-associated inflammation at all time points. Compared to non-diabetic rats, diabetic rats showed a more prominent inflammation at mesh-tissue interface at 42 days with no difference at 3- and 7-days post-surgery (Figure). While the % of CD45+ immune cells in total viable cells at the mesh implantation site did not differ between the two group at all time points, the % of macrophages among the CD45+ cells was 41% higher in diabetic vs. nondiabetic rats at 42 days ($P = 0.003$), indicating an amplified macrophage response to mesh induced by hyperglycemia. The % of lymphocytes did not differ between the two groups.

Conclusions: Hyperglycemia induces an increased inflammation at mesh-tissue interface in the long term, which may be triggered by a dysregulated macrophage response to mesh. As such, women with uncontrolled diabetes are prone to mesh complications following mesh implantation.

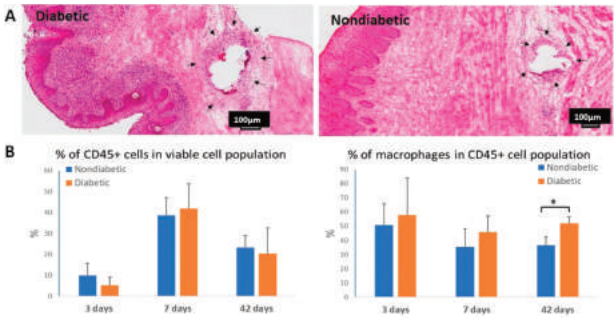


Figure: (A) H&E images showing that a more intense immune response (arrows) was present at mesh-tissue interface in diabetic vs. nondiabetic rat at 42 days following mesh implantation; (B) Flow cytometry results showing that the % of macrophages among the CD45+ immune cells at mesh site was 41% higher in diabetic vs nondiabetic rats at 42 days post-surgery (p=0.003, right bar graph) while the time courses of CD45+ cells recruited to the mesh did not differ between the two groups (left bar graph).

Disclosures: Rui Liang: None, Abigail Fisk: None, Gabrielle King: None, Steven Abramowitch: None, Pamela Moalli: None

Short Oral 26
ENHANCED BIOCOMPATIBILITY OF POLYPROPYLENE MESH WITH ALLOGENEIC STEM CELL SEEDING

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Objective: Polypropylene mesh is widely used in female pelvic surgery, yet complications with permanent grafts may limit its potential use. Our objective was to determine if stem cell seeding of mesh would enhance biocompatibility and result in decreased contracture and mechanical stiffness in a rat model. We evaluated the impact of seeding at two timepoints to assess both acute and chronic graft reaction.

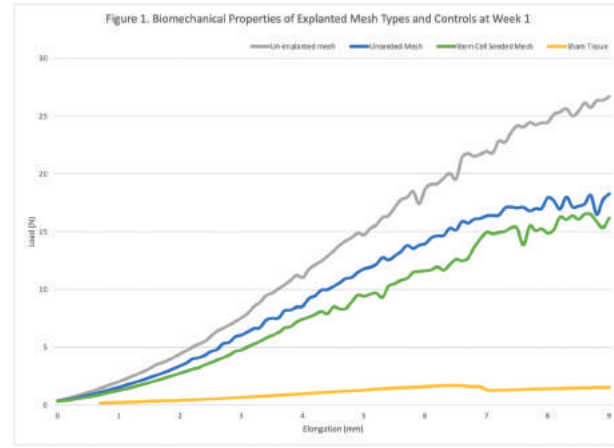
Methods: Polypropylene mesh swatches, size 30x11mm, were dip coated with porcine gelatin using a novel method we developed. Mesh swatches were seeded with rat adipose stem cells at a density of 5 x 10^5 cells/cm^2, or left unseeded. After 20 hours of culture swatches were implanted into female Sprague Dawley rats. Each rat received two meshes into their dorsal subcutaneous tissue, with 24 rats receiving stem cell seeded meshes, 24 rats receiving unseeded meshes, and four rats receiving sham surgeries. Rats were sacrificed at one or 12 weeks. At explant mesh-tissue dimensions were measured with calipers, and biomechanical testing was performed using a tensile testing system. Outcomes were compared between stem cell seeded mesh and unseeded mesh by unpaired t-test.

Results: Rats in all conditions tolerated the mesh implants and had no mesh exposures. There was no difference in rat weight gain by stem cell coating condition (1 week $P = 0.59$; 12 weeks $P = 0.29$). Mesh-tissue contraction was decreased in the stem cell seeded condition at both timepoints (Table 1), with a significant difference between stem cell seeded and unseeded conditions at 12 weeks ($P = 0.013$). Stiffness of mesh-tissue explants was significantly decreased in the stem cell seeded condition at one week ($P = 0.036$), as also demonstrated in the load-elongation curve (Figure 1). There was no difference in the stiffness of explants between conditions at 12 weeks ($P = 0.90$).

Conclusions: Our study is the first to demonstrate in vivo testing of the impact of stem cell seeding of polypropylene mesh. In the acute phase of healing, stem cell seeding is associated with decreased mechanical stiffness of mesh-tissue explants, and in the chronic phase of healing there is decreased contracture. This suggests that stem cell seeding of polypropylene mesh may enhance its biocompatibility.

Table 1: Measures of Mesh Biocompatibility by Timepoint and Condition

	Week 1 (n=24)		Week 12 (n=24)	
Condition	Unseeded	Stem Cell Seeded	Unseeded	Stem Cell Seeded
Rat Weight Gain	12.4 g	14.7 g	103.4 g	87.1 g
Mesh-Tissue Contraction	4.27 %	3.83 %	9.92 %	5.79 %
Mesh-Tissue Stiffness	1.53 N/mm	1.26 N/mm	6.04 N/mm	6.13 N/mm



Disclosures: Katherine McDonald: Caldera Medical Inc: Grant/Research Support: Self , Pooja Swami: None, Danielle O'Shaughnessy: Tepha: Grant Support: Self , Dara Shalom: Boston Scientific: Consultant: Self , Harvey Winkler: Boston Scientific: Consultant: Self, Johnson and Johnson: Expert witness: Self, ConTipi: Consultant: Self , Daniel Grande: None

Short Oral 27
A 36-MONTH PROSPECTIVE STUDY OF TRANSVAGINAL BIOLOGIC GRAFT VS. NATIVE TISSUE FOR THE TREATMENT OF WOMEN WITH PELVIC ORGAN PROLAPSE

L. Lipetskaia[1], P. Rosenblatt[2], F. Lane[3], G. Northington[4], J. Wu[5], B. Henley[6], B. Brucker[7], B. Jarnagin[8]. *Cooper Health University[1], Boston Urogynecology Associates[2], University of California Irvine[3], Emory University School of Medicine[4], University of North Carolina-Chapel Hill[5], Augusta University[6], NYU Langone Health[7], Center for Pelvic Health[8]*

Objective: To compare the safety and efficacy of a dermal bovine tissue transvaginal graft, Xenform™ (TVG), to traditional native tissue repair (NTR) in women surgically treated for anterior and/or apical pelvic organ prolapse (POP)

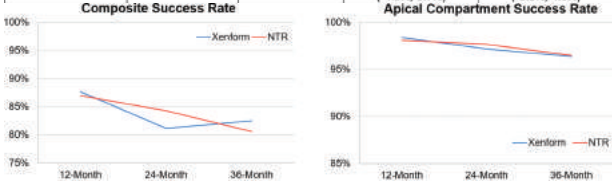
Methods: This was a prospective, non-randomized, parallel cohort, a multicenter trial where subjects received TVG or NTR. The primary endpoint of the study was to achieve non-inferiority (NI) of transvaginal repair with TVG to NTR at 36 months compared to baseline. Treatment success was based on a composite of objective (leading edge of prolapse at or above the hymen; no POP re-treatment) and subjective (no symptoms of vaginal bulging) outcomes

measured at 12, 24, and 36 months. The non-inferiority margin was set at 12%. A propensity score stratification method was applied to achieve balance inpatient and surgeon characteristics between treatment groups. A co-primary outcome was the rate of serious device or serious procedure-related adverse events (SAE) within 36 months. Secondary endpoints included evaluation of graft- and procedure-related complications between baseline and 36 months

Results: The primary outcome, treatment success at 36 months, was 83.6% in TVG and 80.5% in NTR, demonstrating NI (0.2%, 90%CI[-5.6%, 5.9%]) (Table 1). Composite and objective success in apical compartment rate minimally declined with time in both groups (Figure1). The overall rate of SAEs was 5.3% (12/228) vs 2.7% (13/485) in the TVG vs NTR groups, respectively, and TVG was NI to NTR at the preset margin of 12% (2.0%, 90% CI[-0.8%, 4.7%]). Overall AE rates were similar between the TVG and NTR arms: 46.5% (106/228) in TVG subjects and 46.4% (225/485) in NTR subjects. The majority of AEs occurred within the first 6 months following surgery, 77.4% (82/106) for TVG subjects and 67.1% (151/225) for NTR subjects with the most frequently reported AE being de novo voiding dysfunction. There were no reports of graft erosion, and graft exposure rates were low (0.9% [2/228]).

Conclusions: Biologic TVG for the treatment of anterior and/or apical vaginal prolapse was as effective as NTR and as safe as NTR with respect to the rate of the serious device- and/or serious procedure-related AEs at 36 months.

Primary Efficacy Endpoint	TVG	NTR	Unadjusted Treatment Difference (TVG - NTR) Estimate (90% CI)	Propensity Adjusted Treatment Difference (TVG - NTR) Estimate (90% CI)
Intent-to-Treat [a]	83.6% (191/228)	80.5% (390/485)	3.1% (-2.0%, 8.2%)	0.2% (-5.6%, 5.9%)
Per Protocol	82.0% (175/213)	81.1% (389/480)	0.9% (-4.9%, 6.7%)	-1.8% (-8.3%, 4.6%)



Disclosures: Lioudmila Lipetskaia: None, Peter Rosenblatt: Boston Scientific: Grant/Research Support: Self, Boston Scientific: Consultant: Self, Boston Scientific: Legal defense: Self, Coloplast: Consultant: Self, Ethicon: Legal defense: Self, C. R. Bard: Legal defense: Self, Tepha: Consultant: Self , Felicia Lane: None, Gina Northington: Boston Scientific: Grant/Research Support: Self , Jennifer Wu: None, Barbara Henley: None, Benjamin Brucker: Boston Scientific: Grant/Research Support: Self, Urovant: Speakers' Bureau: Self, Allergan: Speakers' Bureau: Self, Watkins Conti: Consultant: Self , barry jarnagin: Acell: Grant/Research Support: Self, BSCI: Grant/Research Support: Self

Short Oral 28
TRENDS IN APICAL SUSPENSION AT THE TIME OF HYSTERECTOMY FOR PELVIC ORGAN PROLAPSE: IMPACT OF ACOG RECOMMENDATIONS.

A. Romanova[1], Y. Sifri[1], B. Gaigbe-Togbe[1], C. Seaman[2], A. Hardart[1], L. Dabney[3]. *Icahn School of Medicine at Mount Sinai[1], Mount Sinai West[2], Mount Sinai Medical Center[3]*

Objective: Studies show that hysterectomy alone is not an adequate treatment for pelvic organ prolapse (POP). In 2017, the American College of Obstetricians and Gynecologists (ACOG) published a Practice Bulletin for POP with recommendations to use a vaginal apical suspension procedure (ASP) at the time of hysterectomy to reduce the risk of prolapse recurrence. Our primary objective was to compare national surgical practice patterns of performing ASP at the time of hysterectomy for POP before and after the publication of these guidelines. Our secondary objective was to compare ASP utilization by surgeon subspecialty.

Methods: This is a retrospective cohort analysis of the National Surgical Quality Improvement Program (NSQIP) for the years of 2015-2016 and 2018-2019. Cases were identified using Current Procedural Terminology (CPT) codes for hysterectomy and further selected using International Classification of Disease (ICD) 9 or 10 codes for POP. Cases were excluded for pre-existing malignancy, sepsis, renal failure, or emergent surgery. The two cohorts were defined based on the year the surgery was performed: 2015-2016 versus 2018-2019 (before and after the ACOG Practice Bulletin, respectively). ASPs were identified using CPT codes. Enterocele repair CPT codes were not considered apical suspension but rates were reported. Primary outcome was the use of ASP at the time of hysterectomy for POP. Secondary outcomes included use of ASP by surgeon subspecialty (urogynecology vs general gynecology) and use of minor prolapse repair procedures. Multivariable logistic regression analysis was performed to identify factors associated with performing a hysterectomy without apical suspension.

Results: A total of 11,742 cases of hysterectomy done for POP were identified with 4,518 (38.5%) performed in 2015-2016 and 7,224 (61.5%) performed in 2018-2019. Women in the 2018-2019 cohort compared to the 2015-2016 cohort were slightly older (61.3 ± 11.6 vs 59.1 ± 12.0, $P < 0.001$) and were less likely to smoke (7.3% vs 8.9%, $p < 0.001$). Apical prolapse was the diagnosis in the majority of cases for both cohorts (86.1% vs 85.6%, $P = 0.277$). There was a slight but statistically significant increase in utilization of ASP in 2018-2019 compared to 2015-2016 (51.3% vs 49.4%, $P = 0.049$). Enterocele repairs were done less frequently in 2018-2019 (8.8% vs 10.3%, $P = 0.006$). For the overall cohort, urogynecologists were significantly more likely than general gynecologists to perform ASP (65.4% vs 37.3%, $P = <0.001$). Urogynecologists but not general gynecologists increased utilization of ASP in 2018-2019 after ACOG recommendations (66.6% vs 63.2%, $P = 0.002$; 36.6% vs 38.7%, $P = 0.096$). Use of concomitant anterior repairs and posterior repairs increased in the 2018-2019 cohort (43.7% vs 39.4%; 47.2% vs 41.2%, both $P < 0.001$). On multivariable logistic regression analysis, general gynecologists were more likely to perform a hysterectomy without ASP compared to urogynecologists (OR 2.62, CI 2.41-2.84, $P < 0.001$).

Conclusions: Our results demonstrate only a slight increase in utilization of concomitant ASP at the time of hysterectomy done for prolapse indications despite the 2017 ACOG Practice Bulletin. These findings indicate the need to either improve adherence to the published guidelines or increase coding accuracy if the CPT codes do not reflect actual ASP utilization.

Disclosures: Anna Romanova: None, Yara Sifri: None, Bertille Gaigbe-Togbe: None, Catherine Seaman: None, Anne Hardart: None, Lisa Dabney: None

Short Oral 29
DYNAMIC CHANGES OF THE GENITAL HIATUS AT THE TIME OF PELVIC ORGAN PROLAPSE SURGERY – ONE YEAR FOLLOW-UP STUDY

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Objective: Genital hiatus, as a proxy for Level III support, is a predictor for prolapse recurrence. However, most studies report pre-operative or post-operative genital hiatus, despite that intraoperative genital hiatus is the only surgically modifiable measurement. The primary objective of this study was to describe changes of the genital hiatus after native-tissue pelvic organ prolapse surgery.

Methods: This is a descriptive secondary analysis of a prospective cohort study of women undergoing native-tissue pelvic organ prolapse repair with apical suspension. Pre-operative Pelvic Organ Prolapse-Quantification (POPQ) measurements were obtained. At the time of surgery, resting genital hiatus (GH) and perineal body (PB) measurements were obtained prior to the start of the surgical procedure, and at the end of the surgical procedure. At 6-weeks and 12 months post-operatively, a repeat POPQ was obtained under Valsalva. Comparisons were made using paired t-tests to compare measurements at the following time points: 1) pre-operative measurements under Valsalva to resting pre-surgery measurements under anesthesia, 2) resting post-surgery measurements under anesthesia to 6- week and 12 month- post-op under Valsalva. All data presented as n (%) or median (IQR).

Results: 67 patients were included with a mean age of 64 years and mean BMI of 29.1 kg/m^2. Thirty-six patients underwent uterosacral ligament colpopexy (54%). When comparing pre-operative measurements to resting pre-surgery measurements under anesthesia, there were no significant differences of the GH size (mean difference of -0.06 cm, $P = 0.60$) (Table 1). Perineal body was significantly larger under anesthesia with a mean difference of 0.95 cm, $P < 0.01$. The GH was significantly smaller at 6 weeks post-op compared to the measurements at the conclusion of surgery (mean difference -0.29 cm, $P < 0.01$). At 12 months, the mean difference in GH was 0.28 cm greater compared to the end of surgery ($P = 0.02$). In patients who did not undergo a concurrent posterior colporrhaphy, no significant changes were seen of the GH size post-operatively compared to intraoperative GH.

Conclusions: We found that the GH is dynamic and decreases in size from the conclusion of surgery to the 6-week post-operative visit, and enlarges slightly by 12 months. This effect was seen only in patients with a concurrent posterior colporrhaphy. Pre-operative GH size under Valsalva and resting under anesthesia were comparable. Since surgeons can directly modify the size of the GH at

the time of surgery, the intraoperative GH should be investigated as a proxy for prolapse recurrence.

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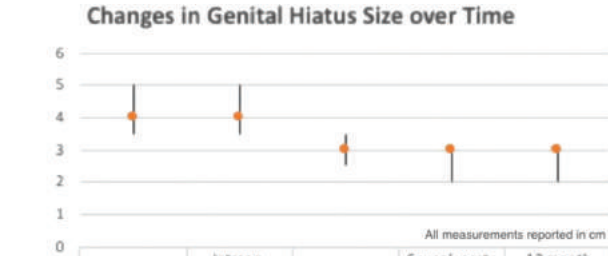


All measurements reported in cm

	Pre-Op	Intraop (beginning)	Intraop (end)	6-week post-op	12 month post-op
25th	3.5	3.5	2.5	2	2
Median	4	4	3	3	3
75th	5	5	3.5	3	3

Disclosures: Olivia Chang: None, Cecile Ferrando: UpToDate: Authorship: Self, Marie Fidela Paraiso: None, Katie Propst: None

Short Oral 30
LONG-TERM OUTCOMES IN SACROCOLPOPEXY WITH SUPRACERVICAL HYSTERECTOMY VERSUS TOTAL HYSTERECTOMY

J. Kikuchi[1], L. Yanek[1], D. Patterson[2]. *Johns Hopkins University School of Medicine[1], Johns Hopkins University[2]*

Objective: The primary aim is to compare reoperation rates for recurrent prolapse and mesh complications in women undergoing sacrocolpopexy (SCP) with supracervical hysterectomy (SCH) versus total hysterectomy (TH). Secondary aims are to 1) compare overall rates of mesh exposure, 2) compare rates of subsequent surgeries related to mesh complications, and 3) for the SCH cohort, evaluate rates of subsequent cervical procedures (biopsy, cautery, colposcopy, cold knife conization, trachelectomy).

Methods: A retrospective cohort study of women undergoing SCP with concomitant hysterectomy was performed using the IBM MarketScan® Research database, which contains de-identified records of privately insured patients in the United States. Women ≥ 18 years who underwent SCP with hysterectomy between 2010 to 2014 were identified using Current Procedural Terminology (CPT) codes. All routes of hysterectomy were included. For prolapse reoperation rates, CPT and ICD-9 codes were utilized to identify patients who underwent prolapse repair surgeries after their SCP. Mesh exposure and erosions were identified using ICD-9 codes, and surgeries related to mesh complications were identified using CPT codes. For the SCH cohort, CPT codes were used to identify patients who underwent subsequent cervical procedures. Incident rates of outcomes were calculated in each cohort, and factors of interest were compared between those with and without the outcome. Sensitivity analyses were performed for anti-incontinence procedures. Follow-up time for outcomes was two years.

Results: There were 910 patients with SCP with SCH and 1243 patients with SCP with TH with at least two years of follow-up. Rates of anterior and/or posterior repair (APR) were significantly higher in the SCH cohort compared to the TH cohort (23.63 versus 19.71, $P < 0.05$). There was no significant difference between the two cohorts for sacrospinous or iliococcygeus ligament suspension, but rates of uterosacral ligament suspension were significantly higher in the SCP with TH cohort (0 versus 0.88, $P < 0.01$). There was no significant difference in overall rates of mesh complications between SCP with SCH and SCP with TH (2.09 versus 1.61, $P = 0.41$). For rates of mesh removal or revision, there were also no significant differences between SCP with SCH and TH (0.77 versus 0.48, $P = 0.40$). For the SCH cohort, the most frequent cervical complication was cervical biopsy at 6%, and the rate of trachelectomy was 0.88%.

Conclusions: When comparing SCP with SCH versus TH, there were significantly more patients undergoing subsequent APR in the SCP with SCH cohort. There was no significant difference in overall rates and surgeries for mesh complications. For the SCH cohort, the overall rates of subsequent cervical interventions were low, with the most common being cervical biopsy at 6%. This study shows that SCP with TH has lower rates of subsequent APR, higher rates of uterosacral ligament suspension, no difference in mesh exposure, and no cervical interventions. Given these results, TH may be preferrable at time of SCP compared to SCH.

Disclosures: Jacqueline Kikuchi: None, Lisa Yanek: None, Danielle Patterson: None

Short Oral 31
GEOGRAPHIC VARIATION OF APICAL SUPPORT PROCEDURES PERFORMED FOR PELVIC ORGAN PROLAPSE

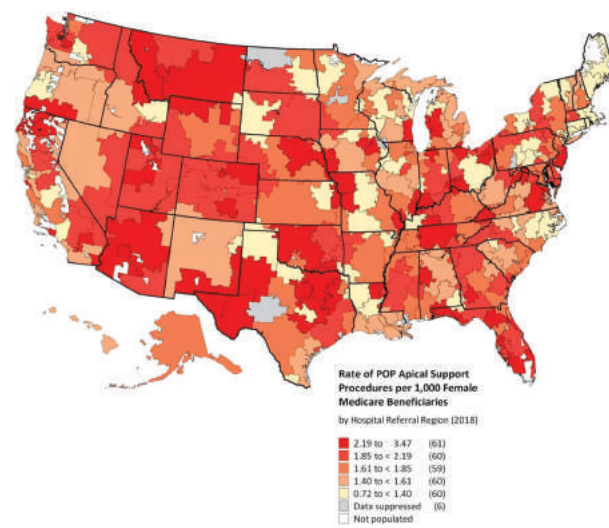
K. Gerjevic[1], K. Strohbehn[1], H. Newton[2], E. Erekson[3], J. Skinner[4]. *Dartmouth-Hitchcock Medical Center[1], Yale School of Public Health[2], Maine Medical Center/Tufts University School of Medicine[3], Dartmouth College[4]*

Objective: Procedural variation, not accounted for by patient characteristics or preferences, has been documented in many surgical procedures including tonsillectomies, hysterectomies, and joint replacements; however, the geographical distribution of apical support procedures (ASP) is unknown. Our primary objective was to measure geographic variation in rates of apical support procedures for the treatment of POP among female Medicare beneficiaries from 2016 to 2018.

Methods: We used 100% Medicare fee-for-service claims to identify a cohort of women 65 years and older who had ASP, defined by CPT codes, in 2016-2018. We included all vaginal and abdominal approaches (native tissue and mesh colpopexies) and obliterative procedures. We excluded procedures that did not have a diagnosis for prolapse and vaginectomies with a diagnosis of gynecologic cancer. We created standardized rates of ASP at the hospital referral region (HRR) level and computed coefficients of variation to measure the degree of geographic variation.

Results: An average of 26,005 procedures were performed annually from 2016-2018. The majority of patients (87.5%) were white, 64.4% were aged 65-74 years old, and 29.3% had a concomitant hysterectomy. From 2016-2018, there was 1.73 ASPs per 1,000 female beneficiaries performed in a given HRR (95%CI 1.69-1.78). HRR estimates range from between 0.83 ASPs per 1,000 female beneficiaries (Alexandria, LA) and 3.27 ASPs per 1,000 female beneficiaries (Akron OH), a nearly four-fold difference in rates. Other regions with high rates greater than two standard deviations of the mean include Austin TX (2.91), Gainesville FL (2.85) and Mesa AZ (3.10). 2018 HRR rates for ASP in the United States are shown in Figure 1. There was greater geographic variation in rates of vaginal and abdominal approaches than among all ASPs (coefficient of variation 0.45 and 0.59 respectively, vs. 0.29).

Conclusions: The wide variation in ASPs raises questions about possible overuse in some regions and concerns about underuse and lack of access in other regions. While some of the differences may be the consequence of differences in health needs, geographic disparities in ASPs are likely to reflect variation in provider training and patient and provider attitudes towards different ASP.



Disclosures: Kristen Gerjevic: None, Kris Strohbehn: Reia, LLC: Grant/Research Support: Self, MedScape eMedicine: Chief Editor, Section on FPMRS: Self , Helen Newton: None, Elisabeth Erekson: None, Jonathan Skinner: None

Short Oral 32

A QUANTITATIVE ANALYSIS OF DIFFERENCES IN VAGINAL SHAPE AND POSITION ON MRI AFTER VAGINAL HYSTERECTOMY WITH UTEROSACRAL LIGAMENT SUSPENSION VS TRANSVAGINAL MESH HYSTEROPEXY

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Objective: To define differences in vaginal shape and position on MRI following vaginal hysterectomy with uterosacral ligament suspension (native tissue repair [NTR]) vs transvaginal mesh hysteropexy (VM).

Methods: This ancillary analysis of a prospective study in which pelvic MRIs of 83 women treated for uterine prolapse (42 NTR, 41 VM) were obtained at 30-42-months post-surgery. The vagina was segmented from MRI to generate 3D models. Using these models, the following measures were calculated in relation to a 3D pelvic coordinate system at rest for the primary outcome: position of the vagina (centroid) and apex, vaginal angle, and vaginal length and width. Pre- and post-operative POP-Q measures were also collected to evaluate postsurgical changes in vaginal anatomy. Vaginal measures were compared by repair and surgical failure was defined as prolapse beyond the hymen on MRI with strain. Independent and paired t-tests assessed between- and within-group differences, respectively.

Results: Demographics were similar in both the repair and surgical outcome groups. Of the 83 subjects analyzed, 22 NTR and 12 VM were failures. Regardless of surgical outcome, NTR had a more anteriorly oriented apex ($P = 0.007$) and upper vaginal angle (46° vs 40°, $P = 0.008$), smaller width (47 mm vs 50 mm, $P = 0.03$), and shorter length (65 mm vs 70 mm, $P = 0.046$) than VM (Fig 1). The failure group had a more inferiorly positioned apex ($P = 0.03$) and vagina ($P = 0.04$), and shorter vaginal length (63 mm vs 70 mm, $P = 0.01$) than successes. Within failures, NTR had a smaller vaginal width vs VM (45 mm vs 51 mm, $P = 0.03$). While POP-Q measures of vaginal support improved with repair (Table 1), vaginal shortening (shorter TVL) was observed in NTR vs VM (7.7 cm vs 8.5 cm, $P = 0.002$). Worse anterior support (Ba) was seen in NTR ($P = 0.026$) and failures ($P = 0.005$); worse apical support (C) and wider GH were noted in failures ($P = 0.018$, $P = 0.018$).

Conclusions: Postoperatively, the vagina was narrower and shorter, and the upper vagina was more anterior, in NTR vs VM regardless of surgical outcome. With failure, the vagina was more inferior and shorter. The appearance of vaginal shortening on MRI and wider GH after surgery may be related to recurrence.

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Short Oral 33

QUANTIFICATION OF SENESCENCE-ASSOCIATED SECRETORY PHENOTYPE (SASP) PROTEINS IN THE VAGINAL SECRETIONS OF PRE- AND POST-MENOPAUSAL WOMEN WITH AND WITHOUT PROLAPSE

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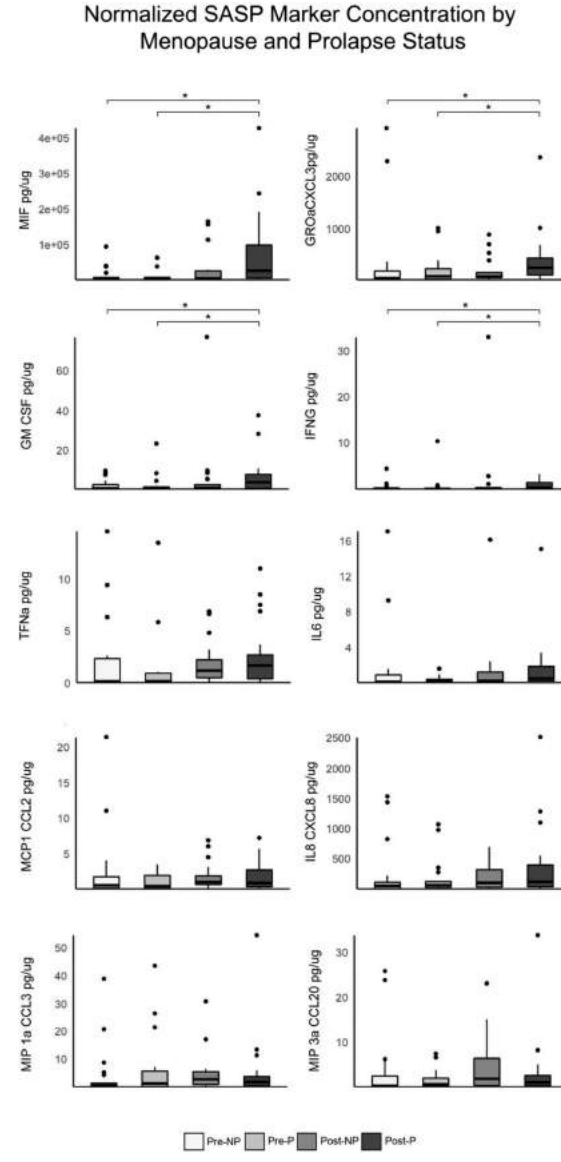
Objective: We have proposed that senescent cells of the pelvic floor contribute to the pathophysiology of pelvic organ prolapse, especially during aging. Here, we determined if markers of cell senescence can be quantified in vaginal secretions and if senescence-associated secretory phenotype (SASP) proteins are differentially expressed in pre- and post-menopausal women with and without prolapse.

Methods: Vaginal swabs were collected from 81 women in 4 groups: Premenopausal with (Pre-P, n = 17) and without prolapse (Pre-NP, n = 22) and postmenopausal with (Post-P, n = 24) and without (Post-NP, n = 18) prolapse. Exclusion criteria included abnormal vaginal discharge or prior mesh procedure. Multiplex Immunoassays were used to detect and quantify ten SASP proteins, which were normalized to total protein concentration. Kruskal-Wallis or one way analysis of variance was used to compare results among the four groups.

Results: As expected, age differed between pre- and postmenopausal cohorts (38.9 ± 6.8 vs 70.2 ± 13.4) and between women with and without prolapse (45.8 ± 4.8 vs 69.5 ± 8.2). Vaginal births were highest in the Pre-P group, 3 [2,4 IQR] and were lowest in Pre-NP, 1 [0,3 IQR]. Women in the Pre-P were more likely to be Hispanic ($P = 0.0325$). BMI, prior cesarean, and prior hysterectomy were not statistically different between the four groups. Total protein concentrations differed significantly among groups with highest mean concentrations in Pre-P (22.7 ± 21.8 μg/μl) and lowest mean concentrations in Post-P (5.4 ± 4.4 μg/μl) ($P = 0.0032$). Several SASP markers differed significantly among groups. Specifically, the post-P group had increased concentrations of IFNG 0.3 pg/μg ([0,1.31 IQR] $P = 0.0008$), GMCSF 3.37 pg/μg ([0, 7.07 IQR] $P = 0.0029$), MIF 25,244 pg/μg ([0, 93307 IQR] $P = 0.0015$), and GROaCXCL3 232 pg/μg ([0, 330 IQR] p 0.0311). Post-hoc pairwise comparisons showed that this difference was greatest between the Pre-NP and Post-P cohorts.

Conclusions: SASP proteins are detectable in vaginal secretions from pre- and postmenopausal women. Since SASP proteins are cell-type specific, it is not surprising that some, but not all, markers were differentially expressed in vaginal secretions, with the most significant increases in postmenopausal women with prolapse. Although possible, these increases are not likely to be a consequence of prolapse alone, since premenopausal women with prolapse did not show similar increases in SASP protein concentrations. Overall, the data support the theory that senescence is associated with prolapse during aging but that other factors may be important in younger women before menopause.



Disclosures: Polina Sawyer: None, Larry Brown: None, Maria Florian-Rodriguez: None, Haolin Shi: None, Patrick Keller: None

Short Oral 34
INCREASED MESH STIFFNESS LEADS TO STRESS SHIELDING AND VAGINAL DEGENERATION IN VIVO

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Objective: Stress shielding occurs when stress mismatches between a device and the underlying tissue lead to a maladaptive remodeling response characterized by degradation and atrophy. We hypothesized that stress shielding is the mechanism underlying mesh exposure - a process induced by increasing mesh stiffness.

Methods: After laparotomy, 38 rhesus macaques underwent a total hysterectomy and complete transection of level I and II vaginal support (IACUC 16088646). A square-pored polypropylene mesh (3 cm x 12 cm) was implanted in 30 animals by sacrocolpopexy with 3 predefined geometries resulting in progressively increased stiffness: **stable**(square pore, open n = 10), **unstable**(diamond pore, collapsed n = 10), and **predeformed**(pores collapsed, mesh wrinkled, n = 10). The mesh bridge to the sacrum was placed at high tension (10 N). **Sham** operated animals served as controls (N = 8). At 12 weeks, mesh-vagina complexes (MVCs) were excised *en bloc* and analyzed for apoptosis (TUNEL), collagen (hydroxyproline), glycosaminoglycans (GAG, Blyscan assay), pro- and active metalloproteinases -9 (ELISA), mature elastin (UPLC), and MVC stiffness (ball-burst testing). *Ex vivo* ball-burst testing quantified mesh stiffness in the 3 geometries. One-way ANOVA, the Welch Alternative for the F-ratio, and Kruskal-Wallis tests were used for statistical analysis with the appropriate post-hoc testing.

Results: Animals were middle aged with similar weight, gravidity and parity. *Ex vivo* tests confirmed highest to lowest stiffness geometries: predeformed (54 N/mm), unstable (13 N/mm) and stable (12.0 N/mm), p = 0.001. Mesh exposures, vaginal flattening (loss of rugae), and pronounced thinning were observed in areas of pore collapse and mesh wrinkling and were most common in the highest stiffness predeformed group. Contribution of the vagina to overall stiffness of the MVC was decreased for all geometries with the greatest decrease observed in the predeformed group (p < 0.001). The vagina accounted for only 22% of the predeformed MVC stiffness, 75% and 81% of the unstable and stable groups, respectively. Compared to Sham, implantation with predeformed mesh caused increased apoptosis in the muscularis (p = 0.009), decreased collagen content (p = 0.003), increased active MMP-9 (p = 0.014), and increased ratio of active to proenzyme form MMP-9 (p = 0.013). No significant differences were found in GAG or elastin content (Table 1).

Conclusions: Increasing the stiffness of a polypropylene mesh by introducing collapsed pores and wrinkles induced a maladaptive remodeling response with vaginal thinning, a loss of rugae, accelerated apoptosis, decreased collagen, and increased proteolysis, resulting in a deterioration of mechanical integrity consistent with stress shielding.

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Disclosures: Katrina Knight: None, Rui Liang: None, Gabrielle King: None, Stacy Palcsey: None, Steven Abramowitch: None, Pamela Moalli: None

Short Oral 35
IS MINIMALLY INVASIVE SACROCOLPOPEXY AN OUTPATIENT SURGERY? A REVIEW OF NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE FROM 2015 TO 2019.

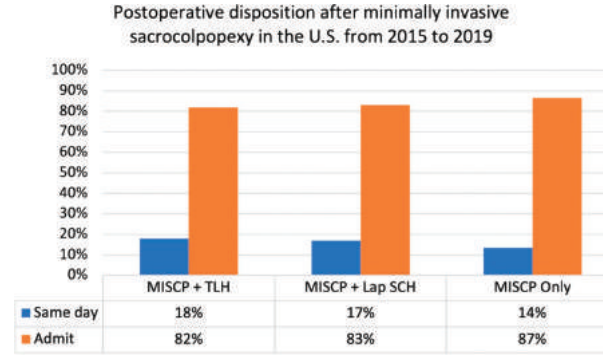
Edward Kim[1], Christopher Hong[1], Heidi Harvie[2]. *University of Pennsylvania[1], Perelman School of Medicine/University of Pennsylvania[2]*

Objective: The primary aim of this study was to review postoperative disposition after a minimally invasive sacrocolpopexy (MISCP). Secondary aim was to compare the pre-operative characteristics and post-operative complications between patients who undergo MISCP and are discharged the same day vs stayed for at least one night (i.e. admitted).

Methods: This was a retrospective cohort study using the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database for the years 2015 to 2019. Patients who underwent MISCP were identified by Current Procedural Terminology (CPT) codes and divided into those who had 1) MISCP only, 2) MISCP with total laparoscopic hysterectomy (TLH) and 3) MISCP with laparoscopic supracervical hysterectomy (SCH). Pre-operative characteristics [age, smoking, chronic obstructive pulmonary disease, diabetes, coagulopathy, hypertension, anemia, obesity, and American Society of Anesthesia class] and post-operative complications [surgical site infection, urinary tract infection (UTI), deep vein thrombosis, pulmonary embolism, blood transfusion, myocardial infarction, cardiac arrest] were identified. Multivariate logistic regression and propensity score matching were used to control for confounding factors.

Results: A total of 12,744 MISCP were captured from 2015 to 2019; 3,967 (31%) MISCP only, 4,804 (38%) MISCP-TLH, and 3,973 (31%) MISCP-SCH. Discharge day was similar for all groups: only about 15% were discharged the day of surgery. Propensity matched comparison showed that age > 65, obesity, smoking, COPD, and ASA class 3 or 4 were associated with admission. For post-operative complications, only UTI was associated with admission.

Conclusions: Our findings suggest that nationally only a small proportion of patients who undergo MISCP are discharged the same day. It is possible that patients who are older, obese, have pulmonary risk factors, and high ASA class were planned for admission. UTI is likely a post-operative complication of being admitted; no other postoperative complications were associated with admission. Same-day discharge for otherwise healthy patients undergoing MISCP may be reasonable.



	Odds ratio	P value	95% CI
Propensity matched comparison of pre-op characteristics			
Age (>65 age)	0.433	0.001	0.371-0.506
Obesity (BMI>30),	5.35	0.001	4.69-6.12
Diabetes requiring medication	0.836	0.135	0.66-1.06
Hypertension requiring medication	0.944	0.395	0.826-1.08
Smoking	3.68	0.001	3.06-4.43
Chronic obstructive pulmonary disease	3.67	0.001	2.302-5.85
Anemia (hematocrit<33)	1.12	0.159	0.955-1.322
Coagulopathy	1.89	0.122	0.84-4.26
American Society of Anesthesia (ASA) Class 3+	0.77	0.003	0.648-0.915
Propensity matched comparison of post-op complications			
Urinary tract infection	1.93	0.001	1.41-2.66
Superficial surgical site infection	1.24	0.42	0.73-2.11
Deep surgical site infection	Does not predict	NA	NA
Organ surgical site infection	2.005	0.205	0.68-5.87
Deep vein thrombosis	Does not predict	NA	NA
Pulmonary embolism	1.0	1.0	0.062-15.99
Myocardial infarction	Does not predict	NA	NA
Card arrest	Does not predict	NA	NA

Disclosures: Edward Kim: None, Christopher Hong: Cosm Medical: Consultant: Self , Heidi Harvie: None

Short Oral 36
URINARY OUTCOMES THROUGH 5 YEARS AFTER TRANSVAGINAL UTERINE PROLAPSE REPAIR WITH AND WITHOUT CONCOMITANT MIDURETHRAL SLINGS

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Objective: To compare urinary outcomes after transvaginal uterine prolapse repair with and without midurethral sling (MUS). We hypothesized that, after controlling for baseline stress urinary incontinence (SUI) bother, postoperative urinary outcomes would not differ between MUS groups.

Methods: This secondary analysis of the SUPeR trial [hysterectomy uterosacral ligament suspension (TVH USLS) vs. mesh hysteropexy] grouped participants by concomitant MUS (MUS vs No MUS). Primary outcome was postoperative urinary distress inventory (UDI) compared between MUS groups within

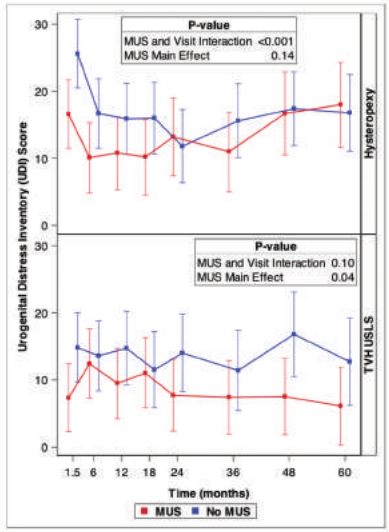
prolapse repair arms. Secondary outcomes were stress and urge specific bother and SUI treatment. MUS effect was adjusted for POPQ stage ≥3, postvoid residual, bothersome SUI, age and BMI in longitudinal models for repeated outcomes through 5 years. Interaction terms assessed the MUS effect within each prolapse repair arm ($\alpha = 0.05$).

Results: Analyses included 90 women in the MUS group (43 hysteropexy, 47 TVH USLS) and 93 women in the No MUS group (48 hysteropexy, 45 TVH USLS). At baseline, the MUS group had fewer participants with POPQ stage ≥3 (73% vs 86%, $P = 0.04$), and more with bothersome SUI (66% vs 36%, $P < 0.001$) and urgency urinary incontinence (69% vs 48%, $P = 0.007$). Median UDI scores were greater in the MUS group overall [47.9 (25.0,66.7) vs 33.3 (16.7,50.0), $P = 0.004$] and by repair [hysteropexy: 58.3 (33.3,70.8) vs 35.4 (14.6, 56.3); TVH USLS: 37.5 (16.8,66.8) vs 33.3 (16.8,45.8)]. Outcomes varied by type of prolapse repair. For hysteropexy, women with MUS had lower (improved) UDI scores only at 6 weeks [adjusted mean difference (AMD) -9.0 (95% CI -16.0 to -1.9)], with no differences at other timepoints (Figure 1). An initial higher proportion with bothersome SUI in the No MUS group did not persist after 12 months. MUS groups did not differ in bothersome urge leakage. For TVH USLS, women with MUS had lower (improved) UDI scores averaged across all timepoints [AMD -5.1 (-9.9 to -0.2), $P = 0.04$]. Both bothersome stress and urge leakage were less common in the MUS group [stress adjusted odds ratio (AOR) 0.1 (0.0 to 0.4), $P < 0.001$; urge AOR 0.5 (0.2 to 1.0), $P = 0.04$]. Treatment for SUI over 5 years did not differ between MUS groups overall [MUS 7.8% (n = 7) vs No MUS 7.5% (n = 7), $P = 0.72$] or by procedure type [mesh hysteropexy: MUS 11.6% (n = 5) vs No MUS 8.3% (n = 4); TVH USLS: MUS 4.3% (n = 2) vs No MUS 6.7% (n = 3)].

Conclusions: 5-year urinary outcomes of concomitant MUS with transvaginal uterine prolapse repair varied by procedure type, with benefits noted in the TVH USLS group but not after mesh hysteropexy. The clinical significance of improved UDI scores after MUS with TVH USLS warrants further investigation, given that postoperative SUI treatments were uncommon regardless of MUS or prolapse repair group.

Disclosures: Lauren Giugale: None, Amaanti Sridhar: None, Marie Gantz: None, Kimberly Ferrante: Valencia Technologies: Grant/Research Support: Self, BlueWind Medical: Grant/Research Support: Self , Yuko Komesu: None, Donna Mazloomdoost: None, Isuzu Meyer: None, Deborah Myers: None, Marie Fidela Paraiso: None, Ariana Smith: None, Anthony Visco: NinoMed: Major Stock Shareholder: Self , Halina Zyczynski: None

Figure 1. Urogenital Distress Inventory (UDI) Score Adjusted Means and 95% Confidence Intervals by Apical Pelvic Organ Prolapse Repair and Concomitant Midurethral Sling (MUS) [a]



[a] Adjusted means, 95% confidence intervals, and p-values comparing the continuous outcome by concomitant midurethral sling (MUS) across post-operative visits through 60 months are obtained from general linear models controlling for within-participant correlations across visits with an auto-regressive order 1 structure and adjusted for MUS, visit, apical pelvic organ prolapse repair, three way interaction between MUS, apical pelvic organ prolapse repair, and visit as well as all the pairwise interaction terms, and the following pre-operative characteristics to account for the imbalance in these potential risk factors when evaluating the effect of the non-randomized MUS on the outcome: age, body mass index, advanced POP-Q stage (≥ 3) [b], postvoid residual, and bothersome stress urine leakage [c]. The p-value corresponding to the interaction is obtained from the type 3 partial sums of squares hypothesis test on the fitted model and the p-values for the MUS and visit interaction by apical pelvic organ prolapse repair are obtained by performing a partitioned analysis of the LS-means for the interaction. The p-values corresponding to the MUS main effect by apical pelvic organ prolapse repair are obtained by performing a partitioned analysis of the LS-means for the interaction between MUS and apical pelvic organ prolapse repair.

[b] Pelvic Organ Prolapse Quantification (POPQ) Stages: Stage 2-The vagina is prolapsed between 1 cm above the hymen and 1 cm below the hymen; Stage 3-The vagina is prolapsed more than 1 cm beyond the hymen but is not everted within 2 cm of its length; Stage 4-The vagina is everted to within 2 cm of its length.

[c] Bothersome stress urine leakage is defined as a positive response to PFDI-20 item 17 'Do you usually experience urine leakage related to coughing, sneezing, or laughing?' and a degree of bother of 'Somewhat', 'Moderately', or 'Quite a bit' to the follow-up question 'If yes, how much does it bother you?'.

Short Oral 37
SACROSPINOUS LIGAMENT FIXATION USING AN ANCHOR VERSUS SUTURE-CAPTURING DEVICE: A PROSPECTIVE COHORT STUDY

C. McKenzie[1], C. Crafton[2], A. Plair[3], C. Matthews[1]. *Wake Forest Baptist Health[1], Wake Forest Baptist Health Department of Urology[2], Stony Brook University Hospital[3]*

Objective: To conduct a secondary analysis of women who underwent a randomized trial of an anchor-based versus suture-capturing device for sacrospinous ligament fixation (SSLF) at 1 year post-procedure. Our objectives were to compare rates of persistent gluteal and posterior thigh pain, surgical failure, and post-operative complications.

Methods: Patients who enrolled in a single-center, randomized trial comparing postoperative pain following native-tissue SSLF with an anchor-based versus suture-capturing device were invited to participate in a 1 year post-operation analysis. Women who declined an in-person visit completed the Pelvic Floor Distress Inventory-20 (PFDI-20) questionnaire, Pelvic Floor Impact Questionnaire-7 (PFIQ-7), and a Numerical Rating Scale to assess pain in the posterior thigh and buttock by phone. Women who agreed to an in-person visit also underwent a POP-Q examination by a blinded examiner. Composite surgical failure was defined as recurrent apical prolapse >1/2 vaginal length, any prolapse beyond the hymen, reoperation or pessary management for recurrent prolapse, or answering "Yes" to the question "Do you usually have a bulge or something falling out that you can see or feel in your vaginal area?" on the PFDI-20. Postoperative complications were evaluated by review of the electronic medical record and direct patient query regarding any interim adverse events. Bivariate analysis with Mann-Whitney U and Chi-Square/Fisher's exact tests using SPSS software were performed. A P-value <0.05 was considered significant.

Results: Between October 2018 and August 2020, a total of 47 women underwent surgery (23 in suture v. 24 in anchor groups). By 4/1/2021, 41 were eligible for inclusion and 36 (18 in suture v. 18 in anchor) had returned for follow-up (6 questionnaire only; 30 questionnaire and POP-Q). The mean length of follow up was 15.2 months (± 4.2 months). Overall, the mean age was 68 years old, BMI 30.6, and stage of preoperative prolapse (POPQ) was 2.7. At 1 year, only one patient (suture group) reported significant pain above baseline values. There was no significant difference between the anchor and suture groups in pain at the side of fixation at 1 year compared to baseline (mean: anchor -0.24 ± 0.97, suture -0.47 ± 1.43, $P = 0.71$). Composite surgical failure was seen in two patients in the anchor group due to bulge symptoms compared to none in the suture group ($P = 0.27$). There were no failures based on POP-Q or retreatment. Mean C and TVL points were -7.62 (anchor -7.57 ± 1.29 v. suture -7.67 ± 1.28) and 8.7 (anchor 8.67 ± 0.88; suture 8.73 ± 0.98), $P = 0.9$ and 0.88, respectively. The devices similarly improved PFDI-20 (mean: anchor -65.8 ± 40.1 v. suture -67.2 ± 64.3, $P = 0.83$) and PFIQ-7 (mean: -30.5 ± 57.8 v. -32.3 ± 64.0, $P = 0.33$) scores at 1 year compared to baseline. Postoperative complications included 1 patient in the suture group with recurrent UTIs and one patient in each group developing urge urinary incontinence.

Conclusions: Persistent buttock pain and surgical failure are rare 12 months post-sacrospinous fixation and were not associated with type of fixation device.

Disclosures: Collin McKenzie: None, Christopher Crafton: None, Andre Plair: Neomedic: Grant/Research Support: Self , Catherine Matthews: None

Short Oral 38
EFFICACY AND SAFETY OF VIBEGRON FOR THE TREATMENT OF OVERACTIVE BLADDER IN WOMEN: A SUBGROUP ANALYSIS FROM THE EMPOWUR TRIAL

D. Newman[1], S. Varano[2], D. Shortino[3], R. Jankowich, MSN[3], P. Mudd[4]. *Perelman School of Medicine, University of Pennsylvania[1], Clinical Research Consulting[2], Urovant Sciences[3], Urovant[4]*

Objective: Overactive bladder (OAB) prevalence increases with age in women and men; however, women may be disproportionately affected by symptoms such as urge urinary incontinence (UUI). In the 12-week phase 3 EMPOWUR trial, vibegron was shown to be safe and efficacious in adults with OAB. These subgroup analyses of the EMPOWUR trial assessed the efficacy (prespecified) and safety (post hoc) of vibegron in treating women with OAB.

Methods: In EMPOWUR, patients were randomly assigned 5:5:4 to once-daily vibegron 75 mg, placebo, or tolterodine 4 mg ER, respectively. Efficacy endpoints were change from baseline at week 12 in mean daily number of micturitions and UUI episodes (co-primary) and urgency episodes (key secondary). Safety was assessed through adverse events (AEs), clinical laboratory assessments, and postvoid residual (PVR) urine volume.

Results: Of the 1515 patients included in the safety set, 1286 (84.9%) were women (vibegron, N = 463; placebo, N = 459; tolterodine, N = 364). Mean age was 59.5 years; 78.9% were white; and 18.7% were of child-bearing potential. Among women, vibegron was associated with statistically significantly greater reductions (95% CI does not include 0) from baseline at week 12 vs placebo in average daily number of micturitions (least squares mean, –1.9 vs –1.4, respectively), UUI episodes (–2.1 vs –1.4), and urgency episodes (–2.8 vs –1.9; **Table 1**). Incidence of treatment-emergent AEs (TEAEs) was 39.3% with vibegron, 34.9% with placebo, and 39.6% with tolterodine; 1.5%, 1.1%, and 3.8% of women, respectively, discontinued due to TEAEs (**Table 2**). Treatment-related TEAEs were reported by 13.4%, 11.1%, and 15.7% of women receiving vibegron, placebo, and tolterodine, respectively. The most common TEAE with vibegron reported at a higher rate than placebo was headache (**Table 2**). No clinically meaningful changes were seen in clinical laboratory parameters or in PVR urine volume.

Conclusions: In women with OAB, once-daily vibegron was associated with significant reductions in key efficacy endpoints and a slightly higher rate of certain AEs vs placebo, consistent with results from EMPOWUR. Results suggest that vibegron is safe and efficacious in treating women with OAB.

Table 1. Mean Change from Baseline at Week 12 in Co-Primary and Key Secondary Endpoints in Women (Full Analysis Set*)

Outcome†	Placebo (N=445)	Vibegron (N=449)	Tolterodine (N=352)
Micturitions			
LS mean (95% CI)	−1.4 (−1.7 to −1.1)	−1.9 (−2.2 to −1.6)	−1.7 (−2.0 to −1.5)
LS mean difference (95% CI)‡	–	−0.5 (−0.8 to −0.2)	−0.3 (−0.7 to 0.0)
UUI episodes§			
LS mean (95% CI)	−1.4 (−1.6 to −1.2)	−2.1 (−2.3 to −1.8)	−1.8 (−2.0 to −1.5)
LS mean difference (95% CI)‡	–	−0.7 (−1.0 to −0.4)	−0.4 (−0.7 to −0.1)
Urgency episodes			
LS mean (95% CI)	−1.9 (−2.3 to −1.6)	−2.8 (−3.1 to −2.4)	−2.5 (−2.9 to −2.0)
LS mean difference (95% CI)‡	–	−0.8 (−1.3 to −0.4)	−0.5 (−1.0 to 0.0)

LS, least squares.

*All randomized women who took ≥1 dose of double-blind study treatment and have ≥1 evaluable change from baseline micturition measurement.

†Covariates included in the mixed model for repeated measures are study visit, OAB type (full analysis set only), sex, region, baseline efficacy by outcome, and interaction of visit by treatment.

‡Active – placebo.

§Full analysis set for incontinence: placebo, N=364; vibegron, N=361; tolterodine, N=284.

Table 2. Summary of Safety in Women (Safety Set*)

AE, n (%)	Placebo (N=459)	Vibegron (N=463)	Tolterodine (N=364)
≥1 TEAE	160 (34.9)	182 (39.3)	144 (39.6)
≥1 treatment-related TEAE	51 (11.1)	62 (13.4)	57 (15.7)
≥1 TEAE leading to discontinuation	5 (1.1)	7 (1.5)	14 (3.8)
≥1 serious TEAE	4 (0.9)	6 (1.3)	8 (2.2)
Resulting in death	0	0	1 (0.3)†
≥1 treatment-related serious TEAE	0	1 (0.2)‡	0
TEAEs occurring in ≥1% of women in the vibegron group and more than placebo			
Headache	12 (2.6)	20 (4.3)	10 (2.7)
Nasopharyngitis	9 (2.0)	15 (3.2)	9 (2.5)
Nausea	5 (1.1)	11 (2.4)	5 (1.4)
Diarrhea	6 (1.3)	9 (1.9)	9 (2.5)
Hypertension	8 (1.7)	9 (1.9)	10 (2.7)
Constipation	6 (1.3)	8 (1.7)	5 (1.4)
Dry mouth	4 (0.9)	8 (1.7)	24 (6.6)
Upper respiratory tract infection	4 (0.9)	8 (1.7)	2 (0.5)
Dizziness	4 (0.9)	5 (1.1)	3 (0.8)

AE, adverse event; TEAE, treatment-emergent AE.

*All randomized women who took ≥1 dose of double-blind study treatment.

†Patient reported AEs of urinary tract infection, sepsis, and cerebrovascular accident around the time of death; no AE was considered related to study treatment by the investigator.

‡Non-cardiac chest pain, which resolved and was considered not related to study drug by the sponsor.

Disclosures: Diane Newman: Urovant Sciences: Speakers' Bureau: Self , Susann Varano: urovant: promotional speaking: Self , Denise Shortino: Urovant: employee: Self , Rachael Jankowich MSN: None, Paul Mudd: None

Short Oral 39
INITIAL MAPPING OF CANNABINOID RECEPTOR DISTRIBUTION IN THE HUMAN VAGINA

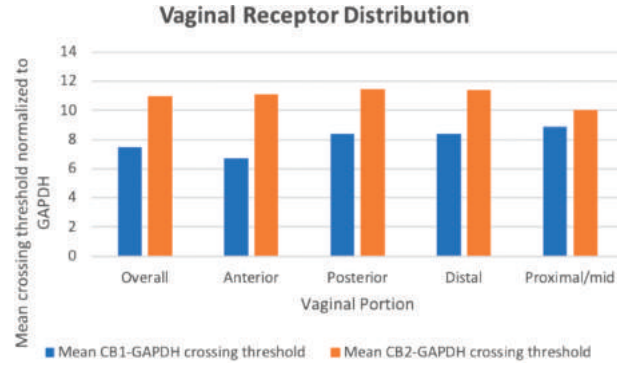
T. Crouss[1], S. Spector[2], L. Lipetskaia[3], M. Schroeder[4], G. Carrasco[5], K. Hunter[2], M. DiSanto[6]. *Cooper University Healthcare[1], Cooper University Hospital[2], Cooper Health University[3], UNC Health[4], Cooper Medical School,[5] Cooper Medical School of Rowan University[6]*

Objective: While numerous studies have attempted to find pharmacological treatments for female chronic pelvic pain and sexual dysfunction, novel research points to the potential role of the endogenous cannabinoid system in these pathologies. The objective of this study was to map the cannabinoid 1 and 2 (CB1 and CB2) receptor distribution throughout the human vagina using comparative real-time polymerase chain reaction (RT-PCR).

Methods: Full-thickness vaginal tissue previously obtained from patients undergoing prolapse surgery was categorized into anterior and posterior walls, and distal, mid or proximal portions. Ribonucleic acid (RNA) was isolated from the previously frozen vagina sections and RT-PCR was performed in order to calculate the relative fold gene expression of CB1 or CB2 receptors while using glyceraldehyde-3-phosphate dehydrogenase (GAPDH) as the control housekeeping gene.

Results: Twenty-two vaginal samples from 7 individual patients were analyzed. The average age of patient at the time of surgery was 66 years old, all were parous and Caucasian race, and no patients had connective tissue disorders. Most patients (5/7) had anterior predominant prolapse. The overall average expression of cannabinoid receptors, normalized to GAPDH, was 7.8 for CB1 and 11.3 for CB2 receptors (see Figure). On average, the expression of CB1 receptors in anterior vagina was 3.25 fold greater than in the posterior vagina, and the expression of CB2 receptors in the distal vaginal was 2.64 fold greater than in the proximal/mid vagina, although these differences failed to meet statistical significance ($P = 0.115$ and 0.776, respectively).

Conclusions: Comparative RT-PCR suggests the novel finding of CB1 and CB2 receptor expression throughout different regions of the human vagina. While not statistically significant, there were two trends: the anterior vagina having a higher CB1 receptor concentration than the posterior vagina, and the distal vagina having a higher CB2 receptor concentration than the proximal/mid vagina. Compared to CB2 receptors, CB1 receptors appeared at lower crossing thresholds in all areas of the vagina, suggesting a higher expression of CB1 receptors in the human vagina. Results of this study highlight the potential use of cannabinoids for chronic pelvic pain and sexual dysfunction, indications that currently do not have many viable treatment options.



Disclosures: Tess Crouss: None, Sean Spector: None, Lioudmila Lipetskaia: None, Michelle Schroeder: None, Gonzalo Carrasco: None, Krystal Hunter: None, Michael DiSanto: None

Short Oral 40
CLITORAL BODY AND BULBS OF THE VESTIBULE: ANATOMIC RELATIONSHIPS IN FEMALE CADAVERS

E. Tappy[1], K. Carrick[1], P. Sawyer[1], M. Corton[1]. *University of Texas Southwestern Medical Center[1]*

Objective: To further characterize the gross and histologic relationships of the clitoris, vestibular bulbs, and urethra and to examine the path of the clitoral body.

Methods: Detailed dissections were performed in unembalmed female cadavers and the relationships of the clitoris, vestibular bulbs, and urethra were annotated. Histologic evaluation was performed on tissue harvested within 24 hours from death. Descriptive statistics were used for data analyses.

Results: A total of 18 cadavers (aged 29-96 years) were examined, 16 grossly and 2 histologically. In all specimens, the clitoral body (CB) was formed by the junction of the bilateral crura over the lower half of the mid pubic symphysis (Figure, A&B). The CB consisted of a proximal part, which was firmly attached to the pubic symphysis, and a distal part that was covered anteriorly and laterally by the prepuce of the clitoris. The distal body (DB) was oriented approximately 90 degrees from the proximal body (PB). The DB coursed inferoposteriorly and was capped distally by the glans of clitoris. The inflection point from the PB to the DB mimicked that of a flexed elbow, with an outer and an inner angle. The median length from the outer angle to the prepuce-glans interface was 1.9 cm (range, 1.0-2.9 cm).

The vestibular bulbs (VB) were firmly adherent to the caudal surface of the perineal membrane, and lay just lateral and deep to the base of labia minora

(Figure, C&D). They surrounded the vaginal vestibule ventrolaterally and approached each other over the ventral surface of the distal urethra, at the commissure of the VB. This ventral connection approximated the clitoral body; however, both gross and histologic evaluation showed that the erectile tissue of the VB was separated from the corpora cavernosa of the CB by the tunica albuginea (Figure, D). The erectile tissue of the VB abutted the ventrolateral walls of distal urethra with no distinct border separating the two structures. At the levels examined, the right and left VB merged centrally, without any distinct connective tissue septum separating right from left bulb.

A "septum-like" arrangement of fibroconnective and vascular tissue was noted in the midline, between the inner angle of the CB and ventral part of the distal urethra (Figure, D). The median distance from the inner angle of the CB to the external urethral opening was 2.5 (1.5-3.9) cm. Multiple rows of veins coursed on the lateral surfaces of the CB, and superficial surfaces of the crura and VB (Figure, C), and were continuous with the vesical venous plexus in the paravaginal tissue. Microscopically, the most prominent veins identified were those lying between the CB and the urethra; these veins had a longitudinal axis paralleling the midline fibroconnective tissue.

Conclusions: This study provides gross and histological confirmation of the relationships of clitoris, vestibular bulbs and urethra. Detailed knowledge of this anatomy is critical for reducing surgical complications associated with peri-clitoral and urethral procedures, which may adversely impact sexual arousal and sexual function.

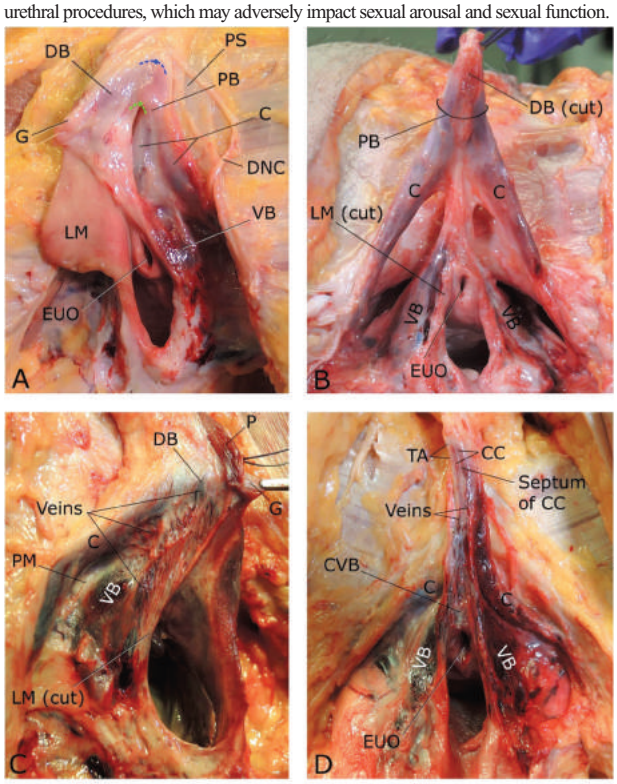


Figure. Relashionships of vestibular bulbs, clitoris and urethra.
C=crus of clitoris; CVB=commissure of vestibular bulbs; DB=distal body of clitoris; dashed blue line=outer angle; dashed green line=inner angle; DCN=dorsal nerve of clitoris; EUO=external urethral opening; G=glans of clitoris; LM=labia minora; P=prepuce; PB=proximal body of clitoris; PM=perineal membrane; PS=pubic symphysis; TA=tunica albuginea; VB=vestibular bulb

Disclosures: Erryn Tappy: None, Kelley Carrick: None, Polina Sawyer: None, Marlene Corton: None

Short Oral 41
URETHRAL SHAPE AND PRESSURE CHANGES DURING COUGH, SQUEEZE, AND VALSALVA IN YOUNG, NULLIGRAVID WOMEN

M. Routzong[1], L. Martin[1], S. Abramowitch[1], G. Rostaminia[2]. *University of Pittsburgh[1], NorthShore University HealthSystem/ University of Chicago[2]*

Objective: To accurately define abnormal urethral shape and pressures when evaluating women for incontinence, baseline values representing young, nulligravid women must first be defined. We aimed to explain the effect of voluntary squeeze (active urethral closure) and strain (passive urethral closure) on urethral shapes and pressures in young, nulligravid, asymptomatic volunteers.

Methods: In this prospective cohort study, volunteers underwent an interview, physical exam, dynamic pelvic floor ultrasound, and a modified short urodynamic study. All ultrasound studies were performed in the office setting using BK Medical 3000 (Peabody, MA) and X14L4 12 MHz transducers. Patients were in the dorsal lithotomy position with hips flexed and abducted. Dynamic ultrasound videos started at rest and recorded 5 seconds of each maneuver consecutively (squeeze, Valsalva, then cough) for image analysis. Urethral length, thicknesses, and proximal, middle, and distal (urethral knee) urethral angles relative to the pubic symphysis were measured at rest, squeeze, and strain. For all urodynamic studies, a urinary and vaginal catheter were inserted, and the bladder was filled to 400 ml. Then subjects performed a squeeze 2 times, strain, and cough 2 times while the intra-abdominal pressure, intravesical pressure, and the urethral pressure were measured. Maximum urethral closure pressure testing was performed. Means and standard deviations of imaging and urodynamic measures were calculated.

Results: Complete data from 18 subjects (mean age = 31 years) were analyzed. On average, urethral length increased, thicknesses decreased, and urethral pressure increased by ~30 cmH2O during squeeze (Table 1, Figure 1). The opposite trends and more urethral mobility were observed during Valsalva, with larger pressure increases (~50-60 cmH2O) occurring to counteract the increased intravesical pressure (~65 cmH2O).

Conclusions: Dynamic ultrasound and urodynamics allow for the establishment of baseline ranges in urethral metrics and how they are altered during cough, squeeze, and Valsalva. Such data will allow clinicians to more readily and objectively identify ultrasound and urodynamic findings indicative of incontinence.

Table 1: Changes in urodynamic and dynamic ultrasound measurements from rest to each maneuver. Distal urethra refers to 1 cm from the meatus (the urethral knee) and proximal urethra refers to 0.5 cm from the bladder neck.

	Cough1-Rest		Cough2-Rest		Valsalva-Rest		Squeeze1-Rest		Squeeze2-Rest	
	n	mean ± SD	n	mean ± SD	n	mean ± SD	n	mean ± SD	n	mean ± SD
Intra-abdominal pressure (cmH2O)	18	51.3 ± 17.5	18	49.4 ± 17.7	18	99.8 ± 25.8	17	5.9 ± 5.0	16	8.0 ± 9.7
Intravesical pressure (cmH2O)	18	52.9 ± 16.4	18	50.8 ± 17.4	18	65.7 ± 28.6	17	5.9 ± 6.6	16	7.9 ± 10.2
Urethral pressure (cmH2O)	18	55.3 ± 14.3	18	51.7 ± 13.3	17	47.3 ± 28.6	17	30.0 ± 10.5	16	34.2 ± 17.5
Urethral length (cm)					18	-0.5 ± 0.3	18	0.3 ± 0.2		
Retropubic urethral length (cm)					13	-1.4 ± 0.6	18	0.2 ± 0.3		
Retropubic bladder neck angle (degrees)					19	58.7 ± 19.5	18	8.3 ± 10.4		
Bladder neck-pubic bone angle (degrees)					19	-39.4 ± 14.2	18	6.7 ± 4.5		
Urethral knee-pubic bone angle (degrees)					19	24.0 ± 13.6				
Anterior-posterior distal urethral thickness (cm)					15	0.4 ± 0.4	18	-0.3 ± 0.2		
Anterior-posterior mid-urethral thickness (cm)					18	0.2 ± 0.2	18	-0.1 ± 0.2		
Anterior-posterior proximal urethral thickness (cm)					18	-0.0 ± 0.2	18	-0.0 ± 0.1		

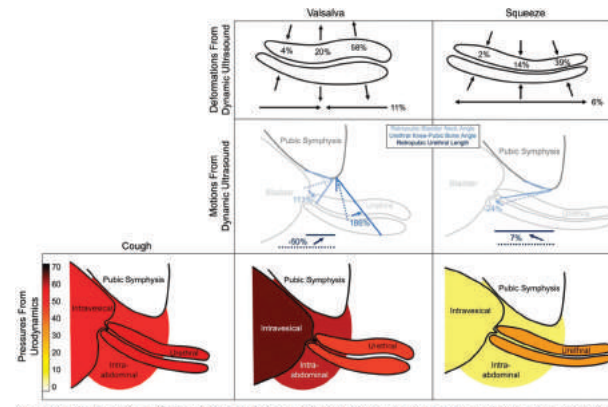


Figure 1: Illustrations of the average changes observed via urodynamics and dynamic ultrasound for each maneuver. The deformation row refers to changes in urethral length and thicknesses; the motion row refers to changes in urethral position/angles from rest (dotted lines) to squeeze/Valsalva (solid lines); and the pressures row refers to changes in intra-abdominal, intravesical, and urethral pressures from rest to each maneuver with colors representing smaller (white) to larger (black) changes in pressure (in cmH2O).

Disclosures: Megan Routzong: None, Liam Martin: None, Steven Abramowitch: None, Ghazaleh Rostaminia: None

Short Oral 42
MOBILITY OF THE PELVIC ORGANS DURING EVACUATION WITHIN YOUNG, NULLIGRAVID WOMEN

L. Martin[1], M. Routzong[1], G. Rostaminia[2], S. Abramowitch[1]. *University of Pittsburgh[1], NorthShore University HealthSystem/ University of Chicago[2]*

Objective: While the suspensory ligaments of the pelvic organs prevent motion of the pelvic viscera towards the genital hiatus, they must also be compliant enough to accommodate for the changing volumes within the rectum and bladder. This compliance is also likely to result in significant motions of the pelvic organs. Since excessive motion is often an indication of a defect, the aim of this

study was to establish a baseline of motion by quantifying the direction and range of motion of pelvic viscera in nulligravid asymptomatic volunteer subjects who underwent dynamic MR defecography.

Methods: This prospective cohort study recruited 19 volunteers, but only 15 (age: 29.9 ± 9.1) successfully evacuated. A midsagittal slice representing rest and maximum strain during evacuation were used for analysis. Axes were defined as the pubococcygeal line (PCL, x') and an orthogonal line that connects the PCL to the sacral promontory (y'). The positions of bladder neck, hymen, midvaginal point, anorectal junction, and the posterior vaginal fornix (PVF) were found. Lines connecting the positions of the PVF to the S4S5 intravertebral disk and the sacral promontory, respectively, were also collected. All measures were normalized to the size of the pelvis (Figure 1).

Results: Soft tissue movement due to levator relaxation and increased intra-abdominal pressure was more prominent along the y' axis. All landmarks (excluding the hymen and anorectal point) were above the PCL at rest and below the PCL at maximum strain. Relative to the pubic symphysis, all soft-tissue landmarks rotated caudally, with the bladder neck and mid-vagina (supported by level 2) showing the largest amount of rotational motion.

Conclusions: Evacuation is a dynamic physiologic event that results in significant motion of the pelvic organs in young, nulligravid women. Landmarks associated with level II support showed the most motion, followed by those associated with level I. This contradicts the perception that there is little movement of the pelvic organs in normally supported women. The implications of these findings are important for better understanding of physiologically compatible surgical repair procedures.

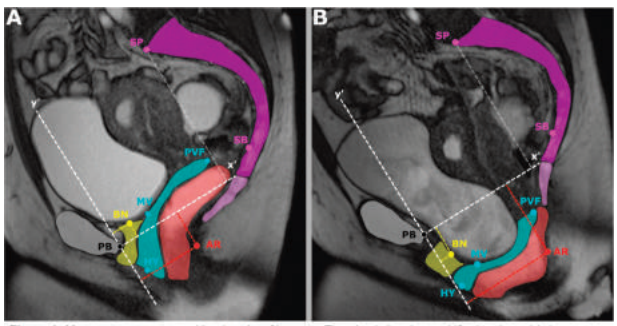


Figure 1: Measurement axes, and landmarks of interest. The y' axis has been shifted to the pubic bone, making point PB = (0, 0) for all measures. The x' components are normalized to the length of the PCL, and the y' components are normalized to the length of the orthogonal line from SP to the PCL. A) Measurements at rest with select projections shown. B) Measurements at strain with select projections shown. The anatomy of the pelvic region are shown in colors; Grey = Pubic Bone, Yellow = urethra, Cyan = Vagina, Red = Rectum, Purple = Sacrum, Pink = Coccyx. BN = Bladder Neck, HY = Hymen, MV = Midvaginal, PVF = Posterior Vaginal Fornix (Vaginal Apex), AR = Anorectal, SP = Sacral Promonotory, SB = S4S5 Intravertebral Disk

Table 1: Normalized component measures (x', y'), total relative lengths, and angles (with respect to the PCL) from rest to max strain. All values are normalized to the size of the pelvis (x' relative to PCL, y' relative to SP-PCL line). Values are shown as average ± standard deviation. SP = Sacral Promontory, PVF = Posterior Vaginal Fornix, SB = S4S5 Intravertebral Disk, PS = Pubic symphysis

	Rest				Max Strain			
	x' component	y' component	Total Relative Distance to PS	Angle Wrt PCL (°)	x' component	y' component	Total Relative Distance to PS	Angle Wrt PCL (°)
PVF	0.70 ± 0.11	0.25 ± 0.08	0.75 ± 0.09	20.0 ± 7.4	0.65 ± 0.09	-0.06 ± 0.15	0.67 ± 0.09	-5.3 ± 13.0
Hymen	0.11 ± 0.03	-0.20 ± 0.04	0.23 ± 0.04	-62 ± 8.5	0.08 ± 0.07	-0.31 ± 0.06	0.32 ± 0.06	-73.6 ± 9.2
Mid-vaginal	0.25 ± 0.04	0.15 ± 0.05	0.29 ± 0.05	29.9 ± 8.0	0.28 ± 0.03	-0.17 ± 0.09	0.33 ± 0.06	-29.8 ± 12.2
Bladder Neck	0.17 ± 0.05	0.13 ± 0.05	0.22 ± 0.04	37.8 ± 12.7	0.17 ± 0.04	-0.12 ± 0.07	0.22 ± 0.04	-34.2 ± 19.2
Anorectal	0.54 ± 0.05	-0.21 ± 0.05	0.58 ± 0.05	-21.3 ± 5.1	0.58 ± 0.07	-0.38 ± 0.08	0.69 ± 0.09	-33.0 ± 5.2
Line connecting SP to PVF	-0.12 ± 0.10	-0.74 ± 0.08	0.76 ± 0.08	-98.9 ± 7.4	-0.15 ± 0.13	-1.05 ± 0.15	1.07 ± 0.16	-97.8 ± 6.2
Line connecting SB to PVF	-0.40 ± 0.09	0.06 ± 0.11	0.42 ± 0.09	-188.3 ± 15.1	-0.44 ± 0.09	-0.19 ± 0.16	0.50 ± 0.13	-159 ± 15.9

Disclosures: Liam Martin: None, Megan Routzong: None, Ghazaleh Rostaminia: None, Steven Abramowitch: None

Short Oral 43
VIRTUAL VAGINAL BIOPSY FOR GENITOURINARY SYNDROME OF MENOPAUSE USING OPTICAL COHERENCE TOMOGRAPHY

A. Arthur[1], F. Lane[2], S. Qiu[3], Y. Jiang[2], N. Guaderrama[5], Y. Tadir[6], Z. Chen[6], N. Sudol[5]. *UC Irvine Medical Center[1], University of California Irvine[2], Beckman Laser Institute[3], Southern California Permanente Medical Group[5], Beckman Laser Institute, University of California, Irvine[6]*

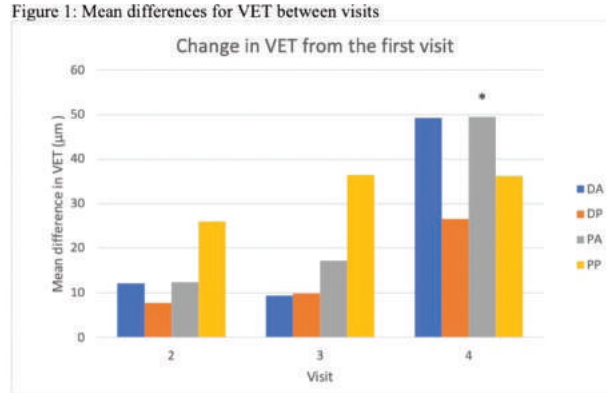
Objective: Fractional-Pixel CO_2 lasers are emerging as treatment for Genitourinary Syndrome of Menopause (GSM) [1]; however, data is limited regarding their effect on the vaginal epithelium and the ideal treatment intervals. We previously published results of our novel vaginal optical coherence tomography (OCT) system which demonstrated accurate visualization of the vaginal epithelium thickness (VET) in real time [2]. In this study, we sought to depict vaginal tissue changes that occur after CO_2 laser treatment for GSM using the vaginal OCT system. We hypothesized that OCT will accurately depict a change in VET and blood vessel density (BVD) after treatment and correlate with treatment response.

Methods: This is a prospective pilot study using OCT to evaluate the vaginal histomorphology of postmenopausal women with GSM. Participants were enrolled if they had one or more GSM symptoms and were excluded if they had used vaginal estrogen within 3 months. There were four visits at 4 to 6-week intervals. At each visit, participants completed the Vulvovaginal Symptom Questionnaire (VSQ) and underwent a vaginal exam to document the Vaginal Health Index (VHI) and obtain vaginal OCT measurements. The VSQ scores range from 0-20 with higher scores signifying worse symptoms. The VHI score is from 5 to 25 and lower scores imply worse symptoms. Vaginal CO2 laser treatments were performed at the first three visits. The OCT measurements were taken from 4 locations: distal anterior (DA), distal posterior (DP), proximal anterior (PA), proximal posterior (PP). The primary outcomes were changes in VET (μm) and percent change in BVD after treatment. The secondary outcomes were change in VHI and VSQ scores after treatment. Statistical analysis was performed using paired student t-test for the changes in BVD and VET and Mann-Whitney U for the VHI and VSQ.

Results: We enrolled 5 postmenopausal women with a mean age of 57.4 (SD 5.8), of which 4 were white and 1 was Hispanic. The mean length of menopause was 7 years (SD 2.23). There was a significant increase in VET in PA location after treatment ($P = 0.037$) (figure 1). Although change in VET at the other locations did not reach statistical significance, there was a trend towards increased VET at the PP and DA locations as well. In addition, BVD at the PA location significantly increased by visit 3 and was maintained at visit 4 ($P = 0.01$) (figure 2). All the participants reported vulvovaginal dryness and discomfort during intercourse on their initial VSQ. The baseline VHI ranged from 7 to 16 with a median of 14 (IQR 8.5) and VSQ was 7 to 14 with a median of 10 (IQR 5). The median change in the VHI was 4 (IQR 6.5, $P = 0.03$) and the VSQ was 8 (IQR 7.5, $P = 0.006$) which signify improvement in symptoms.

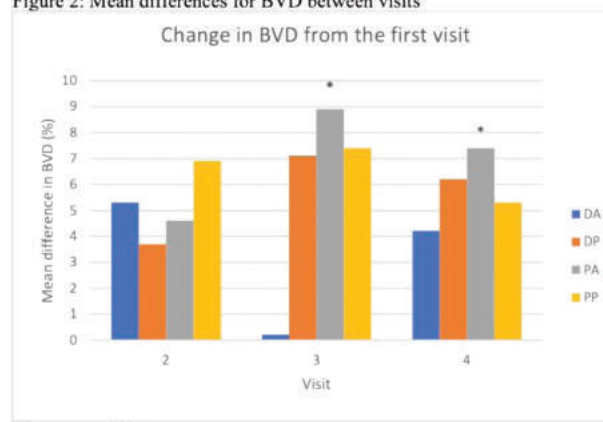
Conclusions: Fractional-Pixel CO2 laser treatment for GSM can affect changes in the VET and BVD that are measurable with the novel vaginal OCT device. With treatment, OCT demonstrated an increase in VET and BVD after treatment, which correlated with improvement in GSM symptoms based on VSQ and the VHI scores. Further study within a larger cohort will allow more concrete conclusions to be made about the impact of C02 laser treatment on BVD and VET.

Figure 1: Mean differences for VET between visits



*denotes p<0.05

Figure 2: Mean differences for BVD between visits



*denotes p<0.05

Disclosures: Afiba Arthur: None, Felicia Lane: None, Saijun Qiu: None, Yuchen Jiang: None, Noelani Guaderrama,: None, Yona Tadir: Alma Laser: Consultant: Self , Zhongping Chen: OCT Medical Imaging: Co-Founder and Board Member: Self, Alma Corporation: Grant/Research Support: Self , Neha Sudol: None

Short Oral 44
3D QUANTITATIVE ANALYSIS OF CLITORAL ANATOMY IMPROVES UNDERSTANDING OF CLITORAL ANATOMY IN NULLIPAROUS WOMEN

S. Bowen[1], A. Dutta[1], K. Rytel[1], S. Abramowitch[1], P. Moalli[2]. *University of Pittsburgh[1], Magee Women's Hospital of the University of Pittsburgh[2]*

Objective: Clitoral anatomy is poorly understood due to errors intrinsic to measurements obtained in cadavers and by 2D MRI. We developed a computational approach to quantify clitoral anatomy in 3D among nulliparous women and compared findings to prior 2D analyses.

Methods: Axial pelvic MRIs of nulliparous women at rest were obtained from a clinical database. Segmentations were performed using 3DSlicer to construct 3D models (clitoris, clitoral glans, vestibular bulbs, clitoral body, vagina, and urethra), imported into Blender for smoothing and exported to a custom Mathematica script for quantitative measures. Primary outcome included the length, width, and volume of the glans, crura, and body, clitoral volume, distance from each clitoral structure to the vagina, and distance between vagina and mid-urethra (Fig 1). Distance measures were the shortest distance between two 3D model surfaces in 3D space. All measures were calculated with respect to a 3D pelvic coordinate system.

Results: Clitoral dimensions obtained from 22 nulliparous women (age, 30 ± 7 years; BMI, 26.0 ± 6.3 kg/m^2) included: clitoral body (length, 17.3 ± 4.1 mm; width, 10.8 ± 2.7 mm); clitoral glans (length, 7.6 ± 2.5 mm; width, 5.0 ± 0.6 mm); clitoral crura (length, 37.7 ± 7.6 mm; width, 7.3 ± 1.6 mm). The mean volume of the clitoral components was 3090 mm^3 body, 222 mm^3 glans, 4897 mm^3 vestibular bulbs, 1945 mm^3 crura, and 10014 mm^3 whole clitoris. Distance to vagina from (1) clitoral crura was 8.6 ± 2.0 mm, (2) clitoral glans was 37.1 ± 8.3 mm, (3) clitoral body was 15.4 ± 3.8 mm, and (4) mid-urethra was 4.4 ± 2.0 mm. All 3D measures fell within the range of values reported in previous literature, where larger values and more variation was observed in all 2D- and cadaveric-based measures of clitoral dimensions and vaginal distances (Table 1).

Conclusions: Clitoral dimensions and distance measures quantified computationally in 3D-space were improved compared to current methods. Variability associated with manual measurements, limits reproducibility of quantitative findings and may obscure differences in measures due to error or high variation. Thus, studies incorporating computational approaches are more robust.

Figure 1: Visual representation of the clitoral measurements analyzed.

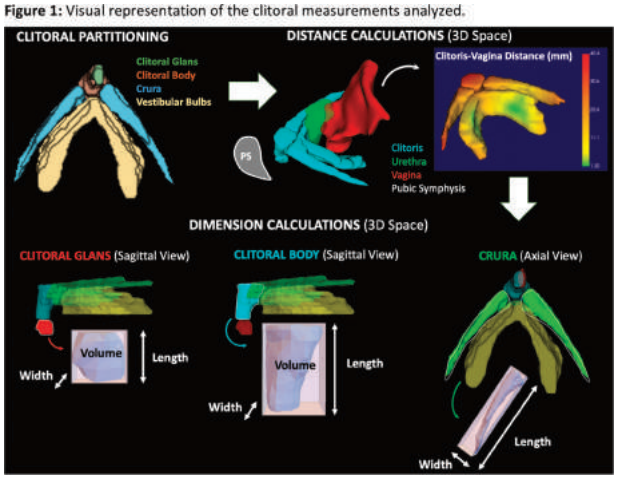


Table 1: Comparison of quantitative clitoral measurements from the present study to previous literature.

	Study	Present Study (N=22)		Vaccaro et al.[1] (N=20)		Jackson et al.[2] (N=22)	
	Measurement Method	*In Vivo 3D-MRI, Computational*		*In Vivo 2D-MRI, Manual*		*Cadavers, Manual*	
Structure	Measurement	Mean	SD	Mean	SD	Mean	Range
Clitoral Glans	Length (mm)	7.58	2.48	12.67	3.94	8	5-12
	Width (mm)	5.00	0.62	5.38	1.85	4	3-10
	Volume (mm^3)	222.23	124.76	--	--	--	--
	Distance to Vagina (mm)	37.06	8.33	49.27	10.5	--	--
Clitoral Body	Length (mm)	17.30	4.05	29.98	5.41	29	13-59
	Width (mm)	10.75	2.70	5.6	1.51	9	5-14
	Volume (mm^3)	3090.01	1028.00	--	--	--	--
	Distance to Vagina (mm)	15.44	3.84	29.65	7.51	--	--
Clitoral Crus	Length (mm)	37.66	7.64	--	--	54	13-69
	Width (mm)	7.34	1.62	--	--	18	9-29
	Volume (mm^3)	1945.21	969.97	--	--	--	--
	Distance to Vagina (mm)	8.60	2.00	17.98	7.14	--	--
Vestibular Bulbs	Volume (mm^3)	4896.56	2124.24	--	--	--	--
Whole Clitoris	Volume (mm^3)	10014.05	3691.61	--	--	--	--
Mid-Urethra	Distance to Vagina (mm)	4.41	2.03	15.54	4.51	--	--

Abbreviations: MRI, Magnetic Resonance Imaging; SD, Standard Deviation.

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Short Oral 45
PERINEAL MEMBRANE AND PROLAPSE IN YOUNG WOMEN: ASSESSMENT OF MORPHOLOGICAL CHANGES USING MRI-BASED 3D SURFACE MODEL

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Objective: The perineal membrane (PM) is a critical but poorly understood hiatal closure mechanism component. We test the hypothesis that PM impairment is involved in the prolapse mechanism in young women by comparing their PM morphology to parous control using a recently published MRI-based reconstruction technique.

Methods: Secondary analysis of two prior studies; convenience sample. MRIs from ten young women (<40 yo) with prolapse (Y-POP) were compared to 19 parous controls. The PM was traced on coronal MRI scans using 3D Slicer and analyzed with Rhino®. Six PM parameters were measured: swinging door angle, bony and soft tissue attachment lengths, PM hiatal and surface areas, and separation at the perineal body level (Fig. 1). Pairwise comparisons were performed and Cohen's D calculated (d).

Results: Overall, average age and BMI were 31.2 ± 5.1 years and 26.1 ± 4.9 kg/m2, respectively, and similar between groups. Y-POP women had an average parity of 3.1 ± 1.75 and average maximum prolapse of 0.9 ± 1 cm. Compared to controls, Y-POP women had 28% larger separation at the perineal body (p = .004, d = 1.4), 32% larger PM hiatal area (p = .01, d = 1.1), 17% larger soft tissue attachment length (p = .01, d = 1.1), and 17% larger bony attachment length (p = .01, d = 1.4). The two outliers with substantially larger separation at the perineal body in the controls corresponded to the 60th percentile of the Y-POP group (Fig. 2). Groups had similar average swinging door angle (p = .80) and surface area (p = .14), and similar rates of major levator ani defects (controls = 21%; Y-POP = 20%).

Conclusions: PM separation at the perineal body was 28% larger in Y-POP women compared to controls, suggesting a possible causal relationship. PM hiatal area and soft tissue attachment length were also larger in the Y-POP group, suggesting connective tissue disruptions and hiatal closure impairment is also involved in the prolapse mechanism. Comment: Major levator defects were notably lower in our Y-POP cohort than what is reported in the literature (43-55%), suggesting that in young women the prolapse mechanism may not be primarily due to muscle impairment.

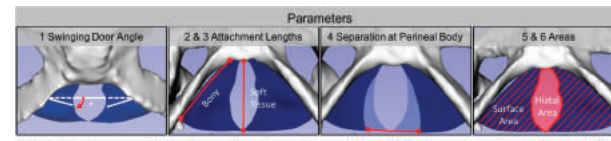

Figure 1. Lithotomy view of pelvis with perineal membrane surface model (dark blue) indicating measured parameters (as labeled) for childbirth-related potential morphological changes.

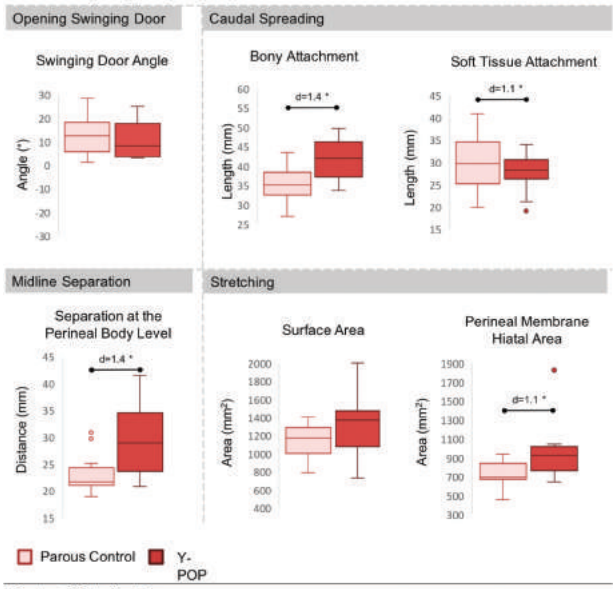

Figure 2. Perineal membrane morphological parameters comparison between parous control and young prolapse groups.

*P-value <.05; d, effect size.
Effect size not shown if non-significant P-value

Disclosures: Fernanda Pipitone: None, Carolyn Swenson: None, John DeLancey: None, Luyun Chen: None

Short Oral 46
COST-EFFECTIVENESS OF PROPHYLACTIC MIDURETHRAL SLING AT THE TIME OF VAGINAL PROLAPSE SURGERY

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Objective: To compare the cost-effectiveness of 3 midurethral sling (MUS) utilization strategies in preventing occult stress urinary incontinence (SUI) 1-year following vaginal prolapse repair (VPR).

Methods: We created a decision analysis model to compare 3 approaches: 1) Staged: VPR alone without MUS, 2) Universal sling: VPR with concomitant MUS, and 3) Preop CST: VPR with selective concomitant MUS based on preoperative cough stress test (Figure 1). All MUS were assumed to be retropubic. Using high quality literature, we modeled risks of occult SUI, sling failure, false negative CST, reoperation for urinary retention or mesh complication, and treatment for overactive bladder (OAB) (Table 1). We estimated costs using Medicare reimbursement. The main outcome was incremental cost-effectiveness ratio (ICER). One-way sensitivity analyses were performed to assess for model robustness.

Results: Compared to a Staged approach, both Pre-op CST and Universal sling were cost effective. Pre-op CST was less costly per quality-adjusted life year (QALY) than Universal sling with an ICER of $2,664 versus $7,766/QALY. With an increasing share of women (>61.8%) with occult SUI electing to undergo MUS, Universal sling would then replace Pre-op CST to be the more cost-saving strategy. Multiple 1-way sensitivity analyses showed no other meaningful thresholds.

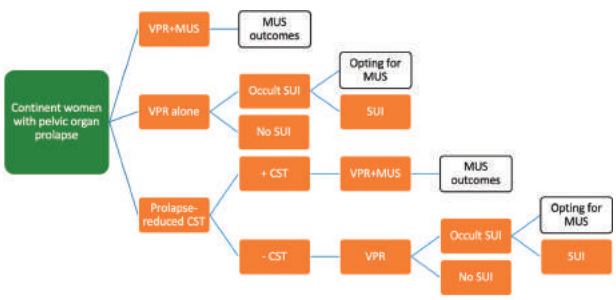

Fig 1. Decision tree for women with prolapse without SUI undergoing vaginal prolapse repair and their subsequent management of SUI if present
VPR, vaginal prolapse repair; MUS, midurethral sling; SUI, stress urinary incontinence; CST, cough stress test

Calculated Probabilities	Base case	95% CI	Source
Occult SUI after VPR alone with Staged approach	43.0%	35.5%-50.8%	Wei et al, 2012
Positive CST in continent women	35.9%	32.0%-40.1%	Wei et al, 2012 van der Ploeg et al, 2015
Occult SUI after VPR alone with a negative Pre-op CST	33.6%	28.7%-38.9%	Wei et al, 2012 van der Ploeg et al, 2015 Al-Mandeel et al, 2011
Occult SUI women opting for MUS	21.4%	15.0%-29.0%	Wei et al, 2012 van der Ploeg et al, 2015 Al-Mandeel et al, 2011
SUI after Universal MUS	27.3%	20.6%-34.7%	Wei et al, 2012
SUI after Staged MUS	12.8%	11.6%-14.1%	Ford et al, 2017
SUI after selective concomitant MUS with a positive Pre-op CST	26.0%	17.6%-36.0%	Wei et al, 2012 van der Ploeg et al, 2015
Voiding dysfunction requiring sling lysis after MUS	7.2%	6.3%-8.2%	Ford et al, 2017
Recurrent SUI after sling lysis	13.0%	2.8%-33.6%	Rardin et al, 2002
Mesh exposure requiring excision after MUS	2.0%	1.5%-2.7%	Ford et al, 2017
Recurrent SUI after mesh excision	31.0%	19.5%-44.5%	Jumbusairu et al, 2016
Overactive bladder medication requirement after MUS	8.2%	7.1%-9.4%	Ford et al, 2017

Table 1. Base Case Assumptions
CI, confidence interval; SUI, stress urinary incontinence; VPR, vaginal prolapse repair; CST, pre-op cough stress test; MUS, midurethral sling

A surgeon switching from Staged to Pre-op CST approach would need to perform 22 Pre-op CST cases to prevent 1 Staged patient from returning to the operating room for MUS. Conversely, a surgeon changing from Pre-op CST to Staged strategy would perform 39 Staged cases to prevent 1 patient from taking OAB medication, 61 Staged cases to prevent 1 sling lysis for voiding dysfunction, and 156 Staged cases to prevent 1 mesh excision for exposure.

Conclusions: Pre-op CST is the more cost-effective strategy to prevent occult SUI than Universal sling in women undergoing vaginal prolapse surgeries.

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Short Oral 48
VARIATION OF CHARGEMASTER PRICE LISTINGS FOR SLING PROCEDURES ACROSS FIVE STATES

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Objective: The 2018 Executive Order calling for price transparency required hospitals to provide their chargemaster on their public website. The chargemaster would list prices for procedures to drive competition and lower prices. The goal of this study was to evaluate price variations among prices listed for sling procedures and sling revisions on chargemasters from all hospitals in five states.

Methods: Chargemasters were obtained between February and April 2020 across 5 states chosen to represent a wide range of demographics and health system performance. Hospital characteristic data was obtained from the Homeland Infrastructure Foundation (HIFLD) and US Department of Agriculture websites. CPT (Current Procedural Terminology) codes for a "midurethral sling" procedure (57288) and a "sling revision" (57287) as well as procedure names were then used to search through each chargemaster and extract price listings.

Results: Hospital characteristics including hospital ownership, hospital type and metropolitan status varied significantly between states (Table 1). For example, at the statewide level, California was noted to have a large percentage of for-profit hospitals (22.50%) while New York had none. Mississippi had a large percentage of non-Metropolitan hospitals, while California and Massachusetts had mostly Metropolitan hospitals. A total of 837 hospitals in the 5 chosen states were included in the study. 74 chargemasters (8.84%) had price listings for midurethral sling procedures and 22 (2.63%) had price listings for sling revision. Two hospitals (0.24%) across 5 states had separate listings for CPT code and procedure name listed for a midurethral sling, which were not identical in pricing. Ten hospitals (1.19%) across the 5 states had separate listings for CPT code and procedure name for a sling revision, however the prices listed were not identical in value. There were significant differences in the mean, minimum and maximum charges across the 5 states for the midurethral sling procedure ($p < 0.001$) (Table 2) with California listing an average median price of over $17,000 for a sling and Ohio $1,544. There were no statistically significant differences in charges across the 5 states for the sling revision with the mean price listing $5,379 (±2,910).

Conclusions: Although mandating price transparency on hospitals increased the availability of chargemasters, <25% of hospitals made price listings available for a midurethral sling procedure or sling revision. Significant differences in price listings were noted in each state with >1 chargemaster only with the midurethral sling procedure. Our study demonstrates a need for hospitals to improve compliance with price listings in order for patients to navigate charges in a meaningful way. Further investigation of chargemaster procedure prices with hospital characteristics and quality metrics is imperative.

Table 1 - Hospital Characteristics Data

State	California (CA)	Massachusetts (MA)	Mississippi (MS)	New York (NY)	Ohio (OH)	P-value
Average # of Beds						
Number of beds	n=434, 196 (169)	n=75, 203 (169)	n=96, 124 (151)	n=198, 260 (226)	n=179, 233 (235)	<0.001
Hospital Ownership						
District Government	48 (10.90%)	3 (3.75%)	1 (1.01%)	5 (2.39%)	4 (2.17%)	
Federal Government	18 (4.09%)	5 (6.25%)	3 (3.03%)	13 (6.22%)	6 (3.26%)	
Local Government	28 (6.35%)	0 (0%)	41 (41.41%)	15 (7.18%)	10 (5.43%)	
State Government	5 (1.14%)	0 (0%)	4 (4.04%)	4 (1.91%)	4 (2.17%)	
Non-profit	242 (55.0%)	62 (77.5%)	30 (30.30%)	172 (82.30%)	147 (79.89%)	
For-profit (Proprietary)	99 (22.50%)	10 (12.5%)	20 (20.20%)	0 (0%)	13 (7.07%)	<0.001
Hospital Type						
General Acute Care	434 (95.81%)	75 (93.75%)	72 (72.72%)	176 (82.63%)	144 (76.19%)	
Critical Access	0 (0%)	0 (0%)	24 (24.24%)	18 (8.45%)	33 (17.46%)	
Military	18 (3.97%)	5 (6.25%)	2 (2.02%)	13 (6.10%)	6 (3.17%)	
Special	0 (0%)	0 (0%)	0 (0%)	4 (1.88%)	6 (3.17%)	
Women	1 (0.22%)	0 (0%)	1 (1.01%)	2 (0.94%)	0 (0%)	<0.001
Metropolitan/Non-Metropolitan Status						
Metropolitan	418 (92.27%)	77 (96.25%)	28 (28.0%)	171 (70.37%)	129 (53.49%)	
Non-Metropolitan	35 (7.73%)	3 (3.75%)	72 (72.0%)	42 (19.72%)	60 (46.51%)	<0.001

Data are reported as means (standard deviations) or counts (percentages).
Comparisons are ANOVA or chi-square.

Table 2 - Price Listings for Midurethral Sling and Sling Revision Procedures

Price Listings for Midurethral Sling Procedure (CPT 57288 & "midurethral sling")						
State	**California (CA)**	**Massachusetts (MA)**	**Mississippi (MS)**	**New York (NY)**	**Ohio (OH)**	**P-value**
Number of hospitals with prices listed	37	1	3	26	7	-
Mean price listed ($)	17021 (2204 - 19054)	3692 (3692-3692)	1955 (1577-4914)	5413 (750 - 10874)	1584 (624 - 6120)	<0.001
Minimum price listed($)	17021 (1050 - 19054)	3692 (3692-3692)	1955 (1577-4914)	5413 (750 - 10874)	1584 (624 - 6120)	<0.001
Maximum price listed ($)	17021 (2204 - 19054)	3692 (3692-3692)	1955 (1577-4914)	5768 (750 - 10874)	1584 (624 - 6120)	<0.001
Price Listings for Sling Revision (CPT 57287 & "sling revision")						
Number of hospitals with prices listed	4	0	1	15	2	-
Mean price listed ($)	3341 (1814 - 13276)	-	1450 (1450-1450)	6011 (615 -7737)	4228 (3303 - 5153)	0.219
Minimum price listed ($)	3341 (1814 - 13276)	-	1450 (1450-1450)	6011 (615 - 7583)	4228 (3303 - 5153)	0.219
Maximum price listed ($)	3341 (1814 -13276)	-	1450 (1450-1450)	6011 (615 - 7890)	4228 (3303 - 5153)	0.219

Data are reported as medians (ranges).
Comparisons are Kruskal Wallis as data is non-parametric

Disclosures: Cara Grimes: Provepharm, Inc: Consultant: Self , Saman Baban: None, Amanda Kadesh: None, Jeanne Shi: None, Jai Ahluwalia: None, Aiden Lui: None, Dobie Giles: None, Abha Amin: None, Michael White: None, Gwendolyn Daly: None, Sonika Reddy: None, Adam Block: None, Richard Chaudhary: None

Short Oral 49
A RANDOMIZED CONTROLLED TRIAL EVALUATING THE EFFECT OF AN EDUCATIONAL VIDEO ON PATIENT UNDERSTANDING OF MIDURETHRAL SLING

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Objective: The primary objective was to evaluate the use of a novel video about midurethral sling surgery for enhancing patient knowledge, compared to standard educational handout. Secondary objectives were to compare post-operative urinary incontinence outcomes, satisfaction with decision, and regret between groups.

Methods: In this dual center randomized controlled trial, women scheduled for midurethral sling were randomized to one of two educational interventions, either a novel video or standard handout. The primary outcome was change in knowledge measured via a 15-question knowledge questionnaire completed before and after the intervention. Baseline validated urinary incontinence questionnaires were completed. Secondary outcomes were knowledge retention, urinary symptoms, decision satisfaction and regret measured via validated questionnaires, completed at 2- and 6 weeks post-operative. Data are presented as median (interquartile range) and comparisons made using non-parametric statistics between intervention groups.

Results: Thirty-eight women, 19 per site, were randomized from August 2019 to October 2020 and 37 completed the primary outcome per protocol. The median age was 51 (18) years, 19 (50%) were non-Hispanic White, 13 (34%) Hispanic, and 6 (16%) Asian. There were no significant demographic differences between groups. Thirty-two women underwent midurethral sling, including 31 (97%) retropubic and 1 (3%) transobturator. Participants randomized to educational video demonstrated greater change in knowledge than those randomized to handout (+8.5 (3) vs +2.0 (4), $P < 0.0001$). There were no differences in decision regret (1.0 (0.5) video vs 1.0 (0.8) handout, $P = 0.80$)) or satisfaction with decision (5.0 (0) video vs 5.0 (0.9) handout, $P = 0.48$) at 6-weeks postoperative. Patients randomized to educational video demonstrated improved post-operative urinary symptoms compared to handout (Urogenital Distress Inventory-6 0.0 (8.3) vs 14.6 (26.0) $P = 0.02$; Incontinence Severity Index 0.0 (2) vs 3.0 (4), $P = 0.005$.

Conclusions: An original educational video used to enhance surgical consent improved knowledge and urinary symptoms after midurethral sling compared to a standard handout.

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UPLOAD-https://planion-client-files.s3.amazonaws.com/AUGS/blobs/3aa46efb-be60-4de0-86c3-de32da9c67ca/1/Table_2_AUGS_tiff.tiff

Disclosures: Sarah Jeney: None, Emily Whitcomb: None, Jun Ihara: None, Noelani Guaderrama: None, Farhana Mukhtar: None, Bhumy Heliker: None

Short Oral 50
COST-EFFECTIVENESS ANALYSIS OF EARLY SLING LOOSENING VERSUS DELAYED SLING LYSIS IN THE MANAGEMENT OF VOIDING DYSFUNCTION AFTER MIDURETHRAL SLING PLACEMENT

D. Vargas-Maldonado[1], K. Wymer[1], J. Gebhart[1], J. Occhino[1], E. Trabuco[1], B. Linder[1]. *Mayo Clinic[1]*

Objective: Synthetic midurethral slings are the most commonly utilized treatment for female stress urinary incontinence. Complications such as postoperative voiding dysfunction or urinary retention are encountered after 1-4% of sling placements. The management of this complication is heterogeneous, with some advocating for early sling loosening, as compared to delayed sling lysis for those with persistent voiding issues. These treatment strategies come with tradeoffs in regards to complications, potentially unnecessary intervention, and long-term quality of life. Direct comparative literature for these two management strategies is sparse. To compare these disparate management options, we sought to perform a cost-effectiveness analysis for early sling loosening versus delayed sling lysis for voiding dysfunction after midurethral sling placement.

Methods: A Markov analytic model was created to compare the cost-effectiveness of early sling loosening (2 week) versus delayed sling lysis (6 week) for the management of persisting voiding dysfunction/retention after midurethral sling placement. The model included resolution rates of voiding dysfunction over time with conservative management, short-term complications, as well as the rate of recurrent stress urinary incontinence, or ongoing retention. Probabilities and utility values were obtained from the literature and costs were based on 2020 Medicare reimbursement rates. Univariable sensitivity analyses were performed. Incremental cost-effectiveness ratios (ICER) were compared using a willingness to pay (WTP) threshold of $100,000/quality-adjusted life year (QALY).

Results: At one year follow-up, early sling loosening resulted in increased costs ($3,575 vs $1,836) and higher quality-adjusted life years (0.948 vs 0.925) compared to delayed sling lysis. With an ICER of $74,381/QALY, early sling loosening was the most cost-effective strategy. The model was sensitive to multiple variables on one-way sensitivity analysis. For example, delayed sling lysis became cost-effective if the rate of retention resolution was ≥57%, recurrent SUI after loosening ≥9.6%, the utility value associated with severe SUI increased to greater than 0.78, or the cost of sling lysis was ≤ $1,974.

Conclusions: Early sling loosening represents a more cost-effective management method in resolving ongoing voiding dysfunction after sling placement. However,

this is dependent upon multiple factors. These findings may favor early clinical management in patients with voiding dysfunction after midurethral sling placement.

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Short Oral 51
MIDURETHRAL SLING VERSUS ROBOTIC BURCH COLPOSUSPENSION AND THE IMPACT ON POSTOPERATIVE STRESS URINARY INCONTINENCE FOLLOWING ROBOTIC SACROCOLPOPEXY

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Objective: Patients with advanced stage prolapse undergoing repair frequently have pre-existing stress urinary incontinence (SUI) or are at risk for developing SUI with correction of pelvic organ prolapse (POP), i.e occult SUI. Thus, surgeons frequently perform concomitant anti-incontinence procedures such as midurethral slings (MS) during index procedures for pelvic reconstruction to prevent postoperative SUI. A subset of women who do not desire a sling or have conditions that preclude the use of mesh may undergo a burch colposuspension (BC). Specifically, some surgeons avoid vaginal sling mesh in current smokers due to possible increased erosion risk. Evidence is currently scarce as to the perioperative outcomes and efficacy of midurethral slings versus robotic burch colposuspensions in reducing the risk of postoperative SUI in women with advanced POP undergoing robotic-assisted laparoscopic sacrocolpopexies (RA-SCP).

Methods: A retrospective cohort study was performed between March 2013 and March 2019. Patients who underwent a RA-SCP were included in the study. Cases of patients having undergone concomitant BC were compared to MS controls. The primary outcome is the presence of SUI six weeks after the index surgery. Secondary outcomes include the development of acute and chronic urinary retention, post void residual volume (PVR) (cc), required home catheterization, and operative time (minutes). Demographic variables were compared including age (years), race, body mass index (kg/m^2), parity, comorbid medical conditions, and smoking status. A subanalysis was performed to assess the percentage of patients with or without preoperative baseline SUI.

Results: A total of 761 women were identified in this study. Cases (n = 60) trended towards higher postoperative SUI (10% vs. 7.1%, $P = 0.435$): both 1) unresolved preoperative SUI (8.9% vs 3.7%) and 2) new-onset, occult SUI (2.2% vs 1.5%) as compared to controls (n = 701). Controls were noted to have statistically larger PVR volumes (218 cc vs 136 cc, $P < 0.05$), and non-statistically significant differences in acute urinary retention (44% vs 40%, $P = 0.761$), requiring discharge with home catheterization (42% vs 49%, $P = 0.43$), or chronic urinary retention (3% vs. 0%, $P = 0.247$) compared to cases. Operative time was greater for those undergoing BC than MS (53 vs 47 mins, $P < 0.05$). Other postoperative outcomes including pain medication use, as measured by morphine milligram equivalents (MME) used and quantitative blood loss (g/dL) were comparable between groups. Controls were noted to be older (68 vs. 60 years old, $P < 0.05$) and have higher prevalence of diabetes (15% vs 3%, $P < 0.05$), while cases were noted to have higher prevalence of chronic obstructive pulmonary disease (COPD) (12% vs 5%, $P < 0.05$) and positive smoking status (83% vs 25%, $P < 0.01$) compared to cases.

Conclusions: At the time of RA-SCP, BC and MS both have comparable efficacy in preventing ongoing or occult SUI without a statistically significant difference in other outcomes. Of note, BC patients were pre-selected as smokers and had higher COPD; despite that, they still had comparable efficacy to the MS group. This should help surgeons as they counsel patients on the profiles of concomitant incontinence procedures at the time of pelvic reconstructive surgery.

Disclosures: Michael Shu: None, Ji Young Lee: None, Ruthia Chen: None, Abeer Eddib: None

Short Oral 52
INTRAOPERATIVE MIDURETHRAL SLING BEFORE VERSUS AFTER SACROCOLPOPEXY: A RETROSPECTIVE COHORT STUDY

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Objective: Midurethral slings (MS) are commonly performed at the time of pelvic reconstructive surgery (PRS) to either treat or prevent occult stress urinary incontinence (SUI). MS may be performed both before or after PRS, with scarce evidence in the medical literature indicating which offers better outcomes. Some surgeons propose to perform the MS specifically before the PRS as it may be easier to dissect and perform the sling before correction of the prolapse, while other surgeons prefer to perform the sling after PRS, as the degree of prolapse at the time when a MS is performed before PRS may affect the proper tensioning of the MS enough to render it less effective. This study aims to compare postoperative outcomes following robotic-assisted laparoscopic sacrocolpopexy (RA-SCP) with concomitant before and after MS procedures.

Methods: A retrospective cohort study was performed between March 2013 and March 2019. All women who underwent a RA-SCP with concomitant MS were included in the study. Controls of MS performed after RA-SCP were compared with cases of MS performed before RA-SCP. The primary outcome was presence of stress urinary incontinence six weeks after the index surgery. Secondary outcomes include the presence of urinary retention, post void residual bladder volume (PVR) (cc), and required discharge with home catheterization. Demographic variables were compared including age (years), race, body mass index (kg/m^2), parity, comorbid medical conditions, and smoking status.

Results: A total of 705 women were identified in this study. Cases (n = 27) were more likely to have postoperative SUI (20% vs. 4%, $P < 0.05$): both 1) unresolved preoperative SUI (10% vs 3.5%) and 2) new-onset, occult SUI (10% vs 0.5%) as compared to controls (n = 678). Controls were noted to have a greater propensity for acute (44% vs. 42%, $P = 0.84$) and chronic (3.1% vs 0%, $P > 0.99$) urinary retention respectively, larger PVR volumes (216 vs 187 cc, $P = 0.45$), and a higher percentage chance of requiring discharge with home catheterization (44% vs 42%, $P > 0.99$) compared to controls - however none were statistically significant. Demographic variables were similar amongst both groups.

Conclusions: MS performed after RA-SCP for PRS was associated with a statistically significant decreased risk of postoperative SUI compared to MS before RA-SCP regardless of preoperative incontinence status. This is thought to be due to the resolved prolapse allowing proper tensioning of the anti-incontinence procedure. Post-operative complications did not appear to be statistically increased in MS performed after RA-SCP compared to beforehand. Surgeons should consider performing MS after RA-SCP and correction of the prolapse, in order to offer women the most successful procedure for prevention of SUI following PRS.

Disclosures: Michael Shu: None, Ji Young Lee: None, Ruthia Chen: None, Abeer Eddib: None

Short Oral 54
OBSTETRIC ANAL SPHINCTER INJURY FOLLOWING PREVIOUS VAGINAL DELIVERY

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Objective: Obstetric anal sphincter injury (OASI) is a debilitating complication of vaginal delivery. Women who have had a previous vaginal delivery are a unique group with previous studies estimating OASI rate to be substantially lower than in nulliparous women. The aim of this study was to identify risk factors for OASI in women with a previous vaginal delivery. We further attempted to detect specific risk factors for severe OASI in this subgroup.

Methods: We conducted a retrospective cohort study at a tertiary, university teaching hospital between 2003-2019. The study group included women with OASI who had a singleton, live, vertex, vaginal delivery at term and who also had at least one previous vaginal delivery. The control group included women with at least one previous vaginal delivery without OASI. General medical history, obstetric history, ante-partum, intra-partum and post-partum data were collected and compared between groups.

Results: Following implementation of the inclusion criteria 79,176 women were included. Allocation to study groups was according to OASI occurrence - 135 patients (0.2%) had a 3rd or 4th degree perineal tear, while 79,041 patients (99.8%) had no such injury. Mean age of the entire study population was 30.1 ± 5.5 and the average number of previous vaginal deliveries was 2.6 ± 1.9. Patients with OASI were more likely to be younger, with fewer previous vaginal deliveries and more advanced gestational week at delivery. Rates of vaginal birth after cesarean (VBAC) did not differ between the groups (8.1% vs. 7.5% for OASI vs. no OASI, respectively, $P = 0.743$).

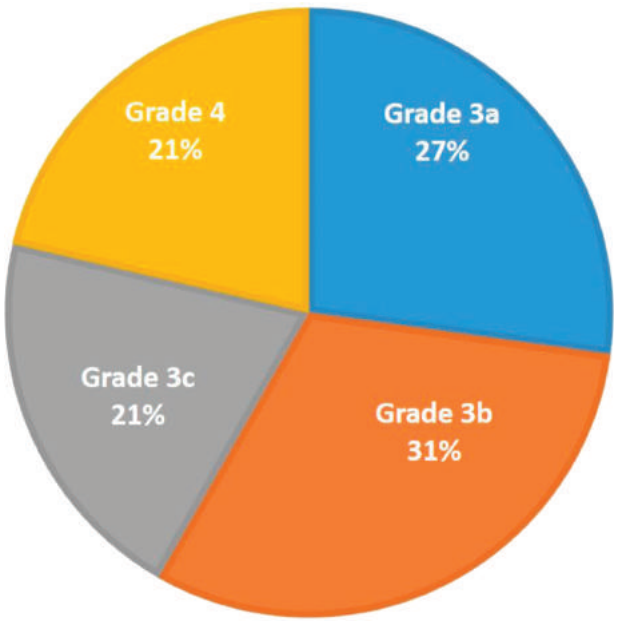
Multivariate analysis revealed the following parameters were associated with OASI – a single vs. two or more previous vaginal deliveries, birth weight ≥ 3900 grams (90th percentile), vacuum assisted vaginal delivery and episiotomy. Comparison of more severe OASI (3C and 4th degree) cases to

the control group showed similar results with the addition of prolonged second stage of labor and young age to risk factors associated with severe OASI while episiotomy was no longer significant.

Conclusions: In women with a previous vaginal delivery, one previous vaginal delivery, increased birth weight, vacuum assisted vaginal delivery and episiotomy are risk factors for OASI. Risk factors for more severe OASI in this subgroup include young age, one previous vaginal delivery, increased birth weight, vacuum assisted vaginal delivery and prolonged second stage of labor.

Table 3. Multivariate analysis of parameters associated with obstetric anal sphincter injury in patients with a previous vaginal delivery

Parameter	OR (95% CI)	P value
Age	0.99 (0.96-1.03)	0.704
No. of previous vaginal deliveries		
One	Referent	
Two or more	0.33 (0.22- 0.49)	<0.001
Prolonged second stage of labor	1.86 (0.92-3.76)	0.085
Birth weight ≥3900 grams	4.82 (3.32-6.98)	<0.001
Delivery type		
Vaginal	Referent	
Vacuum extraction	2.99 (1.65-5.41)	<0.001
Episiotomy	2.14 (1.18-3.86)	0.012



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Procrustes analysis, principal component (PC) analysis, and parallel analysis resulting in PC scores used in statistical analyses. 1st/2nd vs 3rd trimester shapes were compared across all three SSMs with MANCOVAs with maternal age as the covariate. Follow-up ANCOVAs were performed to assess individual PFM and bony pelvis SSM modes. To determine which significant shape differences may be predictive of gestational age, receiver operator characteristic (ROC) curves were generated.

Results: This study included 17 1st/2nd and 17 3rd trimester women (mean age = 30.5 and 33.5 years, median parity = 1 and 1, median gravidity = 2 and 4, respectively). Overall, the combined ($P = 0.002$) and bony pelvis ($P = 0.001$) shapes differed significantly, demonstrating significant remodeling in the 3rd trimester. PFM Mode 4 demonstrated straightening of the levator plate and inferior descent of the external anal sphincter in 3rd trimester women (Table 1, Fig 1). Bony pelvis modes 1 and 5 demonstrated overall widening and anterior-inferior sacral displacement in 3rd trimester women and were significant predictors of 3rd trimester morphology (AUC = 0.0786 and 0.725, $P = 0.012$ and 0.047, respectively).

Conclusions: Pronounced differences in PFM and bony pelvis morphology exists across pregnancy, particularly in the iliac crest (which is wider) and posterior PFMs (which are more vertical) in 3rd trimester women. These pregnancy adaptations should be considered in computational models of pregnancy and childbirth.

Table 1: Percent of the total shape variance explained by each mode and ANCOVA p-values

	N	Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8
Combined SSM	25	22.3%	20.5%	8.4%	6.8%	6.3%	5.3%	4.3%	
Pelvic Floor SSM	28	27.3%	14.9%	10.9%	9.1%	5.3%	3.9%		
p-value		0.204	0.973	0.288	**0.024**	0.350	0.447		
Bony Pelvis SSM	33	23.2%	12.5%	9.9%	7.9%	6.6%	4.6%	4.1%	2.8%
p-value		**0.008**	0.931	0.498	0.246	**0.022**	0.424	0.481	**0.036**

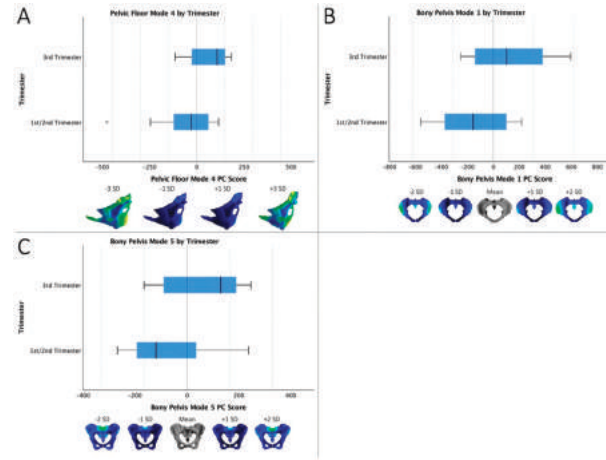

Figure 1: Horizontal boxplots demonstrating PC score trimester group distributions for all modes with univariate statistical significance. Pelvic floor muscle mode 4 suggests that 3rd trimester women have more superiorly-inferiorly orientated coccygeus muscles, straighter and more vertical levator plates, and further descended perineal membranes and external anal sphincters. These bony pelvis modes demonstrate wider pelvises, straighter sacrococcygeal angles, more anterior-inferior sacral promontories, and slightly more vertical left iliac crests in 3rd trimester women. Vertical dotted lines denote standard deviations (SD) from the mean (PC=0) while corresponding shapes along each mode are shown below each plot. The colormap from dark blue to yellow indicates the smallest to largest deviations from the mean shape.

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Short Oral 55
STATISTICAL SHAPE MODELS DEFINE PREGNANCY INDUCED MORPHOLOGICAL ADAPTATIONS IN THE BONY PELVIS AND PELVIC FLOOR MUSCLES

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Objective: To define pregnancy induced adaptations in pelvic floor skeletal muscles (PFMs) and bones utilizing statistical shape modeling (SSM) and determine shape attributes that differ between women in the 1st/2nd vs 3rd trimester.

Methods: A retrospective study was performed on women age 20-49 who underwent pelvic MRI in pregnancy. Patients were excluded due to incomplete birth history data or inability to fully segment pelvic anatomy. PFMs (coccygeus, levator ani, and perineal muscles) and the bony pelvis were segmented from each patient. After establishing corresponding points, geometries were imported into Mathematica for statistical shape modeling (SSM). Our previously defined workflow involved a

Short Oral 56
A PREDICTION MODEL FOR ABNORMAL PELVIC FLOOR RECOVERY SIX MONTHS AFTER VAGINAL BIRTH IN A POPULATION AT HIGH RISK FOR PELVIC FLOOR INJURY

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Objective: Our objective was to develop a model predicting risk for abnormal recovery from childbirth in a cohort of women at higher risk of pelvic floor injury from childbirth.

Methods: Women were recruited from a single university based teaching hospital having their first vaginal birth with at least one of the following risk factors: instrumented vaginal delivery, anal sphincter laceration, episiotomy, and/or active pushing ≥150 minutes. All participants underwent pelvic floor exam and pelvic floor ultrasound at 6 weeks and 6 months postpartum. Based on our prior definition we classified cases as having either normal or abnormal recovery at 6 months postpartum (IUJ 2020). Women with normal and abnormal recovery were then

compared on measures of pelvic floor function, POPQ, demographics, and birth variables at 6 weeks and 6 months using independent samples t-tests and chi-square tests. A multivariable logistic regression model was then created to predict abnormal recovery at 6 months based on delivery and 6 week variables.

Results: Our sample included 85 women who met high risk criteria post vaginal birth, 54 (63.5%) with normal recovery and 31(36.5%) with abnormal recovery at 6 months. Mean age was 31 and similar between groups. The majority were white race identified (75.3%) and race distribution did not differ between groups. Women in the abnormal recovery group had lower BMIs (29.5 v 31.3, $P = 0.02$), were more likely to have active second stage ≥120 minutes (79.3% v 51%, $P = 0.01$), and had higher infant head circumference (35.5 v 34.4, $P = 0.01$). There was a trend toward higher infant birthweight (3673 v 3434, $P = 0.08$) for the abnormal recovery group. Table 1 shows delivery, functional, and anatomic variables for normal and abnormal recovery at 6 weeks and 6 months. The final logistic regression model predicting abnormal recovery at 6 months included the model constant ($\beta = -21.287$, $P = 0.011$), oxford score at 6 weeks ($\beta = -0.337$, $P = 0.008$), POPQ GH strain at 6 weeks ($\beta = 0.925$, $P = 0.049$), infant head circumference ($\beta = 0.515$, $P = 0.027$), and length of second stage ≥120 minutes ($\beta = 1.50$, $P = 0.032$). The AUC for the model is 0.83, indicating good balance between sensitivity and specificity of the model for predicting abnormal recovery at 6 months based on intrapartum and 6 week variables.

Conclusions: Using information and exam findings that are easy to collect at a 6 week postpartum visit, our calculator identifies a subset of women at risk for an abnormal recovery trajectory at 6 months. The model allows us to obtain a predictive probability of abnormal recovery at 6 months based on individual characteristics. The power of this tool is to enable selective referral for specialized care to mitigate potential impact of birth injury on future pelvic floor dysfunction.

Table 1

	Abnormal Recovery N=31	Normal Recovery N=54	P
6 Weeks			
Oxford Scale (sum)	3[2-5]	6[3-8]	0.002
Sacral Reflexes (Y/N)	28(96.6)	45(91.8)	0.6
POPQ Ba	-1[-2-0]	-2[-3- -1]	0.1
POPQ Bp	-1[-3-0]	-2[-3- -1]	0.02
POPQ C	-6.5[-8- -5]	-7[-8- -6]	0.6
GH (strain)	4[3-4]	3[3-3.5]	0.02
Maximum Kegel (F)	2.9±1.4	3.5±1.7	0.1
Lift on Ultrasound	14(51.8)	30(69.8)	0.1
Levator Injury (Y/N)	23(76.7)	11(22.4)	<0.001
6 Months			
Oxford Scale (sum)	5[2-6]	6[5-8]	<0.001
Sacral Reflexes (Y/N)	30(96.8)	52(96.2)	1
POPQ Ba	-1[-2-0]	-2[-3- -1]	<0.001
POPQ Bp	-2[-3-0]	-2[-3- -1]	0.002
POPQ C	-6.6[-7- -5.5]	-7[-8- -6]	0.003
GH (strain)	3.5[3-3.5]	3[2.5-3]	0.006
Maximum Kegel (F)	3.3±2.4	4.7±2.2	0.009
Lift on Ultrasound	19(63.3)	40(78.4)	0.1
Levator Injury (Y/N)	23(74.2)	0(0)	<0.001

N(%) for categorical
Mean±SD for continuous
Medium[IQR] for ordinal

*missing 6 week data for 7 (5 normal, 2 abnormal) subjects

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Short Oral 57
EFFECT OF DELIVERY AND LACTATION ON THE PELVIC FLOOR MUSCLE STEM CELLS IN THE EARLY POSTPARTUM PERIOD

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Objective: Pelvic floor muscle (PFM) recovery after childbirth is essential for the preservation of pelvic floor function. Estrogen (E) plays an important role in injured muscle recovery by its direct and indirect effects on the muscle stem cells (MuSCs), which are indispensable for muscle regeneration. The hypoestrogenemia induced by delivery and perpetuated by lactation is likely detrimental to the PFM postpartum regeneration. We utilized the validated rat model to: 1) determine the time course of MuSC activation following parturition and 2) test the hypothesis that lactation impacts pelvic MuSCs.

Methods: As the first step, the expression of E receptor transcripts in MuSCs isolated from PFMs by FACS was confirmed using standard qPCR protocol. MuSC number and time-course of activation/proliferation were assessed in the acute postpartum (PP) period (1, 5, and 7d after vaginal delivery (SVD)) using *in situ* immunohistochemistry (N = 3-8/time point). Late-pregnant (LP, D20) rats served as baseline. EdU was injected intraperitoneally 24 hrs before sacrifice. PFM MuSC reservoir was assessed using anti-Pax7 antibody. EdU incorporation (Click-iT™) was used to quantify MuSC proliferation. Given minimal PFM injury induced by SVD, additional animals underwent intrapartum simulated birth injury (SBI) followed by 7-days recovery. Each group was divided in lactating and non-lactating (pups removed immediately after SVD ± SBI) animals.

Results: ESR1 but not ESR2 transcripts were identified in the isolated pelvic MuSCs, consistent with ERa prevalence in skeletal muscles. The time-course of MuSC functional status revealed significant increase in proliferation on PP7, compared to LP and early PP timepoints (**Fig.A-D**). Comparisons of lactating vs non-lactating animals 7 days post-SVD revealed no difference in the MuSC reservoir between groups (**Fig.E-G**). However, dramatic reduction in MuSC proliferation was observed in lactating compared to non-lactating rats (**Fig.H**) at this time point. Interestingly, neither the MuSC number nor cellular proliferative ability were impacted by lactation 7 days after SVD + SBI (**Fig.I-L**).

Conclusions: Our findings indicate that PFM stem cells, which express gene for ERa, proliferate early PP following SVD, with substantial increase by PP day 7. Lactation negatively impacts MuSC proliferative ability PP. However, this effect is modulated by the degree of birth injury, with higher parturition-associated strains negating the inhibitory effect of lactation on MuSC function. The above suggests presence of complex interactive cues that impact pelvic MuSC fate postpartum. Future studies will focus on assessing the impact of lactation combined with various magnitude birth injuries on PFM phenotype long-term.

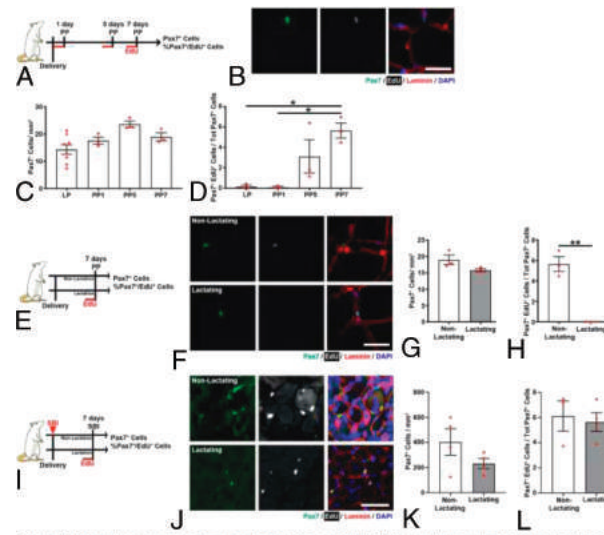

Figure. **(A)** Schematic representation of experimental approach in panel B-D. **(B)** Representative immunohistochemistry staining of post-partum (PP) day 7 tissue. **(C)** Quantification of MuSC reservoir in late pregnant (LP) at post-partum (PP) day 1, 5, and 7 animals. **(D)** Quantification of proliferating MuSCs in LP, and on PP days 1, 5, and 7 (one-way ANOVA; p-value<0.05). **(E)** Schematic representation of experimental approach in panel F-H. **(F)** Representative immunohistochemistry staining of non-lactating and lactating tissues harvested 7 days after delivery. **(G)** Quantification of MuSC reservoir in non-lactating and lactating animals 7 days after delivery. **(H)** Quantification of proliferating MuSCs in non-lactating and lactating animals 7 days after delivery (Mann-Whitney test; p-value<0.01). **(I)** Schematic representation of experimental approach in panel J-L. **(J)** Representative immunohistochemistry staining of non-lactating and lactating tissues harvested 7 days after simulated birth injury (SBI). **(K)** Quantification of MuSCs in non-lactating and lactating animals 7 days after SBI. **(L)** Quantification of proliferating MuSCs in non-lactating and lactating animals 7 days after SBI.

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Short Oral 58
HOW INVOLVED DO PATIENTS WANT TO BE IN THE MEDICAL DECISION-MAKING AT THE INITIAL UROGYNECOLOGY CLINIC VISIT?

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Objective: We compare the patient-preferred level of involvement in medical decision-making before the initial urogynecology visit to their perceived level of involvement in decision-making after the visit. Additionally, we aim to identify factors that may influence patients' preferred and actual involvement in decision-making and if it is associated with the patient report of a collaborative visit, symptom improvement, and visit satisfaction.

Methods: This prospective cohort study enrolled adult English-speaking women presenting for their initial visit at an academic urogynecology clinic. Prior to seeing the physician and again after the visit, patients completed the Control Preference Scale (CPS), which categorizes the role that patients want to have in their medical decision-making: active (patient wants to make the decision), collaborative (patient wants to make the decision with the physician), or passive (patient wants the physician to make the decision). Patients also completed the Pelvic Floor Distress Inventory (PFDI), CollaboRATE (querying how collaborative the visit was), Patient Global Impression of Improvement (PGII), patient satisfaction (PS), and Short Test of Functional Health Literacy in Adults (S-TOFHLA) questionnaires. Univariable and multivariable generalized estimating equations were used to compare the odds of reporting a more passive or collaborative CPS response against demographics and survey responses.

Results: 100 women, mean age 59.1 (SD = 15.5), participated in the study. Before the visit, 50% of the women preferred active involvement, followed by collaborative (45%) and passive (5%). After the visit, women rated their actual role in medical decision-making during the visit and 40% of women rated their actual role as active, 48% as collaborative and 11% as passive. On univariable analysis, women were 1.56 (95% CI: 1.06 – 2.29) times more likely to report a collaborative or passive CPS response after compared to before the visit ($P = 0.02$). This was maintained on multivariable analysis (1.57 [95% CI: 1.03 – 2.40] [$P = 0.04$]). After controlling for all other variables, only ethnicity and POPDI score were associated with CPS response. Specifically, women identifying as Hispanic were 2.66 (95% CI: 1.10 – 6.48) times more likely to report a preference for collaborative or passive CPS response ($P = 0.03$), and every 1-point increase in the POPDI score increased the odds of preferring a collaborative or passive CPS response by 2% ($OR = 1.02$, 95% CI: 1.01 – 1.03; $P = 0.01$). Patients' CPS responses before or after the visit were not associated with their responses on CollaboRATE, PGII, PS, or S-TOFHLA. However, those who perceived a fully collaborative visit on CollaboRATE reported better PGII score and higher odds of being completely satisfied.

Conclusions: There is a discordance between women's reported involvement in decision-making after the first urogynecology visit and their preferences before the visit, with more women reporting a passive or collaborative involvement after their visit. Despite the discordance, most women perceived collaboration during their visits and were completely satisfied. Women with more bothersome prolapse symptoms prefer more collaborative or passive role in decision-making.

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Short Oral 59
WHO ARE WE LEAVING HIGH AND NOT DRY? REACH OF BLADDER HEALTH PROMOTION VIA EMAIL

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Objective: (1) Understand the reach of bladder health promotion via email, (2) Compare women reached by email versus mail.

Methods: In partnership with the Survey of the Health of Wisconsin (SHOW), emails were sent to all women participants in 2017 SHOW with a link to a bladder health promotion website (www.obgyn.wisc.edu/bladder) where women could read or download a brochure, watch a 20 minute video, and download an app for urinary incontinence (UI). A REDCap survey invitation was emailed 2 weeks later. Survey responses were merged with existing SHOW data. Descriptive analyses characterized engagement with bladder health promotion materials and compared respondents from this email study with respondents from an analogous prior study via mail with 2016 SHOW participants.

Results: Among 437 women in 2017 SHOW, 310 (71%) had valid email, of whom 122 (39%) responded. Table 1 describes responders, non-responders, and those with no valid email (110 = none; 17 = invalid). Responders were more likely to be non-Hispanic white ($P = 0.01$) and > 200% Federal Poverty Level (FPL) ($P = 0.02$). Women without a valid email were older ($P < 0.001$); more likely to report income <200% FPL ($P = .04$); more likely to have severe UI ($P = .035$); and more likely to identify as non-white ($P = 0.01$). The 2016 mail cohort response rate was 54% (214/399), with similar distribution of age, BMI, education, and race. Responders were more likely to be non-Hispanic white (p-value from mail survey) and > 200% FPL (p-value from mail survey). Figure 1 shows engagement with bladder health promotion via email versus mail. Mail dissemination led to higher engagement with a brochure and email dissemination prompted higher engagement with electronic materials (website, video, app.).

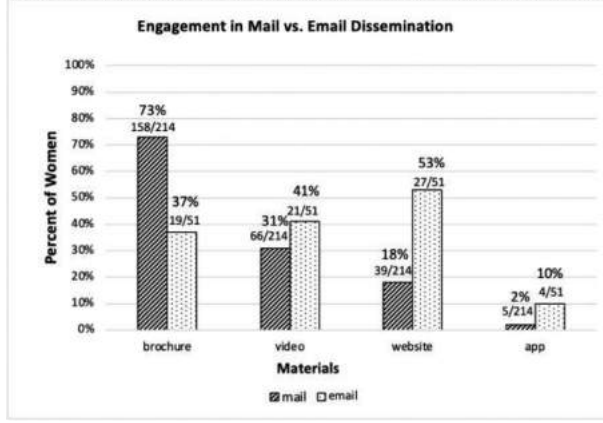
Conclusions: Bladder health outreach via email reaches younger, more educated women, with more resources, who are more likely to be white. Bladder health outreach via email leads to higher engagement with electronic resources, while mail dissemination may have higher reach overall. Future work should partner with non-white women with fewer resources to tailor outreach to minimize disparities.

Table 1: Demographics of responders and non-responders in the mail and email study.

	2016 (Mail dissemination)		2017 (Email dissemination)		
	Responder (N =214) 54%	Non-responder (N = 185) 46%	Responder (N=122) 28%	Non-responder (N=188) 43%	No Valid Email (N=127) 29%
Age (mean ± SD)	**58 ± 16**	**45 ± 18**	**54.7±12.4**	**53.9±13.7**	**62.1±13.1**
BMI (mean ± SD)	30 ± 8	31 ± 9	30.9±8.1	30.6±8.5	32.2±8.6
Race/Ethnicity					
White NH	184 (60)	125 (40)	108 (31)	143 (42)	91 (27)
Black/AA NH	21 (34)	41 (66)	12 (17)	29 (42)	28 (41)
Hispanic/Latina	4 (25)	12 (75)	1 (9)	7 (64)	3 (27)
Other/mixed	5 (42)	7 (58)	1 (8)	7(54)	5 (38)
Education					
HS or less	50 (47)	56 (53)	17 (17)	38 (38.5)	44 (44.5)
Some college	74 (49)	77 (51)	41 (30)	57 (42)	39 (28)
≥ College	90 (63)	52 (37)	63 (33.5)	84 (44.5)	42 (22)
Income					
<200% FPL	58 (40)	87 (60)	17 (14)	47 (39)	56 (47)
>200% FPL	149 (62)	90 (38)	102 (34)	136 (45)	64 (21)
Geography					
Urban	129 (47)	143 (53)	95 (27.5)	149 (43)	102 (29.5)
Rural	85 (67)	42 (33)	27 (30)	39 (43)	25 (27)
UI severity					
None	80 (48)	84 (51)	49 (26.5)	82 (44.5)	53 (29)
Mild/moderate	117 (56)	92 (44)	66 (30.5)	94 (43.5)	56 (26)
Severe	16 (73)	6 (27)	4 (15)	10 (37)	13 (48)

Abbreviations: AA – African American, BMI – Body Mass Index, FI – Fecal Incontinence, FPL – Federal Poverty Level, HS – High School, NH – Non-Hispanic, PCP – Primary Care Provider, SD – Standard Deviation, UI – Urinary Incontinence

Figure 1: Proportion of materials engaged with in mail vs. email dissemination



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Short Oral 60

IMPROVING PATIENT RECALL OF PLANNED INTERVENTION AFTER SURGICAL COUNSELING: THE IRIS RANDOMIZED CONTROLLED TRIAL

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Objective: To determine if an easy-to-read patient education card given at the preoperative visit can increase patient recall of the planned surgery.

Methods: This is a randomized controlled trial performed between November 2019 and December 2020. Patients between the ages 18 and 90 who were scheduled to undergo pelvic reconstructive surgery were recruited to participate during their preoperative visit. All participants received standard surgical counseling. Patients randomized to the intervention group also received a 4x7 inch card highlighting the planned surgery (Figure 1). All participants completed questionnaires testing their knowledge of the surgery preoperatively and postoperatively. All participants also completed a postoperative satisfaction questionnaire. The primary outcome was correct recall of the planned surgery (i.e. all questions were answered correctly). Secondary outcomes included correct recall of the surgery postoperatively and patient satisfaction with the information provided. Fisher's exact, Chi squared, student t-test, and Wilcoxon rank sum test were used for data analysis.

Results: 128 patients were enrolled. 64 were randomized to standard surgical counseling, and 64 were randomized to standard surgical counseling plus a supplemental patient card. 127 subjects were analyzed as 1 patient was lost to follow up. As expected, no significant difference was found between patient demographics, including types of surgeries performed. As to the primary outcome, 49.1% or 30 out of 63 participants in the intervention group answered all questions correctly versus 28.6% or 18 out of 64 patients in the standard counseling only group ($P = 0.016$), thus showing statistically significant improvement in preoperative recall compared ($P = 0.016$). Conversely, there was no statistically significant difference in the postoperative scores between the 2 groups, with 48.3% (28/58) and 52.5% (32/61) of the participants answering all questions correctly in the intervention and standard counseling only groups, respectively ($P = 0.648$). Median satisfaction scores in the control group and the intervention group were 20 out of 20 (interquartile range 19-20) and 20 out of 20 (interquartile range 19-20), respectively (Table 1).

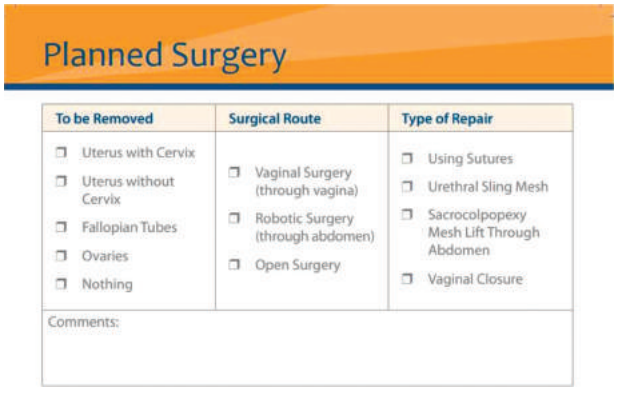
Conclusions: A concise and easy-to-use supplemental surgical patient education card enhances patients' preoperative recall of the proposed surgical procedure. This difference was not sustained postoperatively. Patients reported being highly satisfied with the amount of information provided to them at the preoperative surgical counseling session regardless of whether they received the card.

Table 1. Questionnaire scores¥

	Card	No card	P-value
Preoperative	**30/63 (49.1%)**	**18/64 (28.6%)**	**0.016**
Postoperative	28/58 (48.3%)	32/61 (52.5%)	0.648
Satisfaction‡	20 (IQR 19-20)	20 (IQR 19-20)	0.801

¥A questionnaire was considered to be answered correctly if all questions were answered correctly.

‡Expressed as median and interquartile range (IQR) with total possible score of 20 points



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Short Oral 61

EARLY FEASIBILITY STUDY OF A NOVEL COLLAPSIBLE PESSARY FOR THE TREATMENT OF PELVIC ORGAN PROLAPSE

K. Strohbehn[1], K. Maier[2], A. Sopher[2], M. Daigler[2], S. Shinn[1], P. Hanissian[3]. *Dartmouth-Hitchcock Medical Center*[1], *Reia, LLC*[2], *The Dartmouth-Hitchcock Clinic*[3]

Objective: Our primary objective was to obtain preliminary data regarding the feasibility and effectiveness of a novel pessary (Figure 1) for treating pelvic organ prolapse (POP). Our primary outcome was to determine the ability of the study pessary to be retained during Valsalva and activity compared to the subject's current pessary. Our secondary objectives included assessing discomfort with insertion and removal of the study pessary in comparison to current pessary, as well as patient preferences for the study pessary and current pessary.

Methods: This is a prospective, open-label early feasibility study (N = 15), with a 15-minute office trial of the novel pessary. Inclusion criteria included women 18 years and older who were current (ring or Gellhorn) pessary users to manage at least Stage II POP. Exclusion criteria included presence of a fistula, deep vaginal erosion, pregnancy, active urinary tract infection, and recent pelvic surgery. Using a 10 cm visual analog scale (VAS) subjects scored the discomfort with removal and reinsertion of the current pessary (CP) and insertion and removal of the study pessary (SP). The leading edge of the CP and SP were measured in relation to the hymen.

Results: 14 out of 15 subjects were successfully fit with a SP. No subjects were noted to have a change in orientation nor expulsion of their SP. Use of the SP resulted in an aggregate improvement in the mean VAS scores by 1.3 for insertion and 1.4 for removal. Stratified by current pessary type, there was a trend towards increased comfort with insertion and removal of the SP for current Gellhorn users, and increased comfort for removal but not insertion of the SP for current ring users (Figure 2).

Conclusions: Results of this trial validate the mechanical feasibility of a novel collapsible pessary for prolapse support and indicate a trend towards less discomfort with insertion and removal for Gellhorn pessary users. Further investigation of safety and efficacy of this design in a trial powered to detect a difference in the PFDI-20 is warranted.

Figure 1

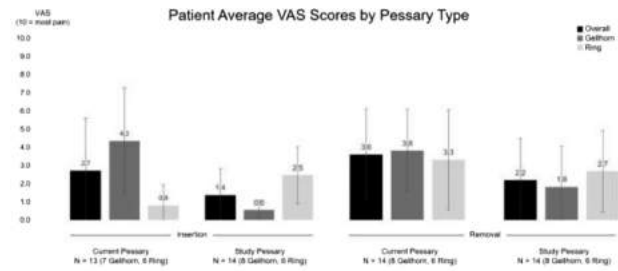

Figure 2

Disclosures: Kris Strohbehn: Reia, LLC: Grant/Research Support: Self, MedScape eMedicine: Chief Editor, Section on FPMRS: Self , Kaitlin Maier: Reia, LLC: Co-Founder with membership stake: Self , Ariana Sopher: Reia, LLC: Co-Founder with membership stake: Self , Meegan Daigler: None, Susan Shinn: None, Paul Hanissian: Reia, LLC: Co-Founder: Self, Reia, LLC: Membership Stake: Spouse/Partner

Short Oral 62
MEASURING PREPAREDNESS FOR SURGERY: VALIDATION OF A NOVEL SURGICAL PREPAREDNESS SURVEY

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Objective: Surgical preparedness improves patient satisfaction and perioperative outcomes, but no validated questionnaires currently exist. We sought to develop and validate the Surgical Preparedness Survey (SPS) to assess patient preparedness for urogynecologic surgery.

Methods: This was a planned ancillary analysis of a trial comparing a preoperative provider-initiated telephone call versus routine counseling alone on patient preparedness for urogynecologic surgery. Patients completed: 1) the non-validated Patient Preparedness Questionnaire (PPQ, 11 items); 2) a version of the Preparedness for Colorectal Cancer Surgery Questionnaire adapted for pelvic floor surgery (PCSQ, 23 items); 3) patient reported outcomes (UDI, POPDI, Satisfaction Decision Scale [SDS], and Decision Regret Scale [DRS]. Face validity was established through expert opinion and patient cognitive interviews. Dimensional validity was determined by factor analysis with varimax rotation with the following criteria: the Kaiser-Guttman rule (Eigenvalues>1.0), loading thresholds of 0.60/.40, screen plots, residuals and partial correlations, and Kaiser-Meyer-Olkin measure of sampling adequacy >0.75, with Cronbach's alpha reported for internal consistency. Discriminant validity was assessed by comparing the group that received a telephone call vs routine counseling. External validity was evaluated using t-tests to compare SPS values between the group that received a telephone call vs routine counseling, correlation of SPS with SDS and DRS, and differences between pre -and post-operative UDI and POPDI scores.

Results: 132 women completed the surveys (mean age 58 +/- 13 years). Three factors with 11 items meeting criteria were identified, representing 1) understanding and preparation; 2) information needs; and 3) catheterization. Cronbach's alpha for domains were acceptable to excellent (Table 1). Mean SPS scores were higher among women who received a telephone call vs women who did not (1.31 +/- 0.32 vs 1.50 + /- 0.45, t (128) = -2.85, p = .005. SPS scores did not correlate with SDS, DRS, and pre- to post- operative change scores of the UDI and POPDI.

Conclusions: The 11-item SPS addresses 3 domains, is internally valid, and demonstrates discriminatory validity. While further criterion validity has not been established, SPS is a more rigorous option than the currently available single item assessment. The SPS can be used to assess patients' preparedness for urogynecologic surgery and identify patients who may require additional preoperative counseling.

Table 1. Final factor loadings and internal consistency for scale dimensions and items

	Cronbach Alpha	Factor Loading
Understanding and Preparation		
I understand the purpose of the planned surgery (what this surgery can accomplish)		0.87022
I understand the benefits of the planned surgery (how this surgery should help me).		0.88123
I understand the risks of the planned surgery (what the chances are of something not going the way my doctor and I want it to go).		0.68470
My doctors and nurses have spent enough time preparing me for my upcoming surgery.		0.83767
Overall I feel prepared for my upcoming surgery.		0.82241
	.930054	
Information Needs		
Overall, I am satisfied with the written information I received about my surgery		0.71156
My needs and wishes regarding surgery have been satisfied		0.62381
I feel prepared for potential causes of pain following surgery		0.72415
Catheterization	0.739796	
I feel prepared to cope with a catheter after the surgery while I am in the hospital		0.73116
I feel prepared to cope with a catheter after the surgery when I am at home.		0.75055
	0.750569	

Disclosures: Gabriela Halder: None, Rebecca Rogers: Uptodate: Writer: Self, IUGA: Editor in Chief: Self, ABOG: Member subspeciality section: Self, Amanda White: None, Heidi Brown: None, Lauren Caldwell: None, Melissa Constantine: None

Short Oral 63
WHO'S 'GRAMMING WHAT? A QUALITATIVE, CROSS-SECTIONAL STUDY COMPARING INSTAGRAM PATTERNS BETWEEN HEALTHCARE PROFESSIONALS AND PATIENTS

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Objective: The objective of this study was to determine the difference in Social Media usage and content patterns as they relate to popular topics in Urogynecology between physicians, allied health professionals (AHP), and patients on Instagram. The primary aim was to study differences in intended engagement audience. The secondary aim was to study thematic differences in Instagram posts based on authorship.

Methods: 12 hashtags derived from the UroGynecology Tag Ontology project were used as search terms to select posts for analysis. The "Top" posts as determined by the Instagram algorithm were analyzed. Dedoose qualitative analytic software was used to code based on authorship, intended audience, and theme by two independent coders. Up to 5 "top" posts from each search term were included. Intended audience was divided into the general public, health professionals, and patients.

Results: Our search yielded 72 posts for analysis. Of these, 50% (n = 36) were written by patients, 39% (n = 28) were written by AHPs (ie. PT), and 11% (n = 8) were written by physicians. 502 excerpts were coded, and 17 themes were identified.

Of the top posts as determined by the Instagram algorithm, none of the physician posts were intended for a patient audience, 51.1% were intended for the general public and 48.9% were intended for other health professionals. AHPS posts were 62% patients, 34% health professionals, and 4% general public. Patients intended 90% of their posts for other patients, 10% for the general public, and 2% for health professionals.

Physician posts were most likely to be coded with "inspirational "(22.2%), medical education (15.6%), and academic peer discussion (11.1%) themes. Among patients, the major themes were personal experience (25.1%), awareness/advocacy (19.9%) and management (10.0%).

When physicians posted to other health professionals, the primary themes were medical education (31.8%) and academic peer discussion (13.6%). When physicians posted to the general public, main themes were advocacy/ awareness (30.4%) and "inspirational" posts (30.4%).

Patients overwhelmingly posted to other patients, and the main themes were personal experience (22%), advocacy/awareness (19%), and management (16%). When AHPs posted to patients, the major themes were education (28.0%), management (16.0%) and advocacy/awareness (14.9%). . When patients posted to healthcare professionals, the major themes were awareness, complications, and dissatisfaction with the healthcare team.

Among the hashtags, #Urogyn was most frequently co-coded with awareness/ advocacy (47%) and #pelvicorganprolapse was most commonly coded with symptoms (17%), risk factors and management (13%) and had the highest content in terms of theme frequency per post. Dissatisfaction with the healthcare team was most frequently coded with #interstitialcystitis.

Conclusions: Conclusion: We found that among the top posts on Instagram, physicians had the lowest number of total posts. Physician posts were exclusively to their peers or to the general public, with no posts intended for patients. AHPs are providing the majority of education and management posts. Finally, patients rarely post content outside of their peers, but when directed at healthcare professionals, these posts express dissatisfaction with the healthcare team, particularly related to interstitial cystitis care.

Disclosures: Coralee Toal: None, Alexa Dzienny: None, Charelle Carter-Brooks: None, Jocelyn Fitzgerald: None

Short Oral 64
PREFERRED METHOD OF TWO WEEK POSTOPERATIVE FOLLOW UP AFTER PELVIC RECONSTRUCTIVE SURGERY. (PHONE CALL VERSUS CLINIC VISIT): A RANDOMIZED CLINICAL TRIAL

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Objective: There is no current standardization of when and how postoperative follow up visits are completed after pelvic reconstructive surgery. Telemedicine visits are favorable amongst patients and have been associated with increased patient satisfaction, less waiting time, and reduced travel costs. The COVID-19 pandemic highlighted the importance of telemedicine visits. Prior to the

pandemic, we designed a Randomized Control Trial with primary aim to investigate if patient satisfaction with telephone visit was non-inferior to clinic visits post operatively at two weeks. Secondary aims were to investigate if the telehealth postoperative visit is a safe alternative to clinic visits.

Methods: This was an IRB approved randomized controlled trial investigating patient satisfaction with the use of telephone visits for two week post surgery follow up. Inclusion criteria included women undergoing pelvic reconstructive surgery. Eligible women were randomized to either a two-week postoperative telephone visit or two-week postoperative clinic visit. Primary outcome was satisfaction with two week postoperative visit as defined by answering "strongly agree" on Likert scale. Sample sizes of 71 women in each group was needed in order to achieve an 80% power to detect a non-inferiority margin difference of 12% between groups.

The clinic visits were completed by physicians and the telephone visits were completed by the clinic nurses with a scripted guideline for all patients including need for triage to clinic visits.

Patients completed a non-validated patient satisfaction questionnaire and patient global impression of improvement at their six-week post op visit.

Statistical analysis was performed using P-value for independent samples t-test/ Wilcoxon-Mann-Whitney for continuous variables or chi-square/Fisher's exact test for categorical variables to determine statistical significance.

Results: A total of 67 patients were recruited between July 2018 to March 2020, 21 patients declined to participate. There were 36 patients in the clinic arm and 31 patients in the telephone arm. Due to the Covid-19 pandemic, most clinic postoperative visits were converted to telehealth visits and elective surgeries were cancelled. The study was halted in March 2020 and did not reach its prior power calculation of 71 per group. There was no difference seen in patient satisfaction with postoperative visits between the two groups. The results of the non-validated questionnaire showed that patients who had telephone visits were likely to be satisfied with telephone visits and would prefer telephone visits in the future when compared to those who had clinic visits. Conversely, patients who had clinic visits were likely to be satisfied with in person visits and were more likely to prefer those in the future. ($P < 0.001$,Table 2)

For validated questionnaires such as PGI-I there was no difference between groups. For secondary outcomes there was no difference in emergency visits, hospital readmissions, or postoperative complications between the two groups. Clinic visits lasted longer than telephone visits (15 mins vs 6 mins, Table 3).

Table 2. Patient Satisfaction

	Clinic (n=36) Mean (std)	Phone (n=31) Mean (std)	P-value
Non-validated questionnaire			
Patient satisfied with 2-week follow up, n (%)	31 (86.1)	22 (73.3)	0.19
NV_Q1	1.1 (0.4)	1.4 (0.9)	0.11
NV_Q2	1.1 (0.4)	1.3 (0.8)	0.25
NV_Q3	1.3 (0.6)	1.2 (0.6)	0.57
NV_Q4	2.9 (1.3)	1.8 (1.3)	0.001
NV_Q5	1.6 (0.8)	2.8 (1.4)	<0.001
PGI-I			
PGI_Q1	1.4 (0.9)	1.5 (0.7)	0.86
PGI_Q2, n (%)	3 (9.1)	7 (22.6)	0.18
PGI-I reported types of complication			
UTI, n (%)	2 (5.6)	4 (12.9)	0.40
Urinary retention, n (%)	1 (2.8)	0	0.99
GI (constipation, bloating), n (%)	0	2 (6.5)	0.21
Other (fatigue, hives, bacteremia), n (%)	1 (2.8)	2 (6.5)	0.59
PSQ-18			
PSQ_Q1	1.3 (0.4)	1.2 (0.4)	0.35
PSQ_Q2	1.2 (0.4)	1.2 (0.7)	0.95
PSQ_Q3	1.3 (0.4)	1.2 (0.4)	0.35
PSQ_Q4	4.2 (0.9)	4.2 (0.7)	0.91
PSQ_Q5	1.7 (1)	1.8 (1)	0.90
PSQ_Q6	1.4 (0.7)	1.4 (0.5)	0.75
PSQ_Q7	3.9 (1)	3.9 (1.1)	0.87
PSQ_Q8	1.3 (0.5)	1.4 (0.6)	0.93
PSQ_Q9	3.7 (0.8)	3.7 (1)	0.73
PSQ_Q10	4.6 (0.6)	4.6 (0.5)	0.97
PSQ_Q11	1.2 (0.4)	1.2 (0.8)	0.98
PSQ_Q12	4.4 (0.7)	4.4 (0.6)	0.66
PSQ_Q13	4.4 (0.8)	4.5 (0.7)	0.61
PSQ_Q14	4.6 (0.9)	4.7 (0.5)	0.58
PSQ_Q15	1.7 (0.9)	1.5 (0.5)	0.23
PSQ_Q16	3.8 (1.2)	3.9 (1)	0.81
PSQ_Q17	4.3 (1)	4.6 (0.5)	0.13
PSQ_Q18	1.8 (1)	1.8 (0.9)	0.87

P-value from independent samples t-test/ Wilcoxon-Mann-Whitney (continuous variables) or chi-square/Fisher's exact test (categorical variables).

Table 3. Secondary Outcomes

Characteristic	Clinic (n=36) n (%)	Phone (n=31) n (%)	P-value
Postoperative visit length (median, Q1-Q3)	15 (11-26)	6 (5-7)	<0.001
Perioperative complications			
Bladder injury	1 (2.8)	0	0.99
Blood transfusion	2 (5.6)	0	0.50
Uncontrolled pain	1 (2.8)	0	0.99
Other	0	1 (3.2)	0.46
Discharged home with catheter	5 (13.9)	6 (19.4)	0.55
Reason for catheter: Bladder injury	1 (2.8)	1 (3.2)	NA
Reason for catheter: Urinary retention/VD	4 (11.1)	5 (16.1)	NA
Number of days with catheter, mean (std)	3.6 (0.5)	3.3 (0.5)	NA
Triaged to clinic visit?	NA	3 (9.7)	NA
Reason for clinic visit			
Vaginal bleeding	NA	3 (9.7)	NA
Concern for infection	NA	1 (3.2)	NA
Visited ED postoperatively?	4 (11.1)	1 (3.2)	0.36
Reason for ED visit			NA
None	32 (88.9)	31 (100)	
Fever	1 (2.8)	0	
Uncontrolled pain	1 (2.8)	0	
Sore throat	1 (2.8)	0	
Syncope	1 (2.8)	0	
Readmitted to hospital?	2 (5.6)	0	0.50
Reason for readmission			NA
Infection	1 (2.8)	0	
Other	1 (2.8)	0	
Postoperative complications			0.55
None	29 (80.6)	22 (71.0)	
Urinary tract infection	6 (16.7)	6 (19.4)	
Surgical site infection	0	2 (6.5)	
Bacterial vaginosis	1 (2.8)	1 (3.2)	

P-value from independent samples t-test/ Wilcoxon-Mann-Whitney (continuous variables) or chi-square/Fisher's exact test (categorical variables).

Conclusions: Two week postoperative telephone visits were well received by patients, resulted in shorter visit length, had high patient satisfaction and PGI scores, and are a safe alternative to clinic visits with no difference in adverse outcomes. Given the recent pandemic, it is important that we continue to design future studies to evaluate telemedicine in patient care for FPMRS.

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Short Oral 65
MEDICARE PATIENT REFERRAL NETWORKS TO PELVIC FLOOR PHYSICAL THERAPISTS ACROSS THE UNITED STATES

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Objective: The purpose of this study is to evaluate the distribution of referrals to Pelvic Floor Physical Therapy throughout the United States and to identify specialties with highest and lowest referral rates . Female pelvic medicine and reconstructive surgeons refer many of their patients to Pelvic Floor Physical Therapy; however, it is not clear what other specialties refer patients to these services. Referral networks to Pelvic Floor Physical Therapy were identified and factors associated with referral connections were determined.

Methods: This retrospective cohort analysis study examined referrals from US Centers for Medicare and Medicaid Services data from 2009-2017. Referral data were available through the non-profit DocGraph and provided with a Freedom of Information Act request via Centers for Medicare and Medicaid Services data. Referrals placed by FPMRS providers to physical therapists were identified. Their National Provider Identifications were cross-referenced to information on DocGraph. Provider patient-sharing networks were modeled using social network analytics. To visualize the resulting flow of patients from referring providers to pelvic floor physical therapists, we encoded the node and edge data and mapped the data on a map of the United States.

Results: There were 18,740 Medicare beneficiaries referred to pelvic floor physical therapists between 2009 and 2017. The mean number of referrals to each physical therapy provider or practice was 82 (SD +/- 46.3). Half of referrals

were made by a general acute care hospital while the remainder were referred by individual female pelvic medicine and reconstructive surgeons, nurse practitioners, colorectal surgeons, and internal medicine physicians in that order. Both the number of referrals to pelvic floor physical therapists and the number of pelvic floor therapists increased each year ($P < 0.01$ for both). Less than ten percent of pelvic floor physical therapists were men. The geographic representation of the patient referral network of Pelvic Floor Physical Therapy is shown in figure 1. The size of the nodes is proportional to the log of incoming referrals. As we applied a force-directed algorithm, the map reveals that pelvic floor physical therapists often work in groups and treat patients in their vicinity. The modularity results to 0.83 as computed from the communities determined via the walktrap community finding algorithm. This indicates that the network is strongly fractured. A fractured network is one where there are dense connections between the nodes within communities but sparse connections between nodes in different communities.

Conclusions: Our network analysis of Pelvic Floor Physical Therapy referrals in Medicare patients across the US shows fractured networks with dense geographic connections in some areas and sparse in others. General acute hospitals placed the highest number of referrals followed by FPMRS. Internal medicine placed the lowest number of referrals. The number of referrals to Pelvic Floor Physical Therapy increased each year as did the number of pelvic floor physical therapists.

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Short Oral 66
THE IMPACT OF PREOPERATIVE PAIN ON OUTCOMES AFTER VAGINAL RECONSTRUCTIVE SURGERY AND PERIOPERATIVE PELVIC FLOOR MUSCLE TRAINING

E. Sappenfield[1], P. Tulikangas[2], R. Wang[1]. *Hartford Hospital[1], Urogynecology Associates, Hartford Hospi[2]*

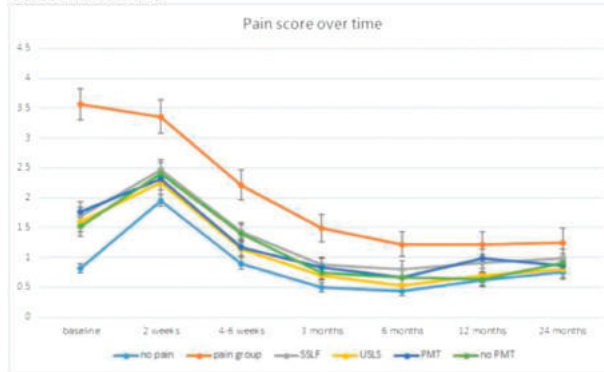
Objective: To compare outcomes after vaginal reconstructive surgery and perioperative pelvic muscle training between women with and without preoperative pain.

Methods: Baseline and postoperative data were analyzed from the Operations and Pelvic Muscle Training in the Management of Apical Support Loss (OPTIMAL) multicenter trial. The trial includes women with stage 2-4 pelvic organ prolapse and stress urinary incontinence for which a vaginal surgery and a midurethral sling planned. The primary study design was a 2x2 randomized factorial design: a surgical intervention (sacrospinous ligament fixation (SSLF) versus uterosacral vaginal vault suspension (USLS)) and a perioperative behavioral intervention (pelvic floor muscle training (PMT) versus usual care). Participants completed Surgical Pain Scales (SPS) and Pelvic Floor Distress Inventory (PFDI) questionnaire at baseline. Preoperative pain was defined as a response of "5" or greater on pain SPS at rest or answering "moderately" or "quite a bit" on the PFDI question "do you usually experience pain in the lower abdomen or genital area?" Outcomes and complication rates were compared between women with and without preoperative pain.

Results: Participants in the OPTIMAL trial included 109 women with pain and 259 women without pain. For women with pain, 54 women were assigned to USLS, 55 to SSLF, 56 to PMT, and 53 to usual care. Women with pain were younger than women without pain (55.2 ± 10.2 vs 58.3 ± 10.7; $P = 0.006$), and more likely to be of Hispanic ethnicity (33.9% vs 14.3%, $P < 0.001$). Persistent neural injury (pain at 4-6 weeks) was more common in women with pain than without pain (4.6% vs 1.2%, $P = 0.04$). Women with pain had greater improvement on surgical pain scale scores post-surgery at 24 months (-2.3 ± 2.4 vs -0.2 ± 1.4, $P < 0.001$). Similar improvements were seen comparing women with pain who underwent USLS vs SSLF and PMT vs usual care. Persistent neural injury was more common when SSLF was performed compared to USLS for all women (4.0% vs 0.5%, $P = 0.03$). Among women with pain who underwent a SSLF, the PMT group had a greater reduction in pain over 24 months compared to those in the usual care group (-3.0 ± 2.3 vs -1.3 ± 2.1, $P = 0.004$). For women with pain, pain on SPS scores was persistent or worse in 41% at 12 months, and 44% at 24 months.

Conclusions: Women with preoperative pain experience significant improvements in pain and pelvic floor symptoms with vaginal reconstructive surgery. Pelvic floor muscle training perioperatively may be beneficial for patients with pain and planned sacrospinous ligament fixation.

Figure 1. Pain Scores by Group



Disclosures: Elisabeth Sappenfield: None, Paul Tulikangas: None, Rui Wang: None

Short Oral 68
THE IMPACT OF METHENAMINE HIPPURATE ON BLADDER REPAIR AND UROTHELIAL INTEGRITY IN A UTI MICE MODEL

C. Chu[2], J. Sawhill[1], I. Mysorekar[1]. *Washington University School of Medicine[1], UNC FPMRS[2]*

Objective: Antibiotics are used to treat UTIs, the most common bacterial infection in women, but overuse has resulted in resistance. Non-antibiotic approaches to prevention of UTIs such as methenamine hippurate, a bacteriostatic antiseptic that kills bacteria by creating formaldehyde in the urine, show promise clinically. However, a better understanding of the mechanism by which methenamine works to prevent UTIs may be useful in making decisions on how and when to use methenamine for prophylaxis. Prior studies have shown that non-antibiotic prophylaxis such as vaginal estrogen or d-mannose may prevent UTIs by limiting bladder inflammation. We hypothesize that, in addition to bacteriostatic activity, methenamine hippurate may work by promoting barrier function and decreasing bladder inflammation. We tested this hypothesis by examining the effect of methenamine on the bladder in a known aged mouse UTI model.

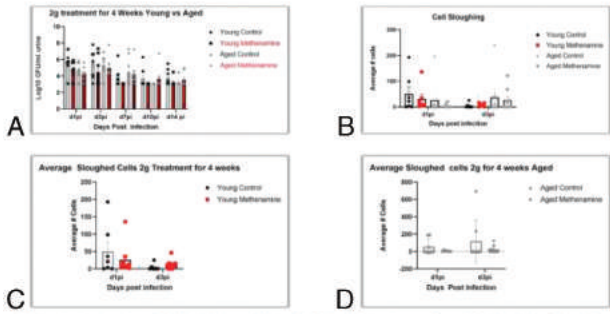
Methods: We treated young mice and aged 18 month old mice with either 4 weeks of methenamine hippurate or water (control). At the end of 4 weeks, UTI was induced transurethrally using 10^7 colony forming units of UTI89, a human UPEC cystitis isolate. Urine was collected for 2 weeks before the mice were sacrificed. We measured urine cytology to evaluate epithelial sloughing and immune cell influx. We also determined urinary bacterial persistence by examining bacterial colony forming units in the urine for 2 weeks. We used the FITC-Dextran permeability assay to examine urothelial permeability of the bladder at 2 weeks post-infection. Two way ANOVA was used to compare continuous variables between the groups.

Results: Between methenamine treated and untreated groups of both young and aged mice, there was no significant difference in bacterial clearance or urothelial sloughing (Figure 1, $P < 0.05$). Notably, however, FITC-Dextran assay showed significantly decreased urothelial permeability in methenamine treated groups compared to untreated groups (Figure 2).

Conclusions: Methenamine hippurate appears to improve urothelial barrier function without impacting bladder inflammation in young and aged mice. Fortified

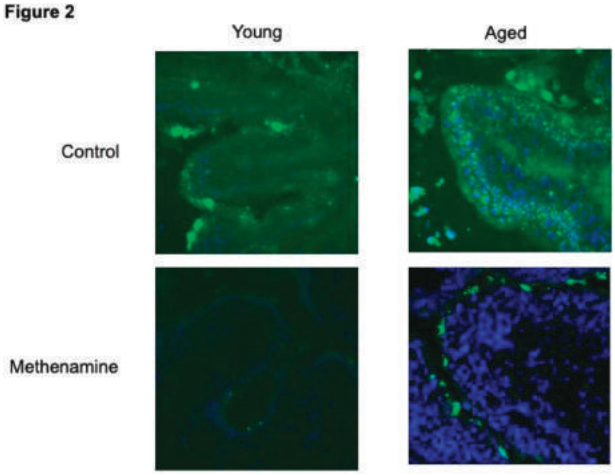
barrier function with methenamine hippurate treatment could work synergistically with other non-antibiotic prophylaxis to further improve efficacy of UTI prevention.

Figure 1



Methenamine hippurate does not affect bacterial clearance 14 days after infection (A). It also does not affect urothelial sloughing 1 and 3 days after infection (B), in either young (C) or aged (D) mice.

Figure 2



Methenamine hippurate does limit urothelial permeability in both young and aged mice compared to controls.

Disclosures: Jessica Sawhill: None, Indira Mysorekar: None, Christine Chu: None

Short Oral 69
VARIABLES ASSOCIATED WITH SYMPTOM IMPROVEMENT IN OLDER WOMEN SEEKING CARE FOR URINARY TRACT INFECTION WHO ARE MANAGED EXPECTANTLY

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Objective: To determine variables associated with symptom improvement while awaiting urine culture (UCx) results in a cohort of older women presenting with urinary tract infection (UTI) symptoms. We additionally sought to evaluate the proportion of subjects that experienced adverse sequelae of delayed treatment, specifically pyelonephritis or urosepsis.

Methods: This was a cross-sectional analysis of women seeking care for UTI symptoms at an academic medical center from November 1, 2020 to March 3, 2021. Per clinical protocol, symptom bother was ascertained with the Urinary Tract Infection Symptom Assessment (UTISA) administered prior to urine culture (UCx) collection and immediately prior to relaying UCx results to patients. All patients were encouraged to increase hydration and use over the counter medications for symptom relief as needed while awaiting results; empiric antibiotics were not prescribed. "No Growth" and "Mixed Flora" results were considered as negative UCx. We sought to identify factors associated with symptom improvement defined as mean change in total UTISA score. Variables are presented as either frequencies (proportions), median (IQR) or mean (standard deviation). Regression models were used to evaluate change in total UTISA, controlling for confounders.

Results: Of 122 women who both sought care for UTI symptoms and were not provided empiric antibiotics, mean age was 65.2 (SD 15.4) years; 61(50.8%) reported a history of recurrent UTI (rUTI). Cultures were resulted in a median of 3 days (IQR 2-4 days), 76 (62.3%) were positive. Paired baseline and post-culture UTISA scores were available from a subset, 78/122 (64.0%), of women. Overall, 20/78 (25.6%) of those with paired data reported symptom improvement, 43/78 (55.1%) were the same and 15/78 (19.2%) reported worse symptoms. Between these groups, 14/20 (80%) reporting symptom improvement, 40/43 (93.0%) with unchanged symptoms, and 15/15 (100.0%) with worsening symptoms, had a positive UCx ($P = 0.008$). Mean change in total UTISA score was -0.44 (SD 3.81). Greater symptom improvement, as measured by change in total UTISA, was associated with a negative UCx [-3.89 (SD 3.60) v. -0.06 (SD 3.75); $P = 0.02$]. When controlling for baseline UTISA scores, age, and history of rUTI, symptom improvement was still greater in those with a negative UCx (β -3.32, SE 2.46, p = 0.03). In sensitivity analysis, those with missing follow-up UTISA were imputed as the available mean, with similar results [negative UCx (β -1.10, SE 1.22, $P = 0.03$)]. Baseline score on the "dysuria" domain of UTISA was also significant in this model (β -0.58, SE 0.23, $P = 0.01$). No women developed pyelonephritis or urosepsis in the interval between initiating care for UTI symptoms and when culture results were acted upon; nor within the subsequent 30-days.

Conclusions: UTI symptoms were either stable or improved in 80% of community dwelling women awaiting results of urine cultures with greater likelihood of negative culture in those with symptom improvement. Our finding that expectant management is reasonable and safe should be confirmed in a larger, more diverse population.

Disclosures: Alexandra Melnyk: None, Nicole Meckes: None, Halina Zyczynski: None, Marina Guirguis: None, Megan Bradley: None

Short Oral 70
DETECTION OF BACTERIA IN BLADDER MUCOSA OF ADULT WOMEN

A. Wolfe[1], R. Evens, T. Overholt[2], C. Roese Mores[3], D. Rademacher, T. Halverson[1], R. Limeira, C. Matthews[2], G. Badlani[4], R. Xu[5], L. Brubaker[6], S. Walker[7]. *Loyola University Chicago[1], Wake Forest Baptist Health[2], ETH Zurich[3], Wake Forest University Baptist Medical Center[4], Wake Forest Baptist Medical Center[5], University of California San Diego[6], Wake Forest University Health Sciences[7]*

Objective: Interstitial cystitis/bladder pain syndrome (IC/BPS) is a chronic urological condition diagnosed in nearly 8 million women in the US. Whether the urinary microbiota plays an etiologic role remains controversial. Most studies have assessed the microbiota of IC/BPS patients with voided or catheterized urine as a proxy for bladder urothelium and although urine is a convenience sample, it may not be a true reflection of the bladder microbiota. The use of bladder biopsy tissue may provide a more accurate, and thus more clinically relevant, picture of the bladder microbiota.

Methods: Bladder biopsy tissues were obtained from: (a) 30 women with IC/BPS (18-80 y/o) via cystoscopically guided cold-cup biopsy following therapeutic bladder hydrodistension, and (b) 10 non-IC/BPS women undergoing pelvic organ prolapse repair. To detect bacteria, technical duplicates of each RNAlater-preserved biopsy were subjected to 16S rRNA gene sequencing. To visualize bacteria, paraformaldehyde-fixed, paraffin-embedded biopsies were subjected to combined fluorescence in situ hybridization (FISH) and fluorescence immunohistochemistry (IHC) using confocal microscopy.

Results: Bacteria were detected in at least one technical replicate of every biopsy (Fig 1). The most abundant genus was *Staphylococcus* (light blue), followed by *Lactobacillus* (dark blue); *Escherichia* (gold) was common but not abundant. Combined FISH/IHC reproducibly detected perinuclear clusters of 16S RNA in epithelial cells of human bladder biopsy tissue (Fig 2). There was no significant difference between IC/BPS patients and controls ($P > 0.05$).

Conclusions: In this study we were able to detect and visualize bacteria associated with the bladder urothelium in 40 women; we conclude that urothelial and urinary microbiota are similar but not identical (e.g., *Lactobacillus* is more abundant in urine; *Staphylococcus* is more abundant in the urothelium). We did not find evidence that urothelial microbiota differs between women with IC/BPS and non-IC/BPS controls. Much larger studies are indicated.

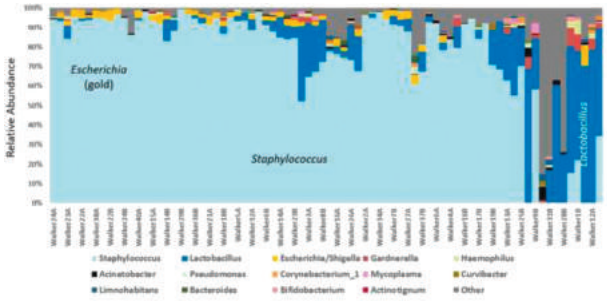


Figure 1. 16S rRNA gene sequence results of biopsies. Genomic DNA was extracted from each biopsy and the V4 region of the 16S rRNA gene was amplified and sequenced in duplicate. To control for contaminants, extraction and amplification controls included. Resultant data were analyzed using DADA2, and contaminants removed using *decontam* and the control data. All sequence-positive duplicates are shown; duplicates almost always concurred.

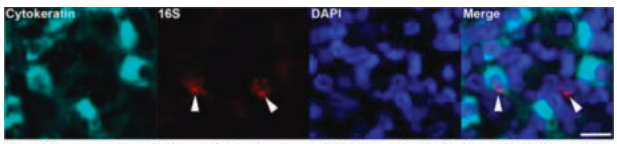


Figure 2. A representative confocal image of perinuclear clusters of 16S RNA in epithelial cells of human bladder biopsy tissue. Combined fluorescence in situ hybridization (FISH) and fluorescence immunohistochemistry were applied to a formalin-fixed, paraffin embedded human bladder biopsy sample to visualize cytokeratin, an epithelial cell marker, 16S, a pan bacterial cell marker, and 4′,6-diamidino-2-phenylindole (DAPI), a pan nuclear marker. Arrowheads point to clusters of 16S RNA fluorescence. The scale bar is equal to 10 μm and is valid for all panels.

Disclosures: Alan Wolfe: Kimberly Clark Corporation: Grant/Research Support: Self, Pathnostics: Consultant: Self, Urobiome Therapeutics: Consultant: Self, VBTech: Grant/Research Support: Self , Robert Evens: None, Tyler Overholt: None, Carine Roese Mores: None, David Rademacher: None, Thomas Halverson: None, Roberto Limeira: None, Catherine Matthews: None, Gopal Badlani: None, Raymond Xu: None, Linda Brubaker: JAMA: Associate Editor: Self, FPMPRS Journal: Editor in Chief: Self, Up To Date: Section Editor: Self , Stephen Walker: None

Short Oral 71
MICROBIOLOGIC DETERMINANTS OF SELF-PERCEIVED BLADDER HEALTH

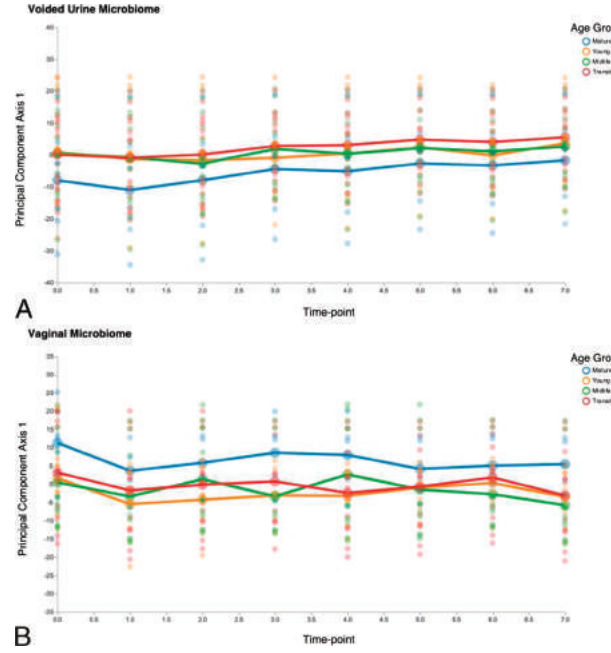
M. Mueller[1], P. Das[2], A. Dieter[3], D. Dwarica[4], J. Shepherd[5], W.T. Gregory[6], C. Amundsen[7], A. Kirby[8], L. Brennaman[4], K. Kenton[9]. *Northwestern University[1], University of California, San Diego[2], UNC Chapel Hill[3], University of Missouri[4], Quinnipiac University[5], Oregon Health & Science University[6], Duke University[7], UW Medicine[8], Northwestern[9]*

Objective: To longitudinally define the genito-urinary (GU) microbiome and assess its relationship with self-perceived bladder health during distinct life phases.

Methods: Women without lower urinary tract dysfunction (LUTD) or symptoms (LUTS) were recruited from 6 clinical sites and assessed every 6 weeks for 1 year. Voided urine and vaginal samples were routinely collected. Self-perceived bladder health was assessed with the LURN Comprehensive Assessment of Self-Reported Urinary Symptoms (CASUS) tool. We defined four life phases as follows: Young (18-25 years, nulliparous), Midlife (35-45 years, menstruating), Transitional (46-60 years, peri-menopausal), Mature (>60 years, not using vaginal and/or systemic hormone replacement therapy). Samples were extracted for their DNA and the V4 region of the 16S rRNA gene was amplified with region-specific primers. The 16S rRNA sequencing on an Illumina NovaSeq platform was conducted at the IGM Genomics Center, University of California, San Diego. Microbial beta-diversity was calculated using DEICODE to identify microbial taxa that cluster the samples. Longitudinal volatility analysis was performed using the gemelli plugin. Log-abundance ratios of microbial features were explored and visualized in Qurro.

Results: 54 (N = 16 young, N = 16 Midlife, N = 15 Transitional, N = 7 Mature) women were enrolled and provided baseline data. Most women continued to self-perceive bladder health throughout the study as assessed by CASUS (93-98%). Temporal-based microbial diversity of voided urine and vaginal microbiome remained relatively stable over one year in all subjects. Samples from mature women were distinct and microbially diverse from that of young, midlife, and transitional women with genera of Gardnerella, Cupriavidus, and Dialister contributory to the microbial features of mature microbiome (Figure 1). The mature GU microbiome was statistically significantly different($P < 0.0001$) from the midlife, transitional and young microbiome for the log ratio of: Gardnerella and Cupriavidus (in the numerator), and Lactobacillus (in the denominator) for voided samples, and Gardnerella and Dialister (in the numerator), and Lactobacillus (in the denominator) for vaginal samples. Differences in the GU microbiome were also demonstrated via compositional factor tensorization between women reporting urinary frequency subjectively by CASUS responses or objectively on bladder diary compared to women without urinary frequency.

Conclusions: Over one year the GU microbiome remained stable in women across the lifespan, and differences were seen with respect to life phase and self-reported LUTS.



Disclosures: Margaret Mueller: None, Promi Das: None, Alexis Dieter: None, Denicia Dwarica: None, Jonathan Shepherd: None, W. Thomas Gregory: None, Cindy Amundsen: None, Anna Kirby: None, Lisa Brennaman: None, kimberly Kenton: None

Short Oral 72
REDUCING URINARY TRACT INFECTIONS AFTER PELVIC SURGERY: A PROSPECTIVE QUALITY IMPROVEMENT STUDY

R. Wang[1], T. Scutari[2], E. Tunitsky-Bitton[1]. *Hartford Hospital[1], University of Connecticut School of Medicine[2]*

Objective: Post-operative urinary tract infections (UTIs) are common, especially among patients with indwelling urinary catheters. High rates of antibiotic treatments of UTIs contribute to increasing levels of antibiotic resistance. This study implements and assesses the effects of a quality improvement protocol within a clinical practice setting aimed at decreasing post-operative UTIs and associated antibiotic use.

Methods: This was a non-controlled quality improvement study with pre- and post-intervention comparisons. Our intervention protocol was aimed at patients diagnosed with post-operative urinary retention requiring urinary catheters: (1) shortening the time to repeat office voiding trial from 5-7 days to 3-5 days for pelvic reconstructive surgeries, and from 3-5 days to 1-3 days for anti-incontinence procedures; (2) instructing patients to drink 2 L (67 oz) of water daily until 3 days after the office voiding trial; (3) educating nurses to avoid sending routine urine cultures at the time of voiding trials. Our primary outcome was the percentage of post-operative patients with urinary catheters who received antibiotic treatment for UTIs within 6 weeks. We compared two cohorts of patients, prior to and after the implementation of this intervention. Secondary outcomes included rates of failing office voiding trial, patients with UTI symptoms/urine cultures sent, adherence to increased hydration, and resource utilization.

Results: The study included 31 patients prior to intervention and 40 patients after the intervention. The two cohorts had similar demographic and clinical characteristics. Rates of antibiotic treatment for UTIs decreased from 65% to 40% after the intervention ($P = 0.04$). Rates of UTI symptoms and urine cultures sent also decreased significantly ($P = 0.04$ and $P = 0.005$). Rates of failing office voiding trials were similar ($P = 0.14$). There was high adherence (84%) to increased hydration. The average number of phone calls decreased by 43% ($P = 0.003$), and there were no increases in office visits ($P = 0.48$) or

emergency room visits ($P = 0.29$). Multivariate regression showed that UTIs were 2.04 times more likely prior to the intervention than after the intervention.

Conclusions: This quality improvement intervention was effective in reducing antibiotic treatment for post-operative UTIs among patients with urinary catheters. There was good adherence to the protocol and a reduction in utilization of healthcare resources.

Figure 1. Change in percentage of post-operative patients requiring urinary catheters receiving antibiotics for urinary tract infections before and after the quality improvement intervention. Error bars show standard errors.

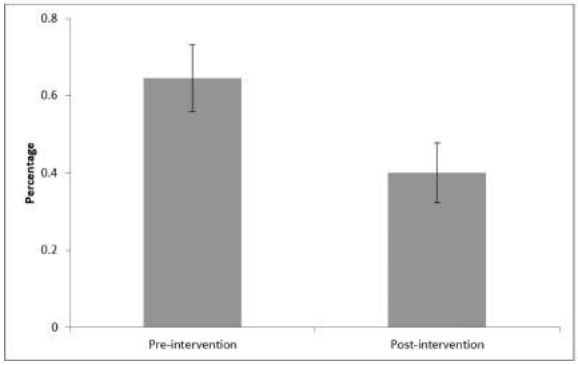


Table 1. Primary and secondary outcomes comparing groups with and without quality improvement intervention*

	Pre-intervention (N=31)	Post-intervention (N=40)	P value
Received antibiotics for UTI	20 (64.5)	16 (40.0)	0.040
Number of courses of antibiotics†	1.5 ± 0.6	1.4 ± 0.5	0.512
Days with indwelling catheter	7.8 ± 6.2	6.2 ± 4.5	0.211
UTI symptoms prior to voiding trial	16 (51.6)	11 (27.5)	0.038
Urine culture sent at voiding trial	16 (51.6)	8 (20.0)	0.005
Number of phone calls	3.0 ± 2.3	1.7 ± 1.3	0.003
Number of office visits	2.7 ± 0.9	2.6 ± 1.0	0.485
Number of ED visits	0.1 ± 0.3	0.2 ± 0.6	0.294

*Data shown as n (%) or mean ± standard deviation. UTI: urinary tract infection; ED: emergency department

†Among patients treated with antibiotics for urinary tract infections

Disclosures: Rui Wang: None, Taylor Scutari: None, Elena Tunitsky-Bitton: None

Short Oral 73
D-MANNOSE TREATMENT DAMPENS INFLAMMATION AND REDUCES EPITHELIAL SHEDDING IN URINARY TRACT MUCOSA

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Objective: Urinary tract infections (UTIs), the most common infection among women, are problematic because they frequently recur despite appropriate antibiotic treatment. Recurrent UTIs (rUTI) are most common in postmenopausal women, and this group is at high risk of antibiotic-related complications; identifying effective non-antibiotic prevention strategies is greatly needed. In addition, the finding of cystitis cystica (CC) on cystoscopy in rUTI patients may represent a chronic inflammatory state in the bladder and is associated with more frequent rUTI episodes. D-mannose is a simple sugar that is thought to prevent UTI recurrence by binding the adhesin FimH on the most common uropathogens (uropathogenic E. coli (UPEC) and others) to prevent attachment to the bladder epithelium. However, the impact of D-mannose on inflammation is not known. Our objective is to assess the effect of D-mannose on the inflammatory state in both human samples and in an aged mouse model. We hypothesize that: 1) D-mannose may curtail the infection–inflammation–re-infection cycle, and 2) rUTI patients with CC have worse outcomes than those without CC; D-mannose may be especially effective in these patients.

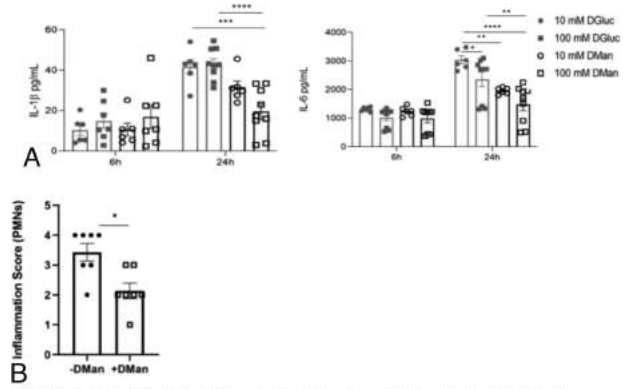
Methods: We conducted a cross-sectional analysis of rUTI patients with cystoscopy performed by our FPMRS department between 2015 and 2018. We collected basic demographic information, rUTI history, date of D-mannose initiation, subsequent symptomatic UTI episodes, and identified presence or absence of CC on cystoscopy report. Primary outcome included associations between presence of CC and time until UTI recurrence after D-mannose initiation and number of subsequent rUTI episodes. Secondary outcomes included associations between presence of CC and number of UTI episodes in the previous 6-12 months, and other demographic and clinical variables.

Bladder epithelial cells [(BECs) from a cancerous human cell line (5637)] were pretreated with varying doses of D-glucose or D-mannose before infection with UPEC. Aged female mice were given 1.1 M D-mannose in their drinking water for two weeks before given a UTI. Urines were collected for bacterial quantification, inflammatory scoring, and semi-quantitative shedding counts. Enzyme linked immunosorbent assays for inflammatory cytokines were performed on serum/plasma from rUTI patients before and after 30 days or more of continuous D-mannose use.

Results: A total of 13 patients with CC and 14 patients without CC were included for analysis. CC patients had significantly more historic UTI episodes compared to patients without CC (4.7 vs 2.9, $P < 0.05$). However, there was no significant impact after D-mannose treatment.

D-mannose treatment in vitro dampened inflammation in BECs, reducing the secretion of inflammatory cytokines (*$P < 0.05$, ** $P < 0.01$, *** $P < 0.001$, **** $P < 0.0001$). In aged female mice, D-mannose dampened inflammation in mouse bladders by reducing infiltration of polymorphonuclear leukocytes into the bladder and decreased basal rates of urothelial cell sloughing found in urine (*$P < 0.05$). Inflammatory cytokine secretion did not differ significantly after D-mannose treatment in human samples.

Conclusions: Recurrent UTI patients with cystitis cystica have more frequent UTI episodes. D-mannose treatment dampens inflammation by reducing secretion of inflammatory cytokines in vitro and decreasing urine inflammation scores and urothelial shedding in vivo. Thus, D-mannose is a promising non-antibiotic therapy that warrants further mechanistic study in rUTI women.



D-mannose dampens inflammation in vitro and in vivo. (A) D-mannose treated BECs showed reduced secretion of inflammatory cytokines on a dose dependent curve compared to glucose treated (3 rounds of experiments, n=5-9). (B) D-mannose treated mice had a lower urine inflammation score indicating less infiltration of polymorphonuclear cells into bladder and urine (n=3-4 per experimental group). Bars represent mean ±SEM *P<0.05, **P<0.01, ***P<0.001, ****P<0.0001. Unpaired student's t-tests were used to compare two parameters and 2-way ANOVA with Tukey's multiple comparison test was used to com compare multiple parameters.

Disclosures: Kimberley Chiu: None, Amy Mora: None, Jerry Lowder: None, Indira Mysorekar: None

Short Oral 74
PREVALENCE AND BOTHER OF POST-VOID DRIBBLING & URINE SPRAYING IN A GENERAL GYNECOLOGY POPULATION

C. Hicks[1], A. Hare[2], D. Rahn[2]. *UT Southwestern Medical Center[1], University of Texas Southwestern Medical Center[2]*

Objective: Post-void dribbling has previously been reported in women with urinary incontinence and among those who present to urogynecology clinics. However, there are sparse data regarding this symptom in the general gynecology population. The objective of this study is to assess prevalence and bother of post-void dribbling, urine spraying (i.e., deviation of the urine stream), and other bothersome voiding behaviors in a general gynecology population.

Methods: This is a single center anonymous cross-sectional study of women presenting to academic general gynecology practices for benign gynecologic care or well-woman visits; patients were not presenting for urinary incontinence or voiding dysfunction. IRB exemption was obtained. A questionnaire was used to assess the presence and perceptions of voiding behaviors and urinary symptoms with an emphasis on post-void dribbling and urine spraying. The questionnaire included both the validated Questionnaire for Urinary Incontinence Diagnosis (QUID)[1] and non-validated questions. Presuming a post-void dribbling rate of 4.2% in the general adult women population,[2] confidence interval of ±3%, and a conservative design effect (DEFF) of 2.0, 344 respondents were needed.

Results: A total of 355 non-pregnant adult women were surveyed, mean age 43.2y (SD 12.9). The sample was 53% white, 27% black, 4% Asian, and 16% other; 39% Latina; 68% parous; and 29% postmenopausal. The prevalence (95% CI) of post-void dribbling was 186 of 327, or 57% (52-62%), and of these, was at least *somewhat bothersome* in 37.1% but *moderately-to-severely bothersome* in just 7.5% (Table 1). Only 19% of respondents (66/352) thought post-void dribbling was a normal symptom.

Urine spraying occurred in 222 of 333, or 67% (62-72%), and of these, was at least somewhat bothersome in 53% but moderately-to-severely bothersome in 17% (Table 1). Thirty-nine percent (134/343) of respondents thought urine spraying was a normal symptom.

Other urinary symptoms are presented in Table 2. Interestingly, about 1 in 5 women of this sample had stress urinary incontinence or urgency urinary incontinence per QUID criteria.

Conclusions: This survey-based cross-sectional study of women seeking benign gynecologic care shows a high prevalence of post-void dribbling and urine spraying symptoms. However, moderate-to severe bother was relatively uncommon. These findings are valuable for patient counseling and for reassuring patients about the frequency of particular voiding behaviors.

[1] Bradley CS, et al. *Am J Obstet Gynecol*. 2005;192: 66–73

[2] Temml C, et al. *Neurourol Urodyn*. 2000;19(3):259-271.

Table 1. Prevalence of Post-void Dribbling and Urine Spraying

Question	No. responding	"Yes" No. (%, 95% CI)	Of those with symptom, at least *somewhat bothered*	Of those with symptom, at least *moderately bothered*
1. When I urinate, finish wiping, and stand up, I sometimes have urine run down my leg immediately afterwards.	327	186 (**56.9%**, 51.5-62.2)	37.1%	7.5%
2. I have had urine dribble with walking, bending, or sitting within ten minutes of finishing urinating.	335	184 (**54.9%**, 49.6-60.3)	35.9%	12.5%
3. Dribbling after urination is (*or would be*) bothersome to me.	329	241 (**73.3%**, 68.5-78.0)	75.1%	47.7%
4. When I urinate, sometimes my stream sprays (that is, the stream deviates or is not straight).	333	222 (**66.7%**, 61.6-71.7)	52.7%	17.1%
5. Urine spraying is (*or would be*) bothersome to me.	331	250 (**75.5%**, 70.9-80.2)	66.7%	36.5%

Table 2. Other Abnormal Urinary or Pelvic Floor Dysfunction Symptoms

Symptom	No. responding	"Yes" No. (%, 95% CI)
Daytime urinary frequency (>6 voids)	350	221 (**63.1%**, 58.1-68.2)
Waking ≥2x overnight to void	354	112 (**31.6%**, 26.8-36.5)
Stress UI (per QUID criteria)	355	82 (**23.1%**, 19.0-27.8)
Urgency UI (per QUID criteria)	355	70 (**19.7%**, 15.6-23.9)
Mixed UI (per QUID criteria)	355	44 (**12.4%**, 9.0-15.8)
Using medication for bladder control	355	8 (**2.3%**, 0.7-3.8)
Prolapse (seeing/ feeling bulging in vaginal area)	353	25 (**7.1%**, 4.4-9.8)
Pelvic pain (high tone pelvic floor, pelvic pain complaint, or dyspareunia)	355	102 (**28.9%**, 24.0-33.4)

Disclosures: Christina Hicks: None, Adam Hare: None, David Rahn: None

Short Oral 75
THE PREVALENCE AND BURDEN OF NOCTURNAL POLYURIA IN WOMEN IN THE US: RESULTS FROM THE EPIDEMIOLOGY OF NOCTURNAL POLYURIA (EPINP) STUDY

E. Mueller[2], E. Bacci[1], J. Weiss[3], JLH Ruud Bosch[4], B. Chughtai[5], M. Rosenberg[6], J. Simeone[1], F. Andersson[7], K. Juul[8], K. Coyne[1], C. Chapple[9]. *Evidera[1] Loyola University Chicago, Loyola University Medical Center[2], SUNY Downstate Health Sciences University[3], UMC Utrecht[4], Weill Cornell Medicine[5], Mid Michigan Health Centers[6], Ferring Pharmaceuticals A/S[7], Ferring[8], Sheffield Teaching Hospitals[9]*

Objective: Previous research of the prevalence and impact of nocturnal polyuria (NP), an overproduction of urine during sleep, as a cause of nocturia has focused on men (M). This large epidemiologic study used a US population-representative sample women (W) and M ≥ 30 years to assess the prevalence and burden of NP (The EpiNP Study; NCT: 04125186).

Methods: Participants were recruited via an online panel. Consenting participants completed the baseline EpiNP survey online (Lower Urinary Tract Symptoms [LUTS] Tool, comorbidities and other measures of burden). All who reported ≥2 voids/night and a random sample of 100 respondents each reporting 0 or 1 void/night were sent urine collection containers to complete a 3-day web-based bladder diary recording the time, volume, and urgency rating of each void. NP was defined by calculating the proportion of urine production that occurred during nocturnal hours using nocturnal urine production of >90 mL/h (NUP90) and Nocturnal Polyuria Index (NPI33) threshold of >0.33 per the International Continence Society report on terminology for nocturia (2019). Crude prevalence and extrapolations to the US general population were calculated from completed bladder diaries for subgroups by sex and age: NP Syndrome (NPSyndrome; NP without underlying causes), NP with symptoms suggestive of overactive bladder (NPOAB), NP due to comorbidities (diabetes, hypertension, heart disease, sleep apnea), and no NP (did not meet NUP90 or NPI33). The proportion of participants reporting burden associated with nocturia as reported in the LUTS Tool was also calculated.

Results: 10,190 participants completed the baseline survey (5,290 W). Mean age (range) for women was 54.9 (30-95) years; 1,841 (34.8%) reported ≥2 nocturnal voids. 1,048 W reporting 0, 1, or 2+ voids per night completed the bladder diary for 3 days (47.7% response rate among invited). Overall extrapolated NP prevalence in W using NUP90 was 25.7% and 49.9% when using NPI33. Overall NPSyndrome prevalence was 5.5% for NUP90 and 13.0% for NPI33 (Table). NPSyndrome prevalence decreased with age as NP due to other causes increased with age; NPOAB was the most common (NUP90: 15.4%; NPI33: 29.6%). The percentage of women rating they were bothered ≥ somewhat" by their nocturia ranged from 45.2% to 67.3% among the NP subgroups. Symptom bother ratings were highest in the No NP and NPOAB groups.

Conclusions: This is the first population-based prevalence study of NP in women. NP is highly prevalent in women starting already at age 30; multifactorial causes should be considered, particularly as age increases.

Table. NUP90 and NPI33 Weighted Prevalence and Measure of Burden

Groups	NUP90 NP Syndrome	NUP90 NPOAB	NUP90 NP/ Comorbid	NUP90 No NP	NPI33 NP Syndrome	NPI33 NPOAB	NPI33 NP/ Comorbid	NPI33 No NP
Women (Overall)	**5.5%**	**15.4%**	**4.8%**	**74.3%**	**13.0%**	**29.6%**	**7.3%**	**50.1%**
30-44	6.2%	12.8%	4.5%	76.5%	14.6%	24.4%	7.1%	53.9%
45-64	5.6%	15.6%	4.9%	73.9%	12.8%	30.0%	7.3%	49.9%
65-74	4.7%	17.9%	4.9%	72.5%	12.3%	33.0%	7.6%	47.0%
75+	4.5%	18.4%	5.1%	72.0%	10.9%	36.8%	7.6%	44.7%
LUTS Bother ≥ Somewhat	56.8%	64.2%	45.2%	65.9%	50.5%	67.3%	51.5%	66.4%

Disclosures: Elizabeth Bacci: None, Elizabeth Mueller: None, Jeffrey Weiss: Ferring: Consultant: Self, Evidera: Consultant: Self , JLH Ruud Bosch: Ferring AG: Consultant: Self , Bilal Chughtai: None, Matt Rosenberg: Ferring: Consultant: Self , Jason Simeone: Ferring: Consultant: Self , Fredrik Andersson: Ferring Pharmaceuticals: Employee: Self , Kristian Juul: Ferring Pharmaceuticals: employee: Self , Karin Coyne: None, christopher chapple: None

Short Oral 76
NATURAL HISTORY OF LOWER URINARY TRACT SYMPTOMS IN TREATMENT-SEEKING WOMEN WITH PELVIC ORGAN PROLAPSE

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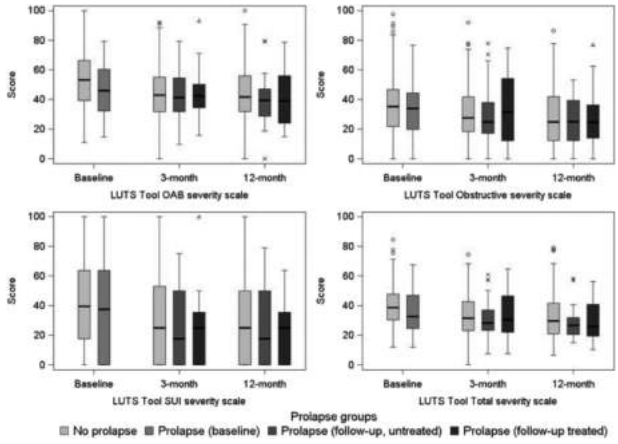
Objective: The natural history of overactive bladder (OAB) and other lower urinary tract symptoms (LUTS) in women with pelvic organ prolapse (POP), both treated and untreated, is not well characterized. Women seeking care for bothersome LUTS at six tertiary centers were enrolled in an observatational study and assessed a wide range of LUTS using the LUTS Tool at baseline, 3 months and 12 months. Our aims were to (1) determine baseline association between LUTS Tool scores and POP and (2) compare change in LUTS Tool scores from baseline to 12-months in women with and without POP.

Methods: Women enrolled in the LURN Observational Cohort study were eligible. Those with missing LUTS Tool data or incomplete/inconsistent Pelvic Organ Prolapse Quantification (POP-Q) data were excluded. The presence of prolapse (yes/no) was identified at baseline if maximum vaginal descent (MVD: greatest of POP-Q points Ba, Bp or C) was >0. Participants who had POP surgery or pessary treatment between baseline and follow-up visits were considered treated. Primary outcomes included LUTS Tool scales (OAB, obstructive, stress incontinence; all scaled 0-100), LUTS Tool Severity and change in LUTS Tool scores from baseline to 12-months. For each scale, repeated measures (within subject) linear regression models were fit with scale as the outcome and prolapse group, age, body mass index, a comorbidity index, smoking status, diabetes, hysterectomy, baseline LUTS scale score, and LUTS treatment included as fixed-effect predictors.

Results: 371 women were included; 311 (84%) without and 60 (16%) with prolapse at baseline. Of those with prolapse, 36 (60%) were treated during follow-up. Those with prolapse were significantly older (64.6 ± 8.7 vs. 55.3 ± 14.1,

$P < .001$), and less likely to be Black (2% vs. 15%, $P = 0.006$). During follow-up, women with prolapse (vs. without) reported greater Kegel exercise (57% vs. 41%, $P = 0.034$) and less OAB medication (12% vs. 28%, $P = 0.013$) use. Other baseline factors and LUTS treatments (physical therapy, sling, onabotulinumtoxinA and neuromodulation) during follow-up did not differ by prolapse status. Figure 1 shows LUTS Tool scores over time by prolapse group. In multivariable models, interaction terms between prolapse groups and visits were not significant (all $p > 0.05$). All LUTS Tool scores decreased at 3- and 12-month visits (mean changes ranged from -4.44 to -14.29, all $p < 0.001$), but scores did not differ between prolapse groups.

Conclusions: LUTS did not differ at baseline between women with or without prolapse in a treatment-seeking cohort. LUTS improved over time in women with treated POP, untreated POP and without POP.



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UPDATING THE PREVALENCE OF URINARY INCONTINENCE IN ADULT WOMEN USING 2015-2018 DATA FROM A NATIONAL POPULATION-BASED SURVEY

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Objective: To update estimates of urinary incontinence (UI) prevalence and associated risk factors for adult women in the United States incorporating the most recent data available from the National Health and Nutrition Examination Survey (NHANES).

Methods: NHANES is a nationally representative annual household survey that assesses health status through interview questionnaires, physical examinations and laboratory tests. We analyzed 2015-2018 NHANES weighted data for women 20 years or older to estimate UI prevalence. Demographics and medical co-morbidities were categorized and evaluated for statistically significant associations with UI using the chi-square test. Multivariable logistic regression modeling determined adjusted associations with UI.

Results: Of 5,006 women with complete data, 3,018 (61.8%) had any UI and 32.4% reported UI at least monthly. Of those with any UI, 37.5% had stress, 22.0% urge, 31.3% mixed, and 9.2% unspecified incontinence. The prevalence of UI increased with increasing age, BMI, functional dependence, and severity of anxiety and depression (Table 1) and these associations were confirmed in the multivariable model (Table 2). Women who identified as non-Hispanic Black or Latinx were less likely than non-Hispanic White women to report UI. Prior vaginal birth and some college education were also associated with higher odds of UI. In the multivariable model, UI was not associated with diabetes, prior hysterectomy, smoking, physical activity level, or current pregnancy.

Conclusions: More than 60% of community dwelling adult US women experience UI, a large increase from prior estimates (38-49%) using NHANES data from 1999-2004. This increase may be related to our aging population and increasing obesity prevalence. Age > 70 years and BMI >40 kg/m2 had the strongest association with UI in multivariable modeling.

Table 1. Demographic, Health, and Obstetric Characteristics (weighted percentages with 95% confidence intervals)

	N	Total	Continent	Incontinent	P-value
Total	5006	100	38.2 [35.7-40.8]	61.8 [59.2-64.3]	
Age (years) 20-29	791	17.6 [15.9-19.5]	63.2 [59.4-66.9]	36.8 [33.2-40.6]	<.001
30-39	797	16.4 [14.8-18.1]	48.1 [44.0-52.4]	51.9 [47.6-56.1]	
40-49	825	16.6 [15.0-18.5]	37.6 [32.5-43.1]	62.4 [57.0-67.5]	
50-59	840	18.7 [16.9-20.6]	32.1 [27.3-37.3]	67.9 [62.8-72.7]	
60-69	923	15.8 [14.2-17.7]	28.1 [24.0-32.5]	71.9 [67.5-76.0]	
70+	830	14.9 [13.3-16.6]	16.8 [13.8-20.5]	83.2 [79.5-86.2]	
Race/Ethnicity Non-Hispanic White	1689	64.3 [59.3-69.1]	34.4 [31.6-37.3]	65.6 62.7-68.4]	<.001
Non-Hispanic Black	1125	11.7 [9.0-15.0]	45.3 [42.2-48.5]	54.7 [51.5-57.8]	
Latinx	1406	14.7 [11.7-18.3]	45.7 [41.4-50.0]	54.3 [50.0-58.6]	
Other	786	9.3 [7.7-11.2]	44.3 [38.9-49.8]	55.7 [50.2-61.1]	
BMI (kg/m2) (N=4959) 18.5-24.9	1340	30.0 [27.5-32.7]	52.2 [47.3-57.0]	47.8 [43.0-52.7]	<.001
25-29.9	1373	27.3 [25.8-28.9]	37.4 [33.2-41.9]	62.6 [58.1-66.9]	
30-39.9	1690	32.2 [30.2-34.2]	30.9 [27.3-34.7]	69.1 [65.3-72.7]	
>40	556	10.5 [9.1-12.1]	23.1 [18.3-28.8]	76.9 [71.2-81.7]	
Education (N=5002) < High School	984	11.2 [9.7-13.0]	37.4 [33.1-41.8]	62.6 [58.2-66.9]	<.001
High school / GED	1097	23.1 [21.4-25.0]	37.1 [33.8-40.6]	62.9 [59.4-66.2]	
Some college	1684	33.6 [31.0-36.3]	34.4 [31.1-37.9]	65.6 [62.1-68.9]	
College graduate or more	1235	32.0 [28.3-36.1]	43.3 [39.6-47.2]	56.7 [52.8-60.5]	
Physical Activity None	1561	25.9 [23.5-28.4]	34.1 [30.6-37.9]	65.9 [62.1-69.4]	<.001
Moderate	715	13.6 [12.3-14.9]	32.6 [27.4-38.2]	67.4 [61.8-72.7]	
Active	2730	60.6 [58.2-62.9]	41.2 [35.7-40.8]	58.8 [55.5-61.9]	
Diabetes Mellitus (N=5003)	687	10.1 [8.7-11.6]	20.3 [16.0-25.5]	79.7 [74.5-84.0]	<.001
No diabetes	4316	90.0 [88.5-91.3]	40.2 [37.5-43.0]	59.8 [57.0-62.5]	
Anxiety (N=4958) None/Mild	2715	48.2 [46.4-50.0]	41.4 [38.3-44.5]	58.6 [55.5-61.7]	<.001
Moderate	1464	35.3 [33.2-37.4]	36.6 [31.9-41.6]	63.4 [58.4-68.1]	
Severe	779	16.5 [14.7-18.5]	32.0 [26.5-41.7]	68.0 [58.3-73.5]	
Depression (N=4966) None/Mild	4457	90.2 [88.8-91.4]	39.8 [37.3-42.4]	60.2 [57.6-62.7]	<.001
Moderate	323	6.6 [5.7-7.7]	25.9 [18.6-34.8]	74.1 [65.2-81.4]	
Severe	186	3.2 [2.6-3.9]	20.6 [15.0-27.5]	79.4 [72.5-85.0]	
Functional Status Independent	3013	63.0 [60.3-65.6]	47.2 [44.4-50.0]	52.8 [50.0-55.6]	<.001
Dependent in 1-2	858	17.7 [16.0-19.5]	26.5 [23.3-30.2]	73.5 [69.8-76.8]	
Dependent in 3-5	1135	19.4 [17.6-21.2]	19.8 [17.1-22.7]	80.2 [77.3-82.9]	
Smoker Never	3372	64.5 [61.8-67.1]	41.5 [38.6-44.4]	58.5 [55.6-61.4]	<.001
Former	874	19.6 [17.5-21.8]	29.8 [25.2-34.9]	70.2 [65.2-74.8]	
Current	760	15.9 [14.3-17.7]	35.5 [31.3-39.9]	64.5 [60.1-68.7]	
Prior Hysterectomy (N=4980)	1110	21.8 [19.5-24.3]	25.4 [22.4-28.8]	74.6 [71.2-77.6]	<.001
No prior hysterectomy	3870	78.2 [75.7-80.5]	41.7 [39.0-44.6]	58.3 [55.4-61.0]	
Birth History (N=4982) No births	955	21.8 [19.6-24.2]	56.4 [51.3-61.4]	43.6 [38.6-48.8]	<.001
Any vaginal birth	3405	65.4 [63.2-67.5]	30.7 [28.2-33.3]	69.3 [66.7-71.8]	
Cesarean only	622	12.8 [11.7-14.0]	44.7 [39.3-50.1]	55.3 [49.9-60.7]	
Currently Pregnant	104	2.1 [1.6-2.7]	48.8 [37.2-60.4]	51.2 [39.6-62.8]	.077
Not pregnant	4902	97.9 [97.3-98.4]	38.0 [35.4-40.7]	62.0 [59.3-64.6]	

Table 2. Factors associated with incontinence in multivariable model

	Adjusted Odds Ratio	95% Confidence Interval	P-value
Age (years) [Ref: 20-29]			
30-39	1.54	1.11 – 2.13	0.011
40-49	2.23	1.57 – 3.16	<0.001
50-59	2.75	1.84 – 4.11	<0.001
60-69	2.88	1.93 – 4.30	<0.001
70+	5.32	3.27 – 8.67	<0.001
Race/Ethnicity [Ref: Non-Hispanic White]			
Non-Hispanic Black	0.62	0.52-0.74	<0.001
Latinx	0.77	0.59-1.00	0.049
Other	0.87	0.70-1.08	0.213
BMI (kg/m2) [Ref: <18.5-24.9]			
25-29.9	1.61	1.26 – 2.06	<0.001
30-39.9	2.21	1.68 – 2.90	<0.001
>40	3.69	2.47 – 5.51	<0.001
Education [Ref: < High School]			
High school / GED	1.11	0.91 – 1.37	0.298
Some college	1.52	1.21 – 1.92	0.001
College graduate / more	1.33	0.99 – 1.78	0.055
Physical Activity [Ref: None]			
Moderate	1.18	0.85 – 1.64	0.32
Active	1.08	0.88 – 1.33	0.469
Diabetes Mellitus	1.27	0.91 – 1.76	0.152
Anxiety [Ref: None]			
Moderate	1.43	1.11 – 1.84	0.007
Severe	1.39	1.03 – 1.86	0.02
Depression [Ref: None]			
Moderate	1.51	0.98 – 2.33	0.061
Severe	1.68	1.09 – 2.58	0.02
Functional Status [Ref: Independent]			
Dependent in 1-2	1.32	1.01 – 1.71	0.043
Dependent in 3-5	1.71	1.32 – 2.21	<0.001
Smoker [Ref: Never]			
Former	1.09	0.82 – 1.46	0.543
Current	1.08	0.90 – 1.31	0.396
Prior Hysterectomy	0.91	0.71 – 1.16	0.417
Birth History [Ref: No births]			
Any vaginal birth	1.92	1.46 – 2.50	<.001
Cesarean only	1.1	0.83 – 1.46	0.485
Currently Pregnant	1.37	0.80 – 2.36	0.242

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ARTIFICIALLY SWEETENED BEVERAGES AND LOWER URINARY TRACT SYMPTOMS- A SECONDARY ANALYSIS OF THE WOMEN'S HEALTH INITIATIVE OBSERVATIONAL STUDY (WHI-OS)

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Objective: While studies have investigated the link between lower urinary tract symptoms (LUTS) and urinary incontinence (UI) with fluid intake and carbonated drinks, the relationship between artificially sweetened beverages (ASB) and UI has been understudied. We sought to investigate whether UI symptoms differed among women based on level of ASB consumption.

Methods: This analytic cohort included 80,388 women from the Women's Health Initiative Observational Study, a multicenter longitudinal study of 93,676 postmenopausal women ages 50 to 79 years at baseline enrolled in 1993 to 1998. Participants who completed a follow-up visit 3 years after baseline and answered questions about ASB consumption and UI symptoms were included. Demographic characteristics were compared between those with rare ASB consumption (never to <1 serving/week), frequent consumption (1-6 servings/week), and daily consumption (≥1 serving/day). Descriptive statistics were used to report rates of UI symptoms, and comparisons were made between groups using chi-square tests for categorical variables and ANOVA for continuous variables. Multivariable logistic regression models were constructed to adjust for potential confounders including age, race/ethnicity, neighborhood socioeconomic status, smoking, alcohol, caffeine, parity, diuretic use, diabetes, water consumption, BMI, hormone therapy use, physical activity, and diet quality (HEI).

Results: Most participants (64%) were infrequent consumers of ASBs, with 13% (n = 10,494) consuming ≥1 serving/day. The unadjusted odds of reporting UI were 10-12% higher in women who consumed 1 serving of ASB at least weekly vs rare consumption (OR 1.10, 95% CI 1.06-1.14 for those who consumed 1-6 servings of ASBs/week, and OR 1.12, 95% CI 1.07- 1.18 for those who consumed ≥1 servings of ASBs daily), but these associations were no longer seen after adjustment. In multivariable analyses investigating type of UI, women consuming ≥1 ASB serving per day compared to never or rarely (<1 serving/week) had 10% higher odds of reporting mixed UI (MUI) (OR 1.10, 95% CI 1.02- 1.19). After adjustments, there were no significant differences in rates of stress UI (SUI) or urge UI (UUI) symptoms between those with rare vs frequent or daily ASB consumption.

Odds Ratios and 95% CIs for Artificially Sweetened Beverage Consumption and Urinary incontinence

		Artificially Sweetened Beverage		
		Never or <1/week	1-6 /week	1 or more /day
Urinary Incontinence	N	51,480	18,414	10,494
	Unadjusted	ref	1.10 (1.06-1.14)	1.12(1.07-1.18)
	Model 1	ref	1.01 (0.96-1.06)	1.04 (0.98-1.10)
	Model 2	ref	1.01 (0.97-1.06)	1.04 (0.98-1.11)
Type of incontinence				
Urge	N	14,061	5,143	2,763
	Unadjusted	ref	1.10 (1.05-1.15)	1.05 (0.99-1.11)
	Model 1	ref	1.05 (0.99-1.11)	1.04 (0.97-1.12)
	Model 2	ref	1.05 (1.00-1.11)	1.05 (0.98-1.13)
Stress	N	13,835	5,077	2,964
	Unadjusted	ref	1.10 (1.05-1.15)	1.14 (1.08-1.21)
	Model 1	ref	0.99 (0.94-1.04)	1.02 (0.95-1.09)
	Model 2	ref	0.99 (0.94-1.05)	1.02 (0.95-1.09)
Mixed	N	7,096	2,755	1,699
	Unadjusted	ref	1.17 (1.10-1.23)	1.28 (1.19-1.37)
	Model 1	ref	1.02 (0.96-1.09)	1.10 (1.02-1.19)
	Model 2	ref	1.02 (0.96-1.09)	1.10 (1.01-1.19)
Unknown	N	3,124	987	565
	Unadjusted	ref	0.95 (0.88-1.03)	0.97 (0.87-1.07)
	Model 1	ref	0.89 (0.82-0.98)	0.97 (0.86-1.08)
	Model 2	ref	0.90 (0.82-0.98)	0.98 (0.87-1.10)

Type of incontinence compared to No UI in polytomous logistic regression
Model 1 adjusted for age, race/ethnicity, NSES (neighborhood socioeconomic status), smoking, alcohol, caffeine, # live births, diuretic use, diabetes, water consumption, BMI, Hormone Therapy use (N=64,567)
Model 2 adjusted for variables in model 1 plus physical activity, diet quality (HEI) (n=64,464)

Conclusions: Rare, frequent, or daily ASB consumption is not associated with an increased odds of reporting SUI or UUI symptoms. When compared to never or rare (<1 serving/week) ASB intake, women consuming ≥1 ASB per day had 10% greater odds of reporting MUI. While other confounding factors may be present, consumption of ASB is not associated with UI symptoms, a finding that may directly impact patient counseling with respect to beverage and fluid management.

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GEOGRAPHICAL INFORMATION SYSTEMS, HEALTH CARE DISPARITIES, AND ADVERSE EVENTS IN WOMEN UNDERGOING BENIGN HYSTERECTOMIES

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Objective: Minoritized women undergoing gynecologic surgery experience worse surgical outcomes, yet contributing factors are incompletely understood. Geographical information systems (GIS) are novel tools used for analyzing patterns of various geographical components affecting medical care across the world, including socioeconomic status (SES), food deserts, distance to hospitals, and diversity indices. The primary aim of this study is to determine whether ethnicity, race or geographical factors are associated with adverse surgical outcomes following benign hysterectomies in a tertiary care center (TCC) in a largely rural state.

Methods: Investigators reviewed electronic medical records of women who underwent total abdominal hysterectomy (TAH), total vaginal hysterectomy (TVH), or total laparoscopic hysterectomy (TLH) from 2007-2017 for benign conditions; this TCC draws from regions with 16-30% poverty rates. Investigators abstracted clinical/demographic factors and presence/absence of five adverse outcomes (surgical site infection, venous thromboembolism, hospital readmission, return to operating room, death) from patient medical records. Using GIS, patient and hospital zip codes were geocoded. Travel time, distance to closest hospital and TCC were estimated for each patient zip code. GIS and state census data were used to assess associations between SES variables, rural urban commuting codes (RUCA) and adverse outcomes. Statistical analysis included descriptive Chi-square, Fisher's exact, Kruskal-Wallis, simple logistic and multiple logistic regression.

Results: 1,291 hysterectomies (559 TAHs, 412 TLHs, 320 TVHs) were performed. Women self-identified as Caucasian (75%), Native American (12.1%), Black (5.1%), and Asian (2.9%) race with 40.2% identifying as Hispanic and 36.6% as Non-Hispanic ethnicity. Patients travelled varying distances for surgery; median travel time was 22.5 minutes (IQR 14.1, 48.2), median travel distance was 15.2 kilometers (IQR 9.4, 43.7). Surgical site infection was the most common adverse outcome (6%) followed by readmission to the hospital (4.4%), return to the OR (2.3%), venous thromboembolism (1.2%), and death (0.2%). TAH increased risk of return to the operating room (adjusted OR 3.0, 95% CI, $P = 0.01$) and occurrence of any adverse outcome (adjusted OR 1.7, 95% CI, $P = 0.01$). TVH had a decreased risk of any adverse outcome (adjusted OR 0.5, 95% CI, $P = 0.009$). Using GIS and RUCA, patients were found to live in the metropolitan area (n = 1,155), micropolitan area (n = 59), a small town (n = 45), or rural areas (n = 32) of the state. No statistically significant associations between RUCA and any adverse outcomes were found. Total population, unemployment rate, median household income, median home value, race, ethnicity, and diversity indices were also not associated with any adverse outcomes.

Conclusions: In this retrospective review of a diverse population from a majority-minority, financially disadvantaged state in the U.S., GIS found no association between race/ethnicity or geographical footprint (SES, time/distance travelled, urban/non-urban setting) and major surgical adverse outcomes following benign hysterectomies. GIS provides added dimension to epidemiologic data previously unexplored in gynecology.

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HEALTH CARE DISPARITIES AND TYPE OF RECONSTRUCTIVE REPAIRS FOR PELVIC ORGAN PROLAPSE USING THE NATIONAL INPATIENT DATABASE

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Objective: Sacrocolpopexy (SCP) is considered as the more durable approach to repair apical prolapse. We compared nationwide trends among utilization of SCP and native tissue repair (NTR) for the treatment of pelvic organ prolapse (POP) based on health care disparities, including race, socioeconomic factors, and region/type of hospital.

Methods: National Inpatient Sample database was queried using ICD-9 and 10 codes for patients with POP undergoing SCP or apical vaginal NTR from 2008-2018. Baseline demographics including race, Elixhauser co-morbidity index (ECI), socio-economic variables (insurance and hospital type), hysterectomy status, and in-hospital mortality were extracted. Statistical t-test, Wilcoxon test were used to identify differences between continuous variables while Chi-square test was used for categorical variables. Multivariate weighted logistic regression models were created controlling for age, ECI and hysterectomy. Odds ratio (OR) and 95% confidence intervals (CI) are reported.

Results: Among 68,421 patients, 23,819 (34.81%) and 44,602 (65.19%) underwent SCP and NTR respectively. Patient demographics are listed in Table 1. Patients undergoing SCP were slightly older and had higher ECI score (0.9 vs 0.8) ($P < 0.001$). Hysterectomy was more common (74.4% vs 51.3%) in the NTR group ($P < 0.001$). Multivariate analysis (Table 2) showed - African Americans (OR = 1.43), Hispanics (OR = 1.24) and 'Other' (OR = 1.2) races were at higher odds of receiving NTR over SCP as compared to Whites ($P < 0.001$). Patients having Medicaid (OR = 1.36) and self-pay (OR = 1.1) were more likely to undergo a NTR compared to those with private insurance. Geographically, patients living in the midwest (OR = 1.53), South (OR = 1.51) and West (OR = 1.28) were more likely to receive NTR than SCP. Patients attending large sized hospitals and urban hospitals were less likely to undergo NTR compared to SCP ($P < 0.001$).

Conclusions: Patients with health care disparities, such as minority race/ethnicity, Medicaid insurance, those attending small/rural hospital were more likely to undergo native tissue repairs compared to sacrocolpopexy. Further research to elucidate this disparity is warranted.

Table 1: Patient demographics, and socio-economic characteristics by surgical approach Sacrocolpopexy Vs Native Tissue Repair

	Sacrocolpopexy N= 23,819	Native Tissue Repair N= 44,602	P-value
Age (Median, IQR)	62.0 (53.0 - 70.0)	60.0 (49.0 - 69.0)	< 0.001
Age (Mean, SD)	61.4 (±12.0)	59.1 (±13.2)	< 0.001
Race (N, %)			
White	17,104 (79.8)	29,229 (74.3)	< 0.001
African American	908 (4.2)	2,340 (5.9)	< 0.001
Hispanics	2,304 (10.7)	5,312 (13.5)	< 0.001
Others	601 (2.5)	1,384 (3.1)	< 0.001
ECI Index (Mean, SD)	0.9 (±1.0)	0.8 (±1.0)	< 0.001
Hospital Region (N, %)			
North-East	5,405 (22.7)	7,748 (17.4)	< 0.001
Midwest	4,960 (20.8)	10,885 (24.4)	< 0.001
South	7,635 (32.1)	15,463 (34.7)	< 0.001
West	5,819 (24.4)	10,506 (23.6)	0.011
Hospital Location-Teaching Status (N, %)			
Rural	1,725 (7.3)	3,827 (8.6)	< 0.001
Urban Non-Teaching	8,460 (35.6)	14,506 (32.7)	< 0.001
Urban Teaching	13,554 (57.1)	26,052 (58.7)	< 0.001
Hospital Bed-Size (N, %)			
Small	3,076 (13.0)	5,953 (13.4)	0.097
Medium	6,016 (25.3)	12,068 (27.2)	< 0.001
Large	14,647 (61.7)	26,364 (59.4)	< 0.001
Payer Information (N, %)			
Medicare	9,611 (40.4)	15,799 (35.5)	< 0.001
Medicaid	993 (4.2)	3,196 (7.2)	< 0.001
Private Insurance	12,245 (51.5)	23,244 (52.2)	0.080
Self-paid	269 (1.1)	717 (1.6)	< 0.001
Hysterectomy (N, %)	12,213 (51.3)	33,181 (74.4)	< 0.001
In-hospital Mortality (N, %)	8 (0.0)	9 (0.0)	0.31

Table 2: Multivariate weighted analysis for Sacrocolpopexy vs. Native Tissue Repairs (adjusted for age, hysterectomy and ECI)

Sacrocolpopexy (0) versus Native tissue repair (1)		
Variable	**Odds Ratio (95% CI)**	**P-value**
Race		
White*	Ref	Ref
African American	1.43 [1.38 - 1.48]	<0.001
Hispanic	1.24 [1.21 - 1.27]	<0.001
Other	1.2 [1.16 - 1.24]	<0.001
Payer		
Medicare*	Ref	Ref
Medicaid	1.36 [1.31 - 1.41]	<0.001
Private Insurance	0.83 [0.81 - 0.85]	<0.001
Self-Pay	1.1 [1.03 - 1.18]	<0.001
Hospital Region		
North-East*	Ref	Ref
Midwest	1.53 [1.49 - 1.56]	<0.001
South	1.51 [1.48 - 1.54]	<0.001
West	1.28 [1.25 - 1.31]	<0.001
Hospital Bed Size		
Small*	Ref	Ref
Medium	0.95 [0.93 - 0.97]	<0.001
Large	0.89 [0.87 - 0.91]	<0.001
Hospital Location Teaching Status		
Rural*	Ref	Ref
Urban Non-Teaching	0.77 [0.75 - 0.8]	<0.001
Urban Teaching	0.83 [0.8 - 0.85]	<0.001

Ref, *: Referent group, CI: Confidence interval

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Short Oral 81
HEALTH CARE DISPARITIES IN LATINA WOMEN PRESENTING WITH PELVIC ORGAN PROLAPSE

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Objective: Previous studies have suggested Latina women report more bother from pelvic organ prolapse and are more likely to seek treatment than non-Latina women. However, there is limited objective data regarding differences in prolapse severity between these groups. We sought to determine differences in objective prolapse severity between Latina and non-Latina patients and the effect of socioeconomic disparities in addition to ethnicity.

Methods: This is a retrospective cohort study of 342 women presenting to Urogynecology clinics at two academic institutions in Los Angeles county (one private, one public). Patients with symptomatic stage II prolapse and higher were included. Initial POP-Q exams and leading edge of prolapse were extracted in addition to demographic data. Multivariate logistic regression was performed to control for several socioeconomic covariates, including employment status and insurance.

Results: 342 patients were eligible for analysis (36% Latina). Twenty-eight percent were non-English speaking and 54% had public or no insurance. There was no objective difference in prolapse severity between Latina and non-Latina patients. However, women with public insurance were more likely to have more advanced prolapse compared to those with private insurance (OR 2.78, 95% CI 1.40-5.55), and non-English speaking women were more likely to have more advanced prolapse compared with English speakers (OR 2.44, 95% CI 1.12-5.34).

Conclusions: In our cohort, Latina ethnicity was not a risk factor for more advanced prolapse. Rather, women who were non-English speaking and had public insurance were more likely to present with advanced prolapse. Our data suggest that language barriers and lower socioeconomic status are health care disparities for women seeking care for prolapse.

Disclosures: K. Marie Douglass: None, Tamara Grisales: None, Natalie Coca: None, Megha Tandel: None, Lorna Herbert: None, Cecilia Wieslander: None

Short Oral 82
PUBLICATION TRENDS FOR SOCIODEMOGRAPHIC DISPARITIES RESEARCH IN UROGYNECOLOGY

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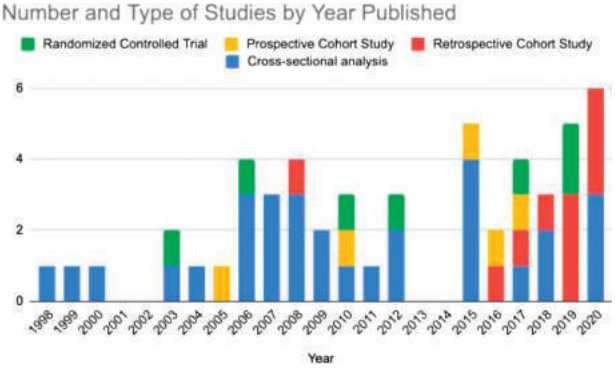
Objective: Research and publications that identify and report sociodemographic disparities are imperative in optimizing patient care. In recent years, this initiative is increasingly valued within the medical community. Our objective was to determine if research on sociodemographic disparities in Urogynecology has become more prevalent over time.

Methods: This was a systematic literature review of publications examining sociodemographic disparities among women in the United States receiving Urogynecologic care. A literature search of studies published in PubMed, Scopus, and CINAHL databases through 2020 was conducted in January 2021. The study design was registered and published to Prospero, Covidence was used for screening, full text review, and study extraction. Studies were included if they evaluated women-specific disparities, were quantitative, and in the field of Urogynecology. Sociodemographic data used to determine disparities included race/ethnicity, language, socio-economic status, insurance payor, distance to care, educational level, and marital status. Our primary outcome was to determine the number of available publications on Urogynecologic sociodemographic disparities. Our secondary outcome was to report the types of studies published.

Results: The initial search yielded 1405 studies. After screening for inclusion and exclusion, 52 studies were included and organized by publication year and type of study (Figure 1). The most common type of publication was cross-sectional analysis. The maximum number of studies published in one year was six in 2020.

Conclusions: The number of studies on sociodemographic disparities in Urogynecology has increased over time, but remains low. Of interest, there is a promising trend towards more robust methodology since 2015, with an increase in prospective cohort studies and randomized controlled trials. Our findings highlight the need for more research and publication on the impact of sociodemographic factors on Urogynecologic care.



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Short Oral 83
A NATIONAL DATABASE EVALUATION OF THE HEALTHCARE DISPARITIES AFFECTING THE ROUTE OF APICAL PROLAPSE REPAIR: RECONSTRUCTIVE VERSUS OBLITERATIVE REPAIR

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Objective: To compare the rate of reconstructive vs obliterative repair for the treatment of pelvic organ prolapse (POP) based on healthcare disparities, including race, region of country, and socioeconomic factors.

Methods: Patients >18 years old who had surgery for POP from 2008-2018 were extracted from the National Inpatient Sample Database using ICD 9 and 10 codes. Demographics, Elixhauser comorbidity index (ECI), and socioeconomic factors (insurance and hospital type) were analyzed. To identify differences between continuous variables, we used t-test and Wilcoxon test, as appropriate. Chi-square test was used for categorical variables. Multivariate weighted logistic regression models were performed to control for age, ECI and hysterectomy. Odds ratio (OR) and 95% confidence intervals (CI) are reported.

Results: Of 71,262 patients, 94.6% underwent reconstructive repair. Patients undergoing obliterative repair were older (median age 77) and had higher EIC score (Table 1). Non-white patients were more likely to undergo obliterative repair rather than reconstructive repair. Multivariate analysis showed African American, Hispanic, and other races were less likely to undergo reconstructive repair compared to whites (OR 0.62, 0.59, and 048). Medicaid and self-pay were less likely to undergo reconstructive repair compared to Medicare (OR 0.44 vs 0.75). Patients in the midwest, south, and west regions were more likely to undergo reconstructive compared to those in the north-east (Table 2). Large hospitals are more likely to perform reconstructive repair when compared to small hospitals (OR 1.05 vs 1.08). Urban teaching hospitals are less likely to perform reconstructive repair compared to rural hospitals (OR 0.54).

Table 1: Patient Demographics by Surgical Approach

	Obliterative N= 3,880	Reconstructive N= 67,382	P-value
Age (Median, IQR)	77.0 (71.0 - 82.0)	61.0 (50.0 - 69.0)	< 0.001
Race/Ethnicity (N, %)			
White	2,639 (73.8)	45,609 (76.2)	0.0009
African American	206 (5.8)	3,198 (5.3)	0.29
Hispanics	426 (11.9)	7,499 (12.5)	0.29
Other	307 (8.6)	3,527 (5.9)	< 0.001
Elixhauser Comorbidity Index (Mean, SD)	1.4 (±1.2)	0.8 (±1.0)	< 0.001
Hospital Region (N, %)			
North-East	951 (24.5)	12,892 (19.1)	< 0.001
Midwest	780 (20.1)	15,642 (23.2)	< 0.001
South	1,257 (32.4)	22,708 (33.7)	0.097
West	892 (23.0)	16,140 (24.0)	0.18
Hospital Location-Teaching Status (N, %)			
Rural	225 (5.8)	5,509 (8.2)	< 0.001
Urban Non-Teaching	930 (24.1)	22,753 (33.9)	< 0.001
Urban Teaching	2,698 (70.0)	38,827 (57.9)	< 0.001
Payer Information (N, %)			
Medicare	3,170 (81.9)	24,617 (36.6)	< 0.001
Medicaid	142 (3.7)	4,152 (6.2)	< 0.001
Private Insurance	495 (12.8)	35,307 (52.5)	< 0.001
Self-pay	23 (0.6)	979 (1.5)	< 0.001
Hysterectomy (N, %)	1,357 (35.0)	44,867 (66.6)	< 0.001

Table 2: Multivariate Analysis: Reconstructive vs Obliterative

Variable	Odds Ratio (95% CI)	P-value
Race/Ethnicity		
White	Ref	Ref
African American	0.62 [0.58 - 0.67]	<0.001
Hispanic	0.59 [0.56 - 0.62]	<0.001
Other	0.48 [0.46 - 0.52]	<0.001
Payer		
Medicare	Ref	Ref
Medicaid	0.44 [0.4 - 0.48]	<0.001
Private Insurance	1.2 [1.14 - 1.26]	<0.001
Self-Pay	0.75 [0.61 - 0.91]	<0.001
No Charge	0.77 [0.51 - 1.16]	0.21
Hospital Region		
North-East	Ref	Ref
Midwest	1.52 [1.45 - 1.6]	<0.001
South	1.33 [1.28 - 1.39]	<0.001
West	1.17 [1.12 - 1.23]	<0.001
Hospital Teaching Status		
Rural	Ref	Ref
Urban Non-Teaching	0.98 [0.91 - 1.05]	0.54
Urban Teaching	0.54 [0.51 - 0.58]	<0.001
Hospital Bed Size		
Small	Ref	Ref
Medium	1.05 [1 - 1.11]	0.05
Large	1.08 [1.03 - 1.13]	<0.001

Conclusions: Patients with healthcare disparities (e.g. minority race/ethnicity, Medicaid insurance) are more likely to undergo obliterative rather than reconstructive repair for POP even with controlling for age and ECI. Those with private insurance or seeking care in a large size hospital are more likely to undergo reconstructive repair.

Disclosures: Emily Rutledge: None, Ghanshyam Yadav: None, Sarah Rozycki: None, Tariq Nisar: None, Jiaqiong Xu: None, Tristi Muir: None, Danielle Antosh: None

Short Oral 84
DO ONLINE PATIENT PORTAL ACCESS DISPARITIES PERSIST IN THE UROGYNECOLOGY POPULATION?

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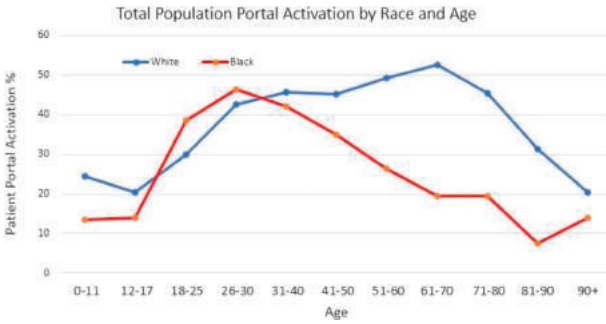
Objective: The COVID-19 pandemic has necessitated increased utilization of telemedicine and virtual healthcare, thereby highlighting the importance of

patient access to electronic patient portals. Disparities in patient portal access and utilization have been linked to race, gender, age, and geography amongst other factors. The objective of this study was to assess for variables associated with patient portal access, with a particular focus on the Urogynecology population.

Methods: We describe a retrospective analysis of the first six years of patient portal activation, from 2011-2016, within a large academic medical center. The primary endpoint was activation of the online patient portal. Data including demographics, diagnosis codes, and patient portal activation status was extracted from the Obstetrics and Gynecology (Ob/Gyn) clinic and subspecialty clinics, as well as the Family Medicine (FM) clinic. Patients could be co-enrolled in separate clinics. Zip codes were used to approximate median income and urban/suburban/rural designation from the Census and USDA respectively. Disease burden was calculated by the sum of organ systems with an associated diagnosis code. Chi square and binomial regression models were used to calculate the odds ratios of the various factors in predicting patient portal activation.

Results: The total population included 88,511 patients (Ob/Gyn n = 42,693, FM n = 45,479, Urogynecology n = 1,593). By 2016, 40.1% of all patients had activated their patient portal. Black race was associated with lower odds of patient portal activation (aOR 0.67, 95% CI 0.63-0.71). This difference did not persist in the younger population and was apparent after age 40 (see Figure 1). Other significant factors that lead to decreased odds of patient portal usage were suburban/rural zip code, and non-private insurance. Larger disease burden (aOR 1.24, 95% CI 1.22-1.25) was associated with increased odds. With the exception of Urogynecology, treatment by any other Ob/Gyn subspecialty clinic led to increased odds of portal activation. When Urogynecology was analyzed separately, Black race (aOR 0.48, 95% CI 0.24-0.93), larger disease burden (aOR 1.23, 95% CI 1.163-1.307), and treatment by the Gynecology Oncology department (aOR 6.64, 95% CI 1.25-35.37) remained significant.

Conclusions: Similar to findings of previous research, our model highlights disparities in electronic patient portal access, which persist in the Urogynecology population. While race did appear to influence portal usage, it did so only after the age of 40, suggesting a generational influence. Patient portal utilization was lower in the Urogynecology department compared to other divisions with similar demographics, like Gynecology Oncology, suggesting room for improvement and the need for additional attention.



Urogynecology Clinic Regression Model	B	Sig.	Adjusted Odds Ratio	95% C.I.for EXP(B) Lower	Upper
Age	-0.025	<0.001	0.975	0.964	0.987
Race		0.073			
Race - Black vs White	-0.744	0.030	0.475	0.243	0.929
Race - Asian vs White	0.431	0.517	1.538	0.418	5.667
Hispanic Ethnicity	1.324	0.054	3.759	0.979	14.439
Marital Status		0.054			
Married vs Single	0.154	0.492	1.167	0.751	1.813
Divorce/Separated vs Single	-0.260	0.360	0.771	0.441	1.346
Widowed vs Single	-0.347	0.220	0.707	0.406	1.231
Family	0.172	0.430	1.188	0.774	1.824
Gynecology	0.101	0.558	1.106	0.789	1.551
Gynecology Oncology	1.893	0.027	6.638	1.246	35.367
MFM	0.216	0.631	1.241	0.514	2.995
Disease Burden (Count of 11 Organ Systems)	0.209	0.000	1.233	1.163	1.307
Median Income 2006-2010 ACS - GT 100,000	0.272	0.173	1.312	0.887	1.940
RUCA UDSA Codes		0.746			
Suburban vs Urban	-0.068	0.709	0.934	0.652	1.337
Rural vs Urban	0.157	0.543	1.170	0.706	1.938
Insurance Code		0.512			
Medicaid vs Private	0.030	0.867	1.031	0.724	1.468
Medicare vs Private	-0.155	0.564	0.857	0.507	1.449
Supplemental Medicare vs Private	0.230	0.276	1.259	0.832	1.905
Constant	-2.656	0.000	0.070		

Dependent Variable = My Chart Usage

Disclosures: Sean Spector: None, Krystal Hunter: None, Lioudmila Lipetskaia: None

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Short Oral 85

THE RELATIONSHIP BETWEEN PELVIC FLOOR DYSFUNCTION AND THE SOCIAL DETERMINANTS OF HEALTH

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Objective: To examine whether patients with worse pelvic floor dysfunction (PFD) have more unmet social needs and to explore the impact of social determinants of health (SDOH) on PFD.

Methods: We conducted a cross-sectional cohort study of patients presenting to outpatient female pelvic medicine and reconstructive surgery (FPMRS) clinics at Montefiore Medical Center (Bronx, NY) from November 2018 to November 2019. Pelvic Floor Disorder Inventory (PFDI-20) was administered to assess for PFD, including its individual components assessing urinary distress (UDI-6), colorectal distress (CRADI-8), and prolapse (POPDI-6). The Accountable Communities of Health (ACH) Social Determinants of Health survey was used to evaluate SDOH. Ordinal logistic regression models were used to examine the association between PFD symptom level (none or mild symptoms 0-49, moderate symptoms 50-170, and severe symptoms >170) and each SDOH item, while adjusting for age, race, BMI, parity and history of pelvic surgery.

Results: One hundred thirty-three women were recruited with mean age 57.7 years (SD 14.1) and mean BMI 30.6 (SD 7.0). The majority of patients were of minority race/ethnicity (n = 120, 90.2%; 36.1% Black and 54.1% Hispanic). Most patients (70.7%, n = 94) met criteria for moderate or severe PFD. Patients with moderate/severe PFD were more likely to have greater parity ($P = 0.0262$), but otherwise were similar in age, BMI, and history of pelvic surgery compared to patients with no/mild pelvic dysfunction. Worse PFD was associated with needing help or feeling lonely ($P = 0.0003$), speaking a non-English language or needing help with school (aOR, 3.85, $P = 0.006$), mental health needs (aOR, 2.79, $P = 0.024$), and difficulty concentrating or performing errands (aOR, 2.94, $P = 0.022$). When PFDI-20 was separated into its components, CRADI-8 was associated with financial difficulty (aOR, 1.80, $P = 0.013$), needing help or feeling lonely (aOR, 4.97, $P = 0.047$), speaking a non-English language or needing help with school (aOR, 1.29, $P = 0.002$), and mental health needs (aOR 3.71, $P = 0.042$). POPDI-6 was associated with needing help or feeling lonely ($P = 0.019$) and mental health needs ($P = 0.004$).

Conclusions: In a small cross-sectional cohort from a racially/ethnically diverse urban community, certain SDOH, especially mental health needs and needing help or feeling lonely, were associated with worse PFD. SDOH should be considered in the evaluation and management of PFD and women with unmet social needs referred to social work and/or mental health specialists. Future research should assess whether addressing these SDOH impacts PFD treatment success.

Disclosures: Stephanie Zuo: None, Laura Tellechea: None, Ava Scott: None, Melissa Laudano: None, Nitya Abraham: None

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Short Oral 86

THE IMPACT OF LANGUAGE DISCORDANCE ON PATIENTS' PERCEPTION OF A CLINICAL ENCOUNTER AND TRUST IN PROVIDER: THE PACT STUDY

L. Caldwell[1], G. Halder[2], A. White[1], R. High[1], M. Wright[3], R. Rogers[4]. *University of Texas at Austin Dell Medical School[1], UT Austin Dell Medical School[2], University of Texas at Austin[3], Albany Medical Center[4]*

Objective: One in four women in the US will identify as Latina by 2050. Non Spanish-speaking providers utilize many techniques for patient communication including translation (formal or ad-hoc) or use of the provider's second language. The impact of language barriers and translation on pelvic floor disorders care has not been previously described. We compared the impact of language concordance to the impact of language discordance on the patient experience and trust in their provider.

Methods: This was a cross-sectional cohort study of English and Spanish-speaking patients with pelvic organ prolapse (POP) and/or urinary incontinence (UI) presenting for initial evaluation with a new provider. English-speaking patients seen by an English-speaking provider and Spanish-speaking patients seen

by a native Spanish-speaking provider were recruited to the language concordant group. The language discordant group consisted of Spanish-speaking patients seen with a translator or by providers speaking Spanish as a second language. Baseline characteristics and symptom questionnaires were completed prior to the clinic visit. Immediately following the visit, patients completed the Trust in Physician Scale (TPS) and selected domains of the Consumer Assessment of Healthcare Providers and Systems Clinician & Group Survey (CG-CAHPS). Patients and providers rated the provider's Spanish proficiency on a 10-point scale from 0 (low) to 10 (high).

Results: Eighty women were recruited, 40 to the language concordant and 40 to the language discordant groups. Mean age was 55.4 ± 12.9 years. The majority identified as White (75%) and Hispanic (77.5%) with no difference in baseline symptom severity or questionnaire scores (all $P > 0.05$). Language discordant visits were longer than language concordant visits (44.9 ± 14.9 vs 36.3 ± 17.3 minutes, $P = 0.022$). TPS scores between the language concordant and language discordant groups were similar (46.2 ± 8.5 vs 44.4 ± 7.5, $P > 0.05$) and there was no difference in Provider Communication, Provider Rating and Recommendation domains of the CG-CAHPS (all $P > 0.05$) (Table 1). TPS scores in Spanish-speaking patients seen with or without a translator were not different (45.8 ± 7.05 vs 43.1 ± 8.18, $P > 0.05$). Trust was not impacted by health literacy, education level or ethnicity (all $P > 0.05$). Provider self-rating of Spanish proficiency was significantly lower than patient ratings (7.5 ± 1.8 vs 9.8 ± 0.5, $P < 0.001$).

Conclusions: Patient-provider language discordance does not impact patient trust in provider or perception of their encounter as measured by the TPS and CG-CAHPS questionnaires. Language discordant visits are approximately 10 minutes longer than language concordant visits.

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Disclosures: Lauren Caldwell: None, Gabriela Halder: None, Amanda White: None, Rachel High: None, Michelle Wright: None, Rebecca Rogers: Uptodate: Writer: Self, IUGA: Editor in Chief: Self, ABOG: Member subspeciality section: Self

Short Oral 87
LINGUISTIC DIFFERENCES BY GENDER IN LETTERS OF RECOMMENDATION FOR FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY FELLOWSHIP APPLICANTS FROM 2010 TO 2020

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Objective: Gender bias has been reported within the application process for multiple medical specialties. We sought to determine if linguistic differences exist in letters of recommendation (LORs) for female and male physicians applying to Female Pelvic Medicine and Reconstructive Surgery (FPMRS) fellowship.

Methods: In this retrospective cohort study we reviewed fellowship applications and LORs for Obstetrics and Gynecology-trained FPMRS applicants who applied to our institution from 2010 to 2020. Demographic data abstracted included applicant age, race, gender, geographical region of residency training, Step 1 and 2 scores, number of research activities, volunteer activities, and number of LORs, as well as the gender and title and academic rank of the letter writer. We utilized Linguistic Inquiry and Word Count (LIWC) software, a validated text analysis program, to characterize the linguistic content of the LORs by providing the frequency of words in predetermined categories. Multivariable analysis was used to compare letter characteristics to applicant and letter writer demographics.

Results: A total of 306 applications, including 1,062 LORs were analyzed. Two-hundred twenty-one (72.2%) applicants were female, and 85 (27.8%) were male. There were no significant differences in race, Step 1 scores, number of research projects, or number of LORs submitted between male and female applicants. Male applicants were slightly older (mean age 32.5 ± 4.1 vs. 31.1 ± 3.5, $P < 0.01$) and were more likely to have completed an international residency program (33% vs. 15%, $P < 0.01$). Women reported higher Step 2 scores (237 ± 18.3 vs. 230 ± 19.8, $P = 0.01$), and more service activities (5.9 ± 4.5 vs. 4.3 ± 3.8, $P < 0.01$). Four-hundred fifty-seven (43.0%) letters were written by female letter writers, 586 (55.2%) by males, and 19 (1.8%) were a combination. Following multivariable analysis controlling for race, Step 1 score and letter writer gender, there were no significant differences in average LORs word count for female and male applicants (486 ± 58.9 words vs. 498 ± 61.9 words), nor were there any differences across all LIWC linguistic categories (Table). The most common letter variables included analytical thinking, emotional tone, and clout. We stratified the data into two-year time periods and overall found no trends in linguistic differences over time. Differences in references to home and achievement were found, but in less than 5% of all letters. A subsequent analysis evaluating the impact of concordance or discordance of letter writer and applicant gender, also found no differences in letter characteristics.

Conclusions: We found no differences in LORs length or categories used between female and male applicants to FPMRS fellowship. No clear linguistic differences, suggestive of gender bias, were found. This is likely reflective of the shift in the field of Obstetrics and Gynecology towards becoming a predominantly female dominated field, along with broader societal and institutional trends promoting gender equality and unconscious bias awareness.

Analysis of LOR characteristics by applicant gender controlling for race, Step 1 score, and letter writer gender

	Female	Male	P-value
Word Count (Mean ± SD)	486.8 ± 58.9	498.6 ± 61.9	0.55
Summary Variables (Mean ± SD)			
Analytical Thinking	91.6 ± 2.9	91.6 ± 3.1	0.99
Emotional Tone	86.5 ± 2.7	86.4 ± 2.9	0.97
Clout	83.6 ± 2.2	82.6 ± 2.4	0.17
Authenticity	7.6 ± 1.7	7.9 ± 1.8	0.57
Word Categories (Mean ± SD)			
Affective Processes	4.9 ±0.5	5.0 ± 0.6	0.78
Positive Emotion	4.3 ± 0.5	4.4 ± 0.5	0.74
Negative Emotion	0.5 ± 0.1	0.5 ± 0.1	0.82
Social processes	11.4 ± 0.6	11.1 ± 0.7	0.18
Friend	0.3 ± 0.1	0.4 ± 0.1	0.06
Family	0.05 ± 0.05	0.06 ± 0.06	0.68
Cognitive processes	7.1 ± 0.6	7.2 ± 0.6	0.51
Insight	2.8 ± 0.3	2.9 ± 0.3	0.67
Tentative	1.1 ± 0.2	1.1 ± 0.2	0.31
Certainty	1.1 ± 0.2	1.0 ± 0.2	0.37
Drives	10.1 ± 0.6	9.9 ± 0.7	0.31
Achievement	3.7 ± 0.4	3.7 ± 0.4	0.9
Power	3.1 ± 0.4	3.1 ± 0.4	0.69
Risk	0.2 ± 0.1	0.2 ± 0.1	0.34
Personal Concerns			
Work	9.3 ± 0.6	9.1 ± 0.6	0.34
Home	1.1 ± 0.2	1.0 ± 0.2	0.83
Leisure	0.5 ± 0.2	0.5 ± 0.2	0.52
Money	0.1 ± 0.1	0.1 ± 0.2	0.41

Disclosures: Erryn Tappy: None, Evelyn Pan: None, Angela Wang: None, Diksha Verma: None, L. Steven Brown: None, Maria Florian-Rodriguez: None

Short Oral 88
HOW DO THE FINANCIAL RELATIONSHIPS BETWEEN FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY FELLOWSHIP DIRECTORS COMPARE TO THOSE OF OTHER OBSTETRICS AND GYNECOLOGY SUBSPECIALTIES?

L. Palmere[1], J. Guido[2], T. Muffly[3]. *SCL Health Saint Joseph Hospital Denver[1], MJW Technical Services[2], Denver Health Medical Center[3]*

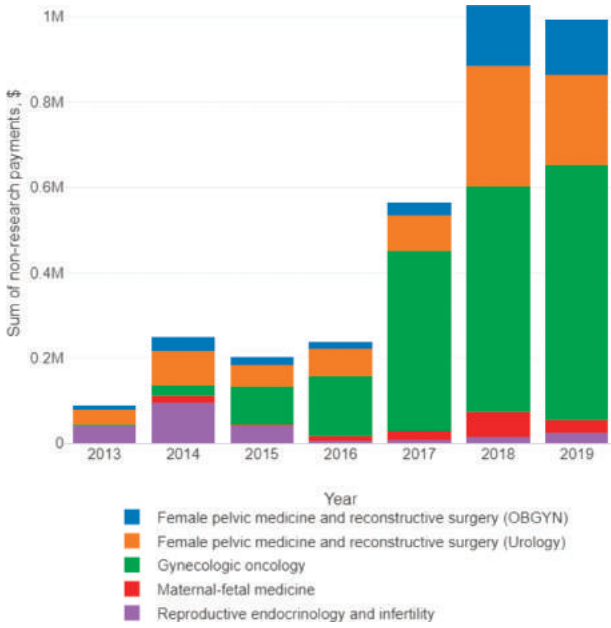
Objective: The purpose of this retrospective database review was to examine the magnitude of payments that female pelvic medicine and reconstructive surgery fellowship directors received from the medical industry compared to other obstetric and gynecology fellowship directors.

Methods: For this retrospective, cross-sectional study, a list of non-research payments from the medical industry to obstetrics and gynecology fellowship directors was obtained through the Centers for Medicare and Medicaid Services Open Payments Database. Payment data spanned dates from August 1, 2013 to December 31, 2019. These data were cross-referenced to a list of fellowship directors from the Accreditation Council of Graduate Medical Education. Characteristics of the non-research payments and the fellowship director demographics were analysed with chi-square and student's t-test. All tests were two-sided, with significance set at a probability value of <= 0.05.

Results: A total of 7,302 payments, totaling $3,360,932 were made to 138 fellowship directors, 42 of which were female pelvic medicine and reconstructive surgery fellowship directors (Figure). The mean payment amount increased each year after 2015, with the highest mean payments in 2019. Analysis was performed to evaluate female pelvic medicine and reconstructive surgery fellowship directors based on whether their residency training was in urology or obstetrics and gynecology. Those who were urology-trained received a mean payment amount 2.5 times higher than their gynecology-trained female pelvic medicine and reconstructive surgery colleagues ($567 [+/- 1605] vs $219 [+/- 957]; $P < 0.01$). The largest payment dollar amounts went to the category of non-continuing medical education programs for both groups ($2,652 [+/- 2,232]; $P < 0.01$). Urology-trained female pelvic medicine and reconstructive surgery fellowship directors received the highest mean payment amount for Algovita (spinal cord stimulator) ($2,493 [+/- 9,487]; $P < 0.01$), while gynecology-trained female pelvic medicine and reconstructive surgery fellowship directors' highest payments were for Uphold Lite (mesh vaginal support system) ($1,005 [+/- 2,215]; $P < 0.01$).

In comparison to other obstetrics and gynecology subspecialists, fellowship directors who tended to receive larger mean payments were male, 35- to 40-years old, practicing in ACOG District IX (California), trained in gynecologic oncology, and had zero to four years of experience as fellowship director ($P < 0.01$ for all). Gynecologic oncology fellowship directors received the highest total sum of money, the highest mean payment amount, and the most individual non-research payments. Male fellowship directors received nearly three times more funding in non-research payments than their female counterparts ($381 [+/- 742] vs. $128 [+/- 609]; $P < 0.01$).

Conclusions: Female pelvic medicine and reconstructive surgery fellowship directors have a substantial relationship with the medical industry that has the potential to impact the education and therefore future practice of their fellows. These relationships should be made transparent to fellowship applicants.



Disclosures: Laura Palmere: None, Joseph Guido: None, Tyler Muffly: None

Short Oral 89
RESIDENT REPORTED SURGICAL EXPERIENCE IN FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY

S. Ward[1], M. Mendiola[2], C. Royce[3], M. Anand[3], M. Hacker[4], W. Winkelman[5]. *Mount Auburn Hospital, Beth Israel Deaconess Medical Center*[1], *Beth Israel Deaconess Medical Center; Harvard Medical School*[2], *Beth Israel Deaconess Medical Center/Harvard Medical School*[3], *Harvard University*[4], *Mount Auburn Hospital*[5]

Objective: Obstetrics and gynecology residents routinely report relatively high dissatisfaction with the amount of experience in Female Pelvic Medicine and Reconstructive Surgery (FPMRS) (1,2). Moreover, in a survey of program directors regarding fellow preparedness, surgical skills were uniformly rated as deficient among first-year FPMRS fellows (3). These findings raise concerns that residents may have insufficient experience in incontinence and pelvic floor (ISPF) procedures during residency training. The aim of this study was to assess trends in reported surgical experience with both ISPF and cystoscopy procedures of residents in obstetrics and gynecology in the United States.

Methods: This was a retrospective analysis of the national case log reports from the Accreditation Council for Graduate Medical Education (ACGME) for obstetrics and gynecology resident cases logged as "surgeon." These data are free and publicly available on the ACGME website. The ACGME implemented the Milestone Project in 2013, and modified the procedures included in this annual report. Therefore, this study includes data from 2013 through 2019. Data are presented as mean ± standard deviation. Two-sided *t* test was used to compare surgical experience between different years. Pearson correlation coefficient was calculated to assess trends in experience over time.

Results: From 2013 through 2019, ACGME collected data from a mean of 240 programs (range 239-242) with a mean of 1251 residents (range 1213-1286) reporting annually. During this time period, there was a 26% decrease in resident-reported experience with ISPF procedures from 74 ± 36 in 2013 to 55 ± 34 in 2019 ($P < 0.001$). Overall, the mean number of ISPF procedures per resident fell by 4% per year ($R = 0.93$, $P = 0.002$). Experience with cystoscopy increased by 19% from 43 ± 25 in 2013 to 51 ± 29 in 2019 ($P < 0.001$), which corresponded to an increase of 3% per year ($R = .97$, $P < 0.009$). There was a significant difference in vaginal hysterectomy experience from 19 ± 8 in 2013 to 23 ± 20 in 2019 ($P < 0.001$); however, over the seven years there was no clear trend, and vaginal hysterectomy experience remained relatively stable ($R = 0.14$, $P = 0.77$).

Conclusions: There was a significant decrease in resident-reported ISPF experience from 2013 to 2019. This decrease occurred despite the fact that cystoscopy numbers have risen, and vaginal hysterectomy numbers have remained stable from year to year. Since the ACGME "incontinence and pelvic floor" designation comprises a wide range of procedures, future investigation is needed to elucidate the gaps in FPMRS-specific surgical training during residency. It remains to be determined whether these trends reflect an increasing lack of exposure to ISPF procedures, and how this affects obstetrics and gynecology resident surgical experience.

References

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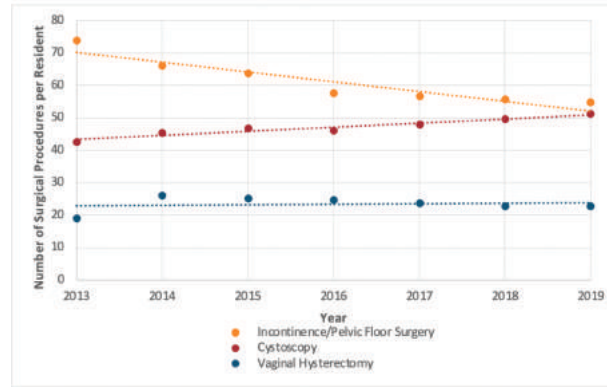
Table 1: Surgical experience of graduating residents in obstetrics and gynecology

Graduation year	Number of programs	Number of residents	Incontinence and pelvic floor, mean ± SD	Cystoscopy, mean ± SD	Vaginal Hysterectomy, mean ± SD
2013	241	1220	73.8 ± 36	42.6 ± 25	19 ± 8
2014	239	1213	66 ± 35	45.4 ± 28	25.9 ± 11
2015	239	1234	63.6 ± 35	46.7 ± 27	25.1 ± 11
2016	241	1259	57.5 ± 34	46.1 ± 28	24.5 ± 10
2017	242	1271	56.7 ± 33.2	48 ± 28.5	23.6 ± 11.1
2018	241	1277	55.7 ± 34.3	49.6 ± 26.7	22.8 ± 10.6
2019	240	1286	54.8 ± 33.6	51.4 ± 29.3	22.9 ± 19.9

Figure 1: Trends in surgical experience of graduating residents in obstetrics and gynecology



Disclosures: Sarah "Sally" Ward: None, Monica Mendiola: None, Celeste Royce: None, Mallika Anand: None, Michele Hacker: None, William Winkelman: None

Scientific Salon 1

3D FASCICLE ORIENTATIONS OF THE PELVIC FLOOR AND ASSOCIATED MUSCLES FROM CADAVERIC CRYOSECTION IMAGES

S. Bowen[1], P. Moalli[2], S. Abramowitch[1]. *University of Pittsburgh[1], Magee Women's Hospital of the University of Pittsburgh[2]*

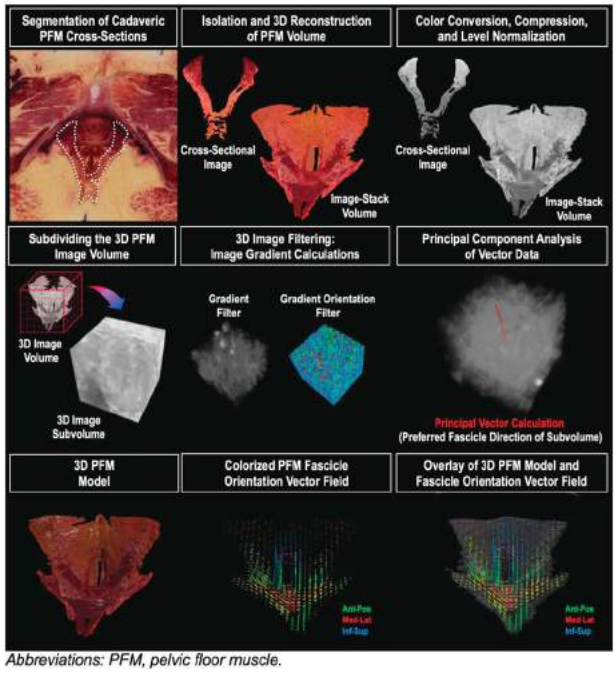
Objective: Incorporation of the physiologic fascicle orientation of the pelvic floor muscles (PFMs) in computational models would more accurately simulate their mechanical behavior. We previously published an approach to determine fascicle orientation on the PFM surface using photogrammetry. However, this method is limited to visible surface fascicles and required manual tracing of fascicle directions. The aim of this study was to develop a semi-automated method to determine 3D muscle fascicle orientations of the PFM from serial cryosection images obtained from the Visible Korean Project, and visualize them with respect to the PFM volume.

Methods: For this study, high-resolution axial cryosection images (pixel size, 0.1 mm; interval, 0.1 mm) of a female cadaveric pelvis obtained from a premenopausal donor with no history of pelvic floor disorders (age, 43; height, 1.53 m; weight, 54 kg) were evaluated. 2D images were imported into Photoshop to manually segment the PFMs. Segmented images were then exported to a custom Mathematica code to extract the fascicle orientations in the 3D volume. The code performed a color-to-grayscale conversion and intensity normalization on the images and stacked them to create a 3D volume. The entire volume was then divided into subvolumes (4 mm^3). For each subvolume, the gradient orientation (unit vector parallel to gradient) was computed and normalized by the gradient magnitude at each voxel. A principal component analysis was performed on the normalized vectors. The resulting eigen-vectors were used to determine the preferred fascicle direction and confidence of that direction. Finally, a 3D vector field of all the subvolumes was constructed and imported into Houdini FX for 3D visualization.

Results: Pelvic muscles analyzed included the external anal sphincter (EAS), puborectalis (PR), pubovisceral muscle (PVM), superficial perineal muscles (SPM), constrictor urethrae muscle (CUM), iliococcygeus (IC), and coccygeus (C). A visual summary of the proposed method is shown in Fig 1. Local fascicle directions are given by 3D vector field colored by their direction and scaled by their confidence value (i.e., a larger vector indicates higher confidence). The vector field showed delineation of the PFM groups, with lateral (red, orange) orientation in the C and CUM, anterior-posterior (green, yellow) orientation in the SPM, and inferior-superior (blue, purple) orientation in the IC, PVM, and PR. The EAS field was circular around the anus.

Conclusions: The fascicle orientation of the PFM and associated muscles were successfully determined and visualized in 3D using a semi-automated algorithm. Future work will incorporate these fascicles directions into computational models to simulate muscle function in-vivo.

Figure 1: Overview of the proposed muscle fascicle orientation calculation and model implementation method. In the 3D vector filed, anterior-posterior orientation is given in green/yellow, medial-lateral orientation is given in red/orange, and inferior superior orientation is given in blue/purple.



Abbreviations: PFM, pelvic floor muscle.

Disclosures: Shaniel Bowen: None, Pamela Moalli: None, Steven Abramowitch: None

Scientific Salon 2

COMPUTATIONAL WALL MOTION ANALYSIS OF REAL-TIME MR IMAGING OF THE BLADDER DURING MICTURITION

K. Falk[1], M. Usta[2], B. Zhang[2], J. Oshinski[3], R. Kelley[3]. *Emory University School of Medicine[1], Georgia Institute of Technology[2], Emory University[3]*

Objective: This abstract presents findings from phase 2 of our pilot study, focusing on analysis of bladder wall motion during micturition. This is a key step in the overall process of developing a method for real-time MR image acquisition and computational fluid dynamic analysis of flow patterns within the healthy human bladder. The rationale for studying bladder flow is built on the hypothesis that alterations in fluid flow pattern may occur in patients with bladder abnormalities including detrusor underactivity and structural defects. It has been shown in nature that flow pattern influences microbiological systems, suggesting that abnormal bladder flow patterns may influence the bladder microbiome and UTI risk. By defining flow patterns in healthy bladders, we will be able to study pattern alterations in those with known pathology. We aim to demonstrate that MR-acquired images of bladder fluid can be analyzed utilizing computational models to determine prescribed bladder wall motion.

Methods: This study builds on our prior research, which demonstrated a method of producing clear, real-time images of laminar and recirculating vortical urine flow healthy human bladders using magnetic resonance (MR) balanced steady-state free processing sequence combined with T-PAT imaging (Falk et al., AUGS PFD week 2019). The real-time MRI images (100 msec temporal resolution) of the bladder were segmented by employing the 3D Slicer software from pre to post voiding. The segmented bladder areas were subsequently exported as stereolithography (STL) files, then imported into ParaView to extract the coordinates of the bladder walls. The velocity of the moving wall was calculated in a spherical coordinate system with the origin situated in the centroid of the wall of the post voiding bladder. In this study, the bladder wall was assumed to move radially, where the azimuthal and polar motions of the wall were ignored. The radial displacement of the bladder wall is sampled at 72 locations and the wall velocities at these points are calculated. The bladder outlet was fixed during the voiding process.

Results: We were able to determine the prescribed wall motion of the bladder during micturition with sufficient spatiotemporal resolution (**figure 1**). The bladder deforms asymmetrically, and the aspect ratio of the overall bladder shape increases during micturition.

Conclusions: Real-time MR images of bladder wall deformation during micturition were able to be computationally modeled. It is anticipated that the observed wall behavior induces vortical flow structures in addition to laminar parallel flow in the direction of the urethra as observed and described in the our previous study. The CFD simulations with prescribed wall motion of the bladder will enable us to complete phase 3 of this research, which will predict the flow field inside the bladder and to characterize the flow structures, including shear stress distribution, on the bladder wall.

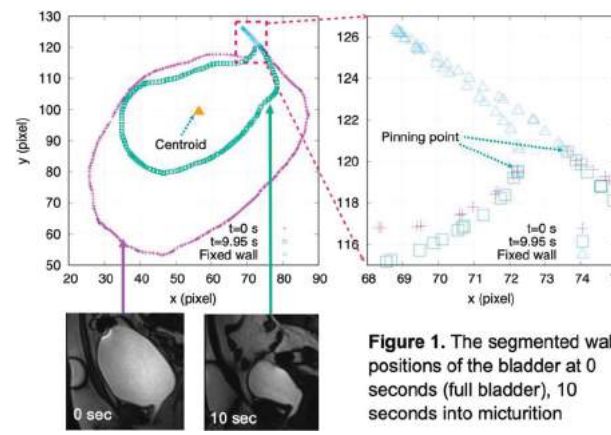


Figure 1. The segmented wall positions of the bladder at 0 seconds (full bladder), 10 seconds into micturition

Disclosures: Kerac Falk: None, Mustafa Usta: None, Bo Zhang: None, John Oshinski: None, Robert Kelley: None

Scientific Salon 4

POSTPARTUM LEVATOR PLATE SHAPE AND HIATUS SIZE AFTER VAGINAL DELIVERY

P. Schmidt[1], L. Chen[1], J. Miller[1], J. DeLancey[1], C. Swenson[1]. *University of Michigan*[1]

Objective: 1) Quantify changes in levator plate (LP) shape and hiatus size at 7 weeks, 8 months following vaginal delivery. 2) Identify factors associated with impaired postpartum pelvic floor recovery.

Methods: Primiparous women who underwent pelvic MRI and clinical exam at 7-weeks and 8-months postpartum after vaginal delivery were included in this secondary analysis. Demographics, obstetrical data, levator ani defect scores, and maximal Kegel contraction force, were abstracted. Mid-sagittal resting MRIs were used to perform Level III measurements including: urogenital hiatus (UGH), levator hiatus (LH), mid-sagittal levator area (LA), and to trace the levator plate (LP). Principal component analysis was used to quantify two independent shape variations in LP shape (PC1 and PC2). Negative PC1 scores corresponded to a more horizontal position relative to the body axis. Principal component scores and MR measures were compared for both 7-weeks and 8-months using paired t-test. Women were considered to be "more vertical" if the change in PC1 score from 7-weeks to 8-months was >0, indicating a more vertically oriented LP shape at 8 months which corresponds with a "lower" pelvic floor.

Results: Thirty women were included (mean age: 28.3 ± 4.2 years). Resting LP shape showed that PC1 and PC2 accounted for 55% and 35% of the variability, respectively. Overall, LP shape change became more horizontal over time (mean PC1 score change: -8.4 ± 10.8, $P < .001$) (Figure 1). Compared to 7 weeks, POP-Q measures at 8 months were not significantly different. MRI measures improved: mean ± SD (%) change in UGH: -0.5 ± 0.6 cm (19%), $P < .001$; LH: 0.2 ± 0.4 cm (4%), $P = .01$; LA: -3.4 ± 4.2 cm^2 (15%), $P = .001$. Sixteen women (53.3%) had improvement in all Level III measures (UGH, LH, LA). Eight women (26.7%) had a more vertical LP shape at 8 months. There were no significant differences in demographics, obstetrical variables, POP-Q measures, or levator defects at 8 months between those with a more vertical versus horizontal LP shape. Women with more vertical LP change had larger UGH (3.7 ± 0.7 vs 3.1 ± 0.8 cm, $P = .04$), LH (5.5 ± 0.9 vs 4.9 ± 0.5 cm, $P = .03$), and LA (17.9 ± 5.4 vs 11.6 ± 5.1 cm^2, $P = .01$). Maximal Kegel force was significantly greater in women with a more vertical LP (5.3 ± 2.6 vs 3.4 ± 1.6 N, $P = .03$).

Conclusions: Over 50% of women have a more horizontal LP and narrower hiatus at 8 months compared to 7 weeks postpartum; however, nearly one-third had a more vertical LP and this was associated with enlarging Level III measures suggesting impaired pelvic floor recovery in these women. Stronger pelvic muscle strength in the more vertical LP group suggests these changes are not from worsening muscle function. Worsening measures of pelvic floor support in the first postpartum year may help identify women at high risk of pelvic floor disorders and warrants further study.

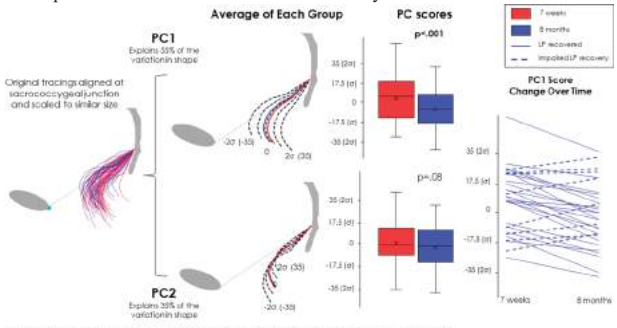


Figure 1. Resting levator plate shape analysis comparing 7 weeks to 8 months postpartum
The bottom error bar indicates the minimum value to the 25th percentile and the top error bar indicates the 75th percentile to maximum value. PC=principal component.

Disclosures: Payton Schmidt: None, Luyun Chen: None, Janis Miller: None, John DeLancey: None, Carolyn Swenson: None

Scientific Salon 5

LEVATOR ANI SUBTENDED VOLUME (ELASV): A CLINICAL PREDICTOR FOR SURGICAL FAILURE IN UTEROSACRAL LIGAMENT SUSPENSION: AN INTER-OBSERVER RELIABILITY ANALYSIS

A. Wyman[1], S. Lai-Yuen[1], K. Greene[1], R. Bassaly[1], L. Hoyte[2], J. Salemi[3]. *University of South Florida*[1], *The Pelvic Floor Institute*[2], *University of South Florida College of Public Health*[3]

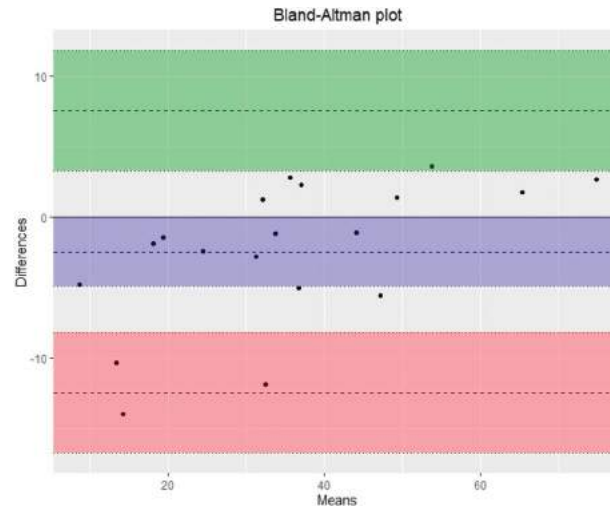
Objective: The levator ani subtended volume (eLASV) plays an important role in pelvic support [1-3]. eLASV is an easily attainable and reproducible objective MRI measurement that quantifies the integrity of the pelvic floor and has been previously described to predict surgical failure following a uterosacral ligament suspension (USLS) in a retrospective study [2,3]. The primary objective of this study is to evaluate the inter-observer reliability of the pelvic MRI measurements along with the calculation of eLASV for prediction of surgical failure in uterosacral ligament suspension (USLS).

Methods: This was a prospective cohort pilot study performed at a single institution. All patients were recruited and consented between 1/2018 and 12/2020 and included for final analysis if they underwent a pre-operative pelvic MRI, planned prolapse surgery (USLS), and followed up at least 1 yr post-operatively. Pelvic MRI measurements including the PCL, H-line, M-line were obtained by radiologists, and the width of the levator ani hiatus (WLH) was measured by clinicians [3]. The levator ani subtended volume (eLASV) was calculated as previously published eLASV = -72.838 + 0.598H-line+1.217 M-line +1.136WLH [3]. The study included four observers (2 radiologists and 2 clinicians) who obtained and recorded measurements independently and separately from each other. Two inter-rater teams were then constructed that would comprise the measurements needed to calculate eLASV. Team 1 was radiologist 1 (H-line and M-line measurements) and clinician 1 (WLH). Team 2 was radiologist 2 (H-line and M-line) and clinician 2 (WLH). A Bland–Altman plot, Lin concordance coefficient, Kappa concordance coefficient were used to study the reliability and agreement between the two observer teams.

Results: Fifty-one patients were consented for the study, 31 completed a pre-operative MRI, 27 underwent surgery (USLS), and 19 followed up for 1 yr post op exam and were included in the final analysis. A strong Lin concordance coefficient of 0.949 (95% CI: 0.891-0.977) for continuous data between the two inter-rater observer teams for eLASV was demonstrated. The Bland-Altman Agreement Plot demonstrates good agreement between the two teams with no linear trend (fig). A strong concordance was seen between the two radiologist observers for H-line [CCC = 0.992 (0.979,0.997)] and M-line [CCC = 0.990 (0.981,0.995)]. The concordance was high between the two clinician observers for the WLH measurement [CCC = 0.873 (0.712,0.947)]. When using eLASV as a clinical predictor and comparing the dichotomy of high volume eLASV versus low volume eLASV, there were 12 patients rated as "low eLASV" by both rater teams, 6 patients rated as "high eLASV" by both rater teams, and 1 patient in which the rater measurements resulted in a difference in the final classifications yielding a Kappa concordance of K = 0.883 (0.663,0.999).

Conclusions: Levator ani subtended volume (eLASV) is a highly repeatable and reliable calculation with high Lin concordance coefficient for continuous data between two independent observer teams and strong kappa concordance when employed as a clinical predictor for surgical outcomes after uterosacral ligament suspension.

1.PMID: 31401263 2.PMID: 22075059 3.PMID: 26596232



Disclosures: Allison Wyman: AUGS PFD Research Foundation: Grant/Research Support: Self, Pelvalon: Grant/Research Support: Self , Susana Lai-Yuen: None, Kristie Greene: Pelvalon: Grant/Research Support: Self , Renee Bassaly: None, Lennox Hoyte: None, Jason Salemi: None

Scientific Salon 6

NOVEL MEASUREMENT TECHNIQUE FOR QUANTIFYING ILIOCOCCYGEAL MUSCLE SHAPE CHANGE: FEASIBILITY AND METHODS DEVELOPMENT

W. Horner[1], C. Swenson[1], L. Chen[1], J. DeLancey[1]. *University of Michigan*[1]

Objective: A recent pilot MRI study of young and old nulliparous women discovered age-related pelvic floor change independent of parity lies in the iliococcygeal muscle (ICM) portion of the levators[1]. ICM changes may also play a role in prolapse development, yet to date, a validated measurement technique for quantifying ICM shape has not been developed. The goal of this study is to test the feasibility of a novel MRI-based measurement technique to trace the ICM and quantify ICM shape changes.

Methods: High resolution 2 mm x 2 mm resting sagittal, axial and coronal MR images are used to identify the ICM muscle bundle direction and quantify ICM shape change. Using 3D Slicer software, the following steps in the protocol were done: 1) Align axial, sagittal, and coronal MRI into the PICS system by identifying the pubic symphysis, sacrococcygeal joint, and bilateral ischial spines allowing comparison between subjects. 2) Identify the levator plate shape on mid-sagittal MRI. 3) Identify the ICM muscle bundle direction on parasagittal MRI. 4) Rotate axial and coronal MRIs to the plane parallel to the ICM muscle bundle direction at the level of the midpoint of the levator plate. 5) Trace the ICM muscle contour on a tipped plane using B-spline curves. The curves can then be used to analyze ICM shape differences between groups (Figure 1) with principal component analysis.

Results: The outlined protocol was feasible in identifying the ICM curves in 12 young and nine old nulliparous women. Figure 2 shows the typical age-related shape change in the ICM demonstrating overall convex ICM shape in young women compared to a concave shape older women.

Conclusions: This novel technique to quantify ICM shape changes is feasible. Convex to concave ICM shape change could contribute to the 80% larger levator bowel volume in older nulliparous. This technique can be used to quantify ICM shape changes with aging and pelvic floor disorders, thus opening a new research domain that previously did not exist.

1. Swenson CW, Masteling M, DeLancey JO, Nandikanti L, Schmidt P, Chen L. Aging effects on pelvic floor support: a pilot study comparing young versus older nulliparous women. Int Urogynecol J. 2020 Mar;31(3):535-543. doi: 10.1007/s00192-019-04063-z. Epub 2019 Aug 6. PMID: 31388719; PMCID: PMC7720445.

Figure 1. A) Mid-sagittal MRI with blue line showing the levator plate. B) Para-sagittal MRI with red lines showing ICM muscle bundle direction. C) Using slicer, tipped axial plane is placed at the mid-levator plate parallel to the ICM muscle bundle direction. D) Tracing of the ICM (red line) and levator plate (blue line). Labeled below are the pubic symphysis (PS), bladder (B), urethra (Ur), vagina (V), uterus (Ut), and rectum (R).

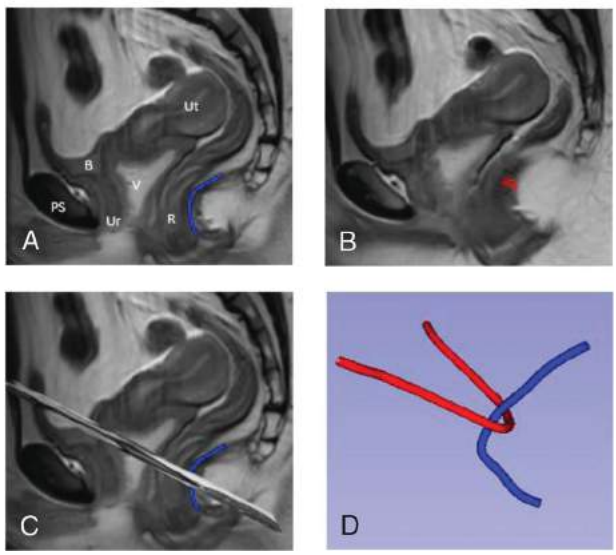
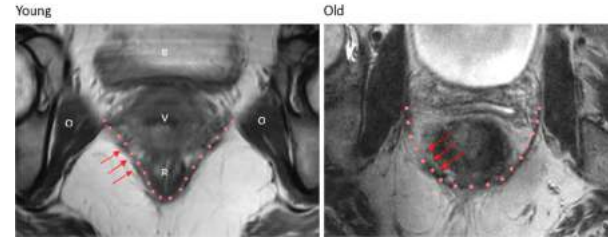


Figure 2. Tipped axial MR images of the iliococcygeus muscle (red fiducials) shape difference between young (convex) and old (concave) nulliparous woman without prolapse. Labeled are the bladder (B), vagina (V), rectum (R), and obturator internus (O).



Disclosures: Whitney Horner: None, Carolyn Swenson: None, Luyun Chen: None, John DeLancey: None

Scientific Salon 7

PERINEAL MEMBRANE: 3D TRANSVAGINAL ULTRASOUND OPTIMAL VISUALIZATION PLANE ASSESSMENT VERIFIED ON MRI

F. Pipitone[1], M. Masteling[1], L. Chen[1], C. Swenson[1], P. Fairchild[2], J. Milhem Haddad[3], J. DeLancey[2]. *Pelvic Floor Research Group - University of Michigan*[1], *University of Michigan Hospitals*[2], *Clinics Hospital of Sao Paulo University Medical School*[3]

Objective: The perineal membrane is a critical but poorly understood element of Level III hiatal closure. It is visible on MRI and six structural features have been defined and measured. Because ultrasound is more clinically available, we aim to determine its visibility in 3D transvaginal ultrasound (3D TVUS) and its relationship to adjacent structures as a basis for future sonographic measurement strategy development.

Methods: 3D TVUS and MRI scans were both obtained in six women 6-8 months postpartum from a study of postpartum pelvic floor recovery. Axial, coronal, and sagittal MR images were used to guide structure identification in 3D TVUS. Based on our prior work[1,2], the visibility of consistent anatomical relationships to the following structures were assessed: attachment at the ischiopubic rami, dorsal clitoral vessels (pudendal branches) that run in it, relations to vestibular bulb and clitoral crus, pubovisceral muscle, urethra/vagina, perineal body.

1,2: PMID 18310372, PMID 19375575

Results: 3D TVUS imaging planes have the following strengths: 1) Coronal: adequate and clear visualization of cranial (levator ani) and caudal (vestibular bulb and clitoral crus) margins; satisfactory visualization of medial (urethra/vagina) and lateral (ischiopubic rami) margins marked by pudendal branches (to be confirmed on axial plane) (Fig. 1); 2) Axial: adequate and clear visualization of medial (urethra/vagina) and lateral (ischiopubic rami) margins, and optimal visualization of anterior (pubic symphysis) and posterior (perineal body) margins; and 3) Sagittal: possible visualization of cranial and caudal margins but not to its full extent, and optimal for checking the most anterior point of the membrane (Fig. 2).

Conclusions: The coronal plane offers best visualization of the perineal membrane and its surrounding structures. However, the medial and lateral borders should be confirmed on axial plane for accurate identification and possible tracing of the membrane. *Comment:* 3D TVUS is a promising tool to measure perineal membrane changes in postpartum women and, with further studies, this knowledge could be applied to clinical practice.

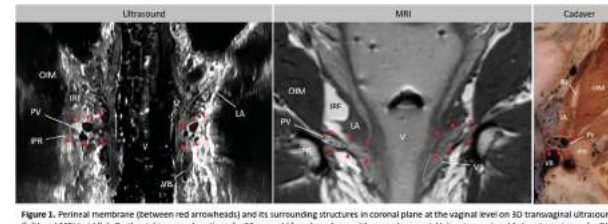


Figure 1. Perineal membrane (between red arrowheads) and its surrounding structures in coronal plane at the vaginal level on 3D transvaginal ultrasound (left) and MRI (middle). On the right, coronal section of a 33-year-old female cadaver with normal support. V denotes vagina; LA, Levator ani muscle; OIM, Obturator internus muscle; IPR, Ischiopubic ramus; IRF, Ischiorectal fossa; VB, Vestibular bulb; and PV, Pudendal vessels.

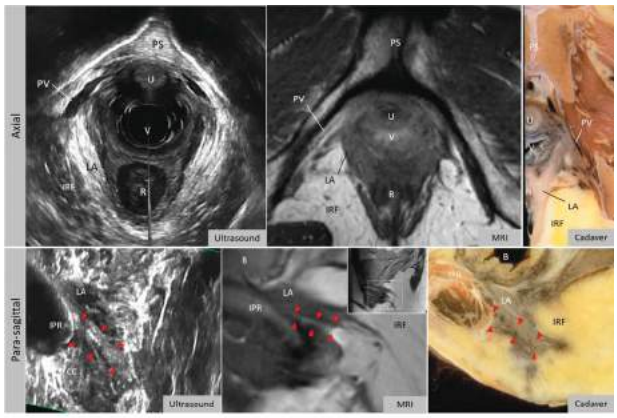


Figure 2. Perineal membrane (between red arrowheads) and its surrounding structures in axial (top row) and sagittal planes (bottom plane) on 3D transvaginal ultrasound and MRI, as labeled . On the right, coronal section of a 33-year-old female cadaver with normal support. Note that the perineal membrane is not marked on the axial images as this plane is tangent to it. V denotes vagina; U, urethra; R, Rectum; B, Bladder; LA, Levator ani muscle; IPR, Ischiopubic ramus; IRF, Ischio-rectal fossa; PS, pubic symphysis; CC, Crus of clitoris; and PV, Pudendal vessels.

Disclosures: Fernanda Pipitone: None, Mariana Masteling: None, Luyun Chen: None, Carolyn Swenson: None, Pamela Fairchild: None, Jorge Milhem Haddad: None, John DeLancey: None

Scientific Salon 8
USING MRI TO EVALUATE DIFFERENCES IN LEVEL III MEASURES BETWEEN YOUNG AND OLDER WOMEN WITH PROLAPSE

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Objective: The mechanisms by which young and older women develop prolapse may differ and to date, these differences are unknown. The purpose of this study was to test the null hypothesis that there is no difference in resting MRI Level III measures between young and older women with prolapse.

Methods: This was a secondary analysis of pelvic MRIs of women with prolapse in two groups: 1) young, <40 years (Y-POP) and 2) old, ≥70 years (O-POP). Demographics, obstetric data, hysterectomy status, and clinical exam data including POP-Q measurements and maximum prolapse size were compared between groups. The following Level III measurements on mid-sagittal resting MRIs were performed using ImageJ: urogenital hiatus (UGH), levator hiatus (LH), levator area (LA), and levator plate (LP) shape (Figure 1A). Levator plate was traced along the inside of the levators starting at the top of the anal sphincter complex and ending at the coccyx. With the exception of LP, MRI measurements were compared between the young and old prolapse groups using student's t-tests. Principal component analysis was used to quantify resting LP shape variation between groups (Figure 1C). Two independent shape variations were identified (PC1, PC2). Positive PC1 scores corresponded to a more vertical position of the LP in relation to the body axis indicating a lower pelvic floor. Principal component scores were compared between young and old using student's t-tests.

Results: Thirty-two women were included: 11 (34.4%) in the young (mean age 35.7 ± 5.2 years) group and 21 (65.6%) in the older (mean age 75.1 ± 4.0 years) group. Several POP-Q measures differed between Y-POP and O-POP: Ba (0(-1, 1.5) vs 3(1.0, 4.0), $P = .03$), D (-8(-8.5, -6.5) vs -6(-6.5, -1.0), $P = .02$) resting GH (2(2.0, 3.0) vs 4.5 (3.5, 5.0), $P < .001$) and max prolapse size (1(0.5, 1.5) vs 6(4.5, 7.5), $P < .001$). O-POP had 14.7% larger GH ($P = .08$) and 12.3% larger LH ($P = .06$) and 38.2%% larger levator area ($P = .02$) on MRI measures with trending statistical significance. Analysis of resting LP shape found that PC1 and PC2 accounted for 67% and 24% of the variability, respectively. Compared to young women, older women had significantly larger PC1 scores (-17.9 vs 9.4, $P = .001$), but similar PC2 scores (1.2 vs -0.6, $P = .73$) (Figure 1D). PC1 scores for resting LP shape among 11 women in the older group overlapped with those in the young group while 48% (n = 10) were outside of the range of the young group.

Conclusions: We reject our null hypotheses. Resting Level III MRI measures in older, versus young, women with prolapse show a more vertical LP orientation and larger urogenital hiatus. On POP-Q, older women also had larger prolapses. The presence of a more horizontal LP orientation in young women suggests that LP impairment plays only a minor role in prolapse development in young women. Prior research has shown LP shape changes with age even in the absence of prolapse which suggests that impaired LP support may contribute to worsening prolapse and may be a potential therapeutic target.

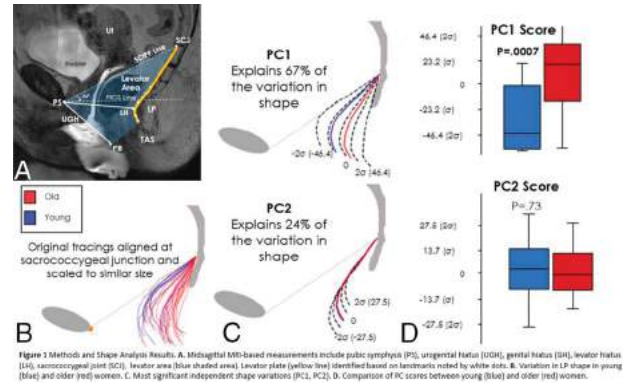

Figure 1 Methods and Shape Analysis Results. A. Midsagittal MRI-based measurements include pubic symphysis (PS), urogenital hiatus (UGH), genital hiatus (GH), levator hiatus (LH), sacrococcygeal joint (SCJ), levator area (blue shaded area). Levator plate (yellow line) identified based on landmarks noted by white dots. B. Variation in LP shape in young (blue) and older (red) women. C. Most significant independent shape variations (PC1, PC2). D. Comparison of PC scores between young (blue) and older (red) women.

Disclosures: Mary Duarte Thibault: None, Markus Huebner: None, Luyun Chen: None, Carolyn Swenson: None

Scientific Salon 9
AUTOMATIC ANATOMICAL LANDMARK DETECTION AND SEGMENTATION IN THREE-DIMENSIONAL FEMALE PELVIC FLOOR ULTRASOUND

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Objective: Our primary objective was to develop and evaluate a fully automatic technique to identify the pubic symphysis (PS) and anorectal angle (ARA), and extract the plane of minimal hiatal dimensions (PMHD) in three-dimensional (3D) transperineal ultrasound images. Our secondary objective was to perform automatic segmentation of the levator hiatus on the extracted PMHD images.

Methods: This study included 108 three-dimensional ultrasound image series of the female pelvic floor from the institutional database of ≥18-year-old females with stress urinary incontinence. The images were obtained as part of another research study.

The computational framework consists of (1) pre-processing and contrast enhancement, (2) PS localization using a probability map, (3) ARA localization via edge detection, and (4) consistency check, to ensure the midsagittal plane is identified correctly. The detected landmarks were used to extract the PMHD automatically. The levator hiatus was then determined using a deep learning technique (U-Net). The dataset was randomly split into a training set of 73 images and a testing set of 35 images. A ground truth dataset was developed through manual segmentation of the landmarks, PMHD, and levator ani by three trained evluators, overseen by an expert urogynecologist.

For performance evaluation, the location of the automatically detected landmarks from the 35-testing dataset was compared to the corresponding ground truth by calculating (1) the absolute distance between the predicted and ground truth landmarks, (2) the effective perpendicular distance between the predicted landmark and ground truth PMHD, and (3) the angular difference between the predicted and ground truth PMHD. The automatic segmentation of the levator hiatus was assessed using the Dice metric.

Results: The results from the anatomy localization are summarized in Table 1. The deep learning algorithm was able to perform a relatively accurate segmentation of the PMHD with an average Dice score of 0.89. Examples of the automatically extracted PMHD and the segmentation results are shown in Figure 1.

Conclusions: We developed and evaluated an algorithm to automatically extract the PMHD and segment the levator ani in 3D transperineal ultrasound with a high degree of accuracy. Currently, this task is performed manually, a time-consuming and tedious process. This work has potential to improve the clinical workflow and throughput of ultrasound image evaluation.

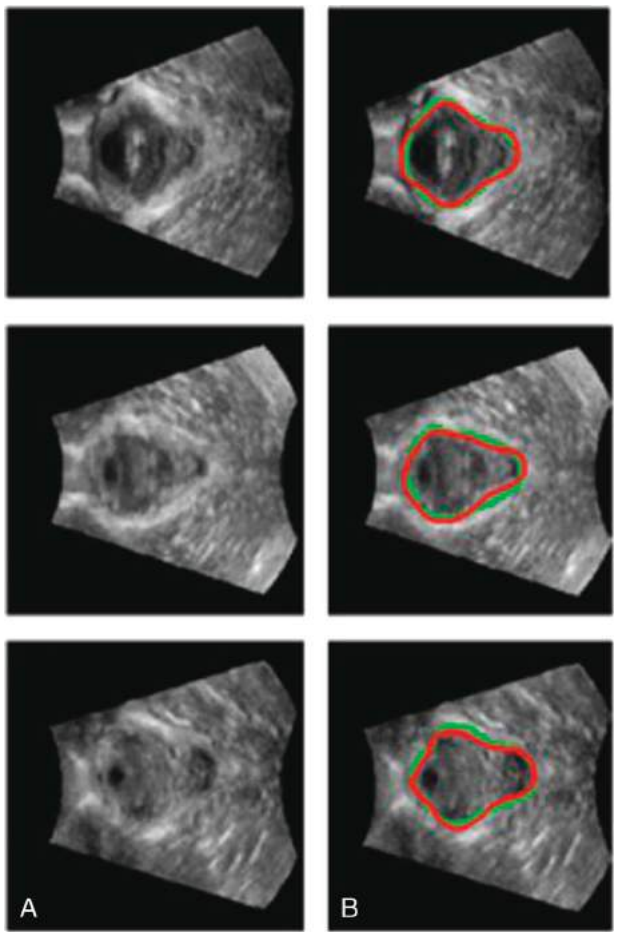

Table 1: average and median distance differences between the automatic and the ground truth segmentations

Metrics	PS effective distance difference (mm)	ARA effective distance difference (mm)	PS absolute distance difference (mm)	ARA absolute distance difference (mm)	Plane angle difference (degree)
Average ± Standard deviation	2.51 ± 2.21	2.47 ± 2.17	4.70 ± 2.61	3.05 ± 2.48	4.11 ± 3.32
Median	1.82	1.86	3.05	2.36	3.63

Disclosures: Wenyao Xia: None, Golafsoun Ameri: Cosm Medical: I am a full-time employee at Cosm Medical: Self , Christopher Hong: Cosm Medical: Consultant: Self , Djalal Fakim: None, Humayon Akhuanzada: None, Malik Zain Raza: None, S. Abbas Shobeiri: None, Linda McLean: None, Elvis Chen: None

Scientific Salon 10
BEYOND RACE AS A VARIABLE: ASSESSING INCLUSION OF RACE AND ETHNICITY IN STUDIES USED TO ADVISE GUIDELINES ON PREVENTION AND MANAGEMENT OF OBSTETRIC LACERATIONS AT VAGINAL DELIVERY

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Objective: Our primary objective was to examine the relevance of race and ethnicity in studies used to compile the guidelines in the American College of Obstetrics and Gynecology (ACOG) Practice Bulletin No. 165 (PB 165): Prevention and Management of Obstetric Lacerations at Vaginal Delivery. The practice bulletin presents race and ethnicity as a risk factor for obstetric lacerations; however, it is unclear if the studies cited in the practice bulletin consistently included diverse populations and if included, it is unknown whether race was noted to be a biologic construct–a known misconception–or a sociocultural phenomenon. Additionally, we sought to investigate the degree to which our professional guidelines report on barriers to care when it comes to follow up for patients who require closer surveillance at postpartum.

Methods: This is an IRB exempt descriptive study of an evaluation of the 78 articles cited in PB 165. We only included articles that involved a patient population that is clinically studied. We then evaluated each study on the basis of: whether or not report of race or ethnicity in the population studied was included in the study, the distribution of racial/ethnic groups in the studies that did report on race and ethnicity, and, if there were reported associations between race/ethnicity and risk of having obstetric anal sphincter injuries (OASIS). We excluded articles that lacked a primary cohort, such as systematic or literature reviews, FDA statements, or other professional guideline documents.

Results: Of the 78 articles, only 48 articles reported findings from an experimental study design that included a clinical population (61%), of which only 20 included racially disparate groups in their study (41%). Of the articles that included race in their subgroup analyses, only 25% included Black participants, 18.75% Latino participants, 18.75% Asian participants, NH/PI 6%, and 2% AI. Four of the articles noted that race is predictive for OASIS tears; three articles reported that being of Asian race is a predictor for OASIS tears and two articles concluded that Black race was associated with a decreased risk of OASIS tears. There was only cursory mention of why these race-based associations were made. Of the studies that reported on race/ethnicity and performed subanalyses by racial/ethnic group, none discussed socioeconomic or cultural barriers to access or quality of care.

Conclusions: The ACOG PB No. 165 includes studies that lack diverse representation and have limited emphasis on post-repair sequelae for communities of color, highlighting the need for more inclusive study recruitment strategies and further studies into socioeconomic and cultural behavior patterns to achieve equitable postpartum care for patients with OASIS tears.

Disclosures: Shilpa Darivemula: None, Julia Dexter: None, Tambu Kudze: None, Moiuri Siddique: None

Scientific Salon 11
PATIENT BARRIERS AND FACILITATORS TO HEALTH SERVICE UTILIZATION FOR PELVIC FLOOR DISORDERS IN THE US: A SYSTEMATIC REVIEW AND META-ANALYSIS OF QUALITATIVE AND QUANTITATIVE STUDIES

T. Mou[1], J. Gonzalez[2], A. Gupta[3], M. O'Shea[4], M. Duarte Thibault[5], E. Gray[1], M. Beestrum[6], O. Brown[7], S. Cichowski[8]. *Northwestern University Feinberg School of Medicine[1], Oregon Health & Science University[2], Mercy Hospital and Medical Center[3], Duke University[4], University of Michigan[5], Galter Health Sciences Libary Northwestern University[6], Northwestern University[7], Oregon Health and Sciences University[8]*

Objective: This review aimed to synthesize and identify barriers/facilitators of health service utilization (HSU) behaviors in American women with pelvic floor disorders (PFDs) using Andersen's health behavior model.

Methods: A systematic search of MEDLINE, EMBASE, Cochrane, and Scopus was conducted from inception until December 7, 2020. Studies were limited to populations of American women with symptomatic PFDs. Resulting abstracts were screened by 7 reviewers. We included studies with specific aims to examine care-seekers and/or non-seekers. We then used Andersen's model to identify determinants of HSU behaviors specific to PFDs. This model uses four clusters of factors: macrostructure, predispositions, resources, and individual healthcare needs to describe a populations' HSU. Finally, we performed meta-analyses to determine the pooled estimates of HSU rates as well as each determinant's effect on HSU behaviors using R with the metafor package.

Results: From an initial total of 7,811 abstracts, 44 eligible studies were included. Seventy-five percent of the studies (33/44) were on lower urinary tract symptoms, while only 4.5% (2/44) addressed pelvic organ prolapse, 9.1% (4/44) on fecal incontinence, and the rest assessing >1 PFDs (11.4%, 5/44). The pooled HSU rate for PFDs was 37% (95%CI 30-45%) (Fig 1). Evaluation of HSU rates over nearly 3 decades revealed no significant trend ($p = 0.108$). There was also no difference in HSU rates between the PFDs. Both qualitative and quantitative studies found determinants across all domains except for macrostructure (Fig 2). Finally, meta-analyses showed that only some of the previously identified determinants were not predictive for HSU behaviors across studies.

Conclusions: This review identified consistently low HSU rates for PFDs and a gap in knowledge on how macrostructure may impact HSU behaviors. However, several HSU determinants were identified and demonstrated consistent predictability across multiple levels of Andersen's model. These findings indicate the needs for multi-faceted investigations to complete providers' understanding of HSU behaviors specific to PFDs, as well as multi-level interventions to achieve health equity in women with PFDs.

Figure 1. Forest Plot of Health Service Utilization Rates for Women with Pelvic Floor Disorders

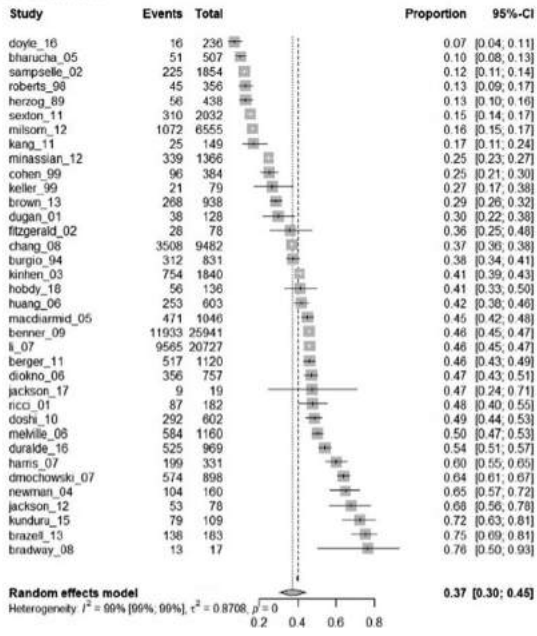

Figure 2. Barriers/Facilitators Identified from Systematic Review Using an Analytical Framework of Health Service Utilization for Women with Pelvic Floor Disorders

Disclosures: Tsung Mou: None, Javier Gonzalez: None, Ankita Gupta: None, Michele O'Shea: None, Mary Duarte Thibault: None, Elizabeth Gray: None, Molly Beestrum: None, Oluwateniola Brown: None, Sara Cichowski: None

Scientific Salon 12
MISSING HISTORY: THE LEGACY OF ANARCHA, BETSEY, AND LUCY IN CURRENT AND HISTORICAL GYNECOLOGIC TEXTBOOKS

C. Sanchez[1], B. Johnson[2], K. Woodburn[3], E. Trowbridge[4], G. Northington[5], C. Iglesia[6]. *Georgetown University[1], Georgetown University School of Medicine[2], Georgetown/MedStar Washington Hospital Center[3], Universit of Virginia[4], Emory University School of Medicine[5], MedStar Washington Hospital Center and Georgetown University School of Medicine[6]*

Objective: The legacy of Dr. J. Marion Sims as the father of gynecology is now widely recognized as controversial given the ethical questions raised in developing his surgical techniques. Modern day gynecological texts continue to lack acknowledgement of the contributions of Anarcha, Betsey, Lucy and the other enslaved women on whom he operated for the advancement of gynecologic surgery and repair of vaginal fistulas. The objective of this study is to compare the portrayal of J. Marion Sims and these named and unnamed women within current gynecology textbooks, prior editions and historical medical literature.

Methods: A descriptive review of current major gynecologic surgery textbooks, including prior editions of these textbooks and historical medical literature was performed. Sources were identified by and agreed upon by the authors. Each source was reviewed by at least 2 investigators for mentions of Dr. Sims and the enslaved women.

Results: We identified 35 current gynecologic titles meeting inclusion criteria. Of these, 19 had more than one edition with a median number of 2 editions and a total of 106 editions. Thirty six editions from 13 different titles were unable to be accessed. A total of 70 books from all 35 titles were reviewed. Sims was mentioned by 25 (71%) titles, totaling 49 (70%) books. Of these, 12 (48%) titles and 20 (41%) books mentioned Sims only in reference to his surgical technique or instruments. Only 7 (20%) titles and 17 (24%) of the books had any mention of "slaves," with just 3 (9%) titles and 8 (11%) books referencing the women by name. Anarcha was referenced by name in 3 (9%) titles and 8 (11%) books, with a total of 18 mentions. In stark contrast, both Betsey and Lucy were referenced by name in only 1 (3%) title and 2 (3%) books, with only 2 total mentions each. There was no increased mention of the enslaved women over time [1976-2020] and one title stopped mentioning the women by name in more current editions [2008].

Seven primary historical literature sources were identified, three from J. Marion Sims and four from his colleagues. Only two (28.6%) of the original works mentioned Sims' experimentation on enslaved women and also referenced the three women by name. Anarcha was mentioned a total of 15 times, Betsey 8, and Lucy 14. The majority of the references to the women were found in Sims' autobiography, not the primary medical literature.

Conclusions: There is a significant discrepancy between the mentioning of J. Marion Sims versus the enslaved women on which he developed gynecologic surgical techniques. Neither current gynecologic surgery textbooks or primary historical sources contain significant references to these women. There has been little change in the inclusion of these women's stories despite the controversy surrounding the legacy of J. Marion Sims. Our findings support opportunities to highlight the contributions of Anarcha, Betsey, Lucy and the unnamed enslaved women who greatly contributed to the advancements in our field.

Mentioned in Texts	Titles (n=35)	Books (n=70)	Historical Literature (n=7)
Sims	25 (71%)	49 (70%)	n/a
Sims History	13 (37%)	29 (41%)	n/a
Enslaved Women	7 (20%)	17 (24%)	2 (29%)
Anarcha, Betsey, Lucy	3 (9%)	8 (11%)	2 (29%)

Table 1. Subject Mentions in Modern and Historical Gynecologic Sources

Disclosures: Ciara Sanchez: None, Bria Johnson: None, Katherine Woodburn: None, Elisa Trowbridge: None, Gina Northington: Boston Scientific: Grant/Research Support: Self , Cheryl Iglesia: None

Scientific Salon 13
RISK FACTORS AND TREATMENT PATTERNS FOR WOMEN WITH FECAL INCONTINENCE IN A RACIALLY DIVERSE POPULATION

W. Clearwater[1], L. Cosgriff[1], R. Leon Rivera[2], P. Kadam Halani[3]. *Montefiore Medical Center[1], Albert Einstein College of Medicine[2], Montefiore Medical Center/Albert Einstein COM[3]*

Objective: Data on racial differences in risk factors and treatment for women with fecal incontinence (FI) are limited; existing studies have examined predominantly White populations. We aimed to evaluate differences in risk factors and treatment patterns for FI in a racially and ethnically diverse population.

Methods: We conducted a retrospective study of women ≥18 years with an ICD-9 or ICD-10 diagnosis code for FI seen at a tertiary health system in an urban underserved community from January 1, 2016 and August 1, 2020. We excluded women with neurogenic etiology of FI, colorectal malignancy, rectal prolapse, and inflammatory bowel disease. Information on demographics and risk factors for FI including age, BMI, presence of constipation or loose stools, history of anorectal surgery or trauma, diabetes, and urinary incontinence was collected. Socioeconomic status (SES) was approximated by recording the percentage of the population living below the poverty line in each zip code based on US Census data. Treatment for FI was measured by consultation with a specialist, undergoing diagnostic testing, medication use, pelvic floor physical therapy (PFPT), or surgical management. Risk factors and treatment measures were compared between racial/ethnic groups using ANOVA, Fisher's exact or chi-square test for continuous and categorical variables, respectively. Multivariable logistic regression was performed to control for patient characteristics.

Results: One-hundred forty-nine women were included in the analysis: 37% White, 36% Hispanic, 16% Black, and 11% other (Table 1). Hispanic and Black women had a significantly lower SES than White women. Hispanic women had significantly higher BMI, higher rate of diabetes and smoking, and were younger compared to other groups. Other risk factors did not differ between groups. Hispanic and Black women utilized PFPT significantly less than White women (Table 1); this difference remained significant after controlling for age, BMI, SES, diabetes, and smoking status ($p = 0.03$). There were no differences in specialist consultation, diagnostic testing, medication use, or surgery between groups. There were significant differences between race and undergoing anorectal manometry,

endoanal ultrasound, and MR defecography on univariate analysis; these findings did not persist after controlling for patient characteristics.

Conclusions: Differences in risk factors and treatment patterns for FI exist between racial/ethnic groups. Further studies are needed to evaluate whether racial differences in FI risk factors and treatment patterns impact diagnosis, treatment outcomes, and patient satisfaction and whether treatment differences are attributable to the preferences of patients or provider practice.

	Characteristics	All participants n=149	Hispanic n=54	Black n=24	White n=55	Other / Declined n=16	p
Risk factors	Age	64.0 (15.3)	59.2 (16.3)	65.3 (13.3)	68.3 (13.7)	63.8 (16.1)	0.02
	Parity, median (IQR)	2 (1 - 3)	2 (2 - 4)	2 (1 - 4)	2 (1 - 2)	2 (1 - 3)	0.4
	BMI (kg/m^2)	28.8 (6.3)	30.5 (6.2)	28.5 (5.4)	26.9 (5.7)	29.4 (8.3)	0.03
	Socioeconomic status[a]	20.0 (13.3)	29.8 (9.9)	24.8 (11.0)	8.7 (6.8)	18.4 (12.7)	0.0001
	Diabetes	35 (23.5)	17 (31.5)	11 (45.8)	6 (10.9)	1 (6.3)	0.001
	Current smoker	31 (22.0)	19 (37.3)	6 (25.0)	3 (5.8)	3 (21.4)	0.001
	Constipation	35 (23.5)	17 (31.5)	7 (29.2)	9 (16.4)	2 (12.5)	0.2
	Loose stools	36 (24.2)	19 (35.2)	7 (29.2)	8 (14.6)	2 (12.5)	0.05
	Irritable bowel syndrome	6 (4.0)	1 (1.9)	3 (12.5)	2 (3.6)	0 (0)	0.2
	Urinary incontinence	33 (22.2)	17 (31.5)	7 (29.2)	6 (10.9)	3 (18.8)	0.06
	History of anorectal surgery	4 (2.7)	1 (1.9)	2 (8.3)	0 (0)	1 (6.3)	0.1
	Impaired mobility	4 (2.7)	3 (5.6)	0 (0)	0 (0)	1 (6.3)	0.2
	Dementia	4 (2.7)	3 (5.6)	1 (4.2)	0 (0)	0 (0)	0.3
Treatment	Specialist consultation	116 (77.9)	38 (70.4)	18 (75.0)	46 (83.6)	14 (87.5)	0.3
	Diagnostic testing	77 (51.7)	31 (57.4)	14 (58.3)	27 (49.1)	5 (31.3)	0.3
	Anorectal manometry	18 (12.1)	8 (14.8)	0 (0)	10 (18.2)	0 (0)	0.04
	Endoanal ultrasound	11 (7.4)	0 (0)	1 (4.2)	9 (16.4)	1 (6.3)	0.01
	MR defecography	37 (24.8)	18 (33.3)	10 (41.7)	6 (10.9)	3 (18.8)	0.01
	Other	13 (8.7)	6 (11.1)	3 (12.5)	3 (5.5)	1 (6.3)	0.6
	Medications	68 (45.6)	24 (44.4)	12 (50.0)	22 (40.0)	10 (62.5)	0.4
	Fiber	50 (33.6)	18 (33.3)	8 (33.3)	16 (29.1)	8 (50.0)	0.5
	Stool softener	19 (12.8)	11 (20.4)	2 (8.3)	4 (7.3)	2 (12.5)	0.2
	Anti-diarrheal	20 (13.4)	4 (7.4)	5 (20.8)	6 (10.9)	5 (31.3)	0.06
	Other	5 (3.4)	0 (0)	1 (4.2)	3 (5.5)	1 (6.3)	0.3
	PFPT	37 (24.8)	9 (16.7)	3 (12.5)	20 (36.4)	5 (31.3)	0.04
	SNM	26 (17.5)	13 (24.1)	3 (12.5)	9 (16.4)	1 (6.3)	0.4
	Sphincteroplasty	0 (0)	-	-	-	-	-
	Other	4 (2.7)	3 (5.6)	1 (4.2)	0 (0)	0 (0)	0.3

Data are presented as mean (SD) or n (%) unless otherwise noted.
[a] Defined as percent living below poverty line by zip code based on US Census data.

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Scientific Salon 14
A SYSTEMIC REVIEW OF PUBLISHED RESEARCH ON SOCIODEMOGRAPHIC FACTORS IN UROGYNECOLOGY

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Objective: Research identifying and reporting sociodemographic health inequities is imperative in optimizing patient care and informing future study. Our primary objective was to characterize the literature describing sociodemographic disparities in urogynecologic care. We also sought to identify themes reported in the literature and urogynecology disease conditions examined in this sphere.

Methods: This was a systematic literature review of publications examining sociodemographic differences among women in the United States receiving care for urogynecologic conditions. A literature search of studies published in PubMed, Scopus, and CINAHL databases through 2020 was conducted in January 2021. The study design was registered and published to Prospero. Covidence was used for screening, full-text review, and study extraction. Quantitative studies were included if they evaluated women-specific disparities within the field of urogynecology. Sociodemographic factors used to determine disparities included race/ethnicity, language, socioeconomic status, insurance payor, distance to care, educational level, and marital status. Our primary outcome was to report the number of studies for each sociodemographic factor. Our secondary outcomes were to 1) identify overarching themes of the publications, 2) quantify the number of publications for each identified theme, and 3) report the number of studies evaluating disparities in four common urogynecologic conditions: stress urinary incontinence, overactive bladder, pelvic organ prolapse, and fecal incontinence.

Results: The initial literature search resulted in 1458 studies for screening. After removing 53 duplicates, 1405 abstracts were screened, of which 75 full-text studies were assessed for eligibility. After full-text review, 52 studies met review inclusion criteria. When quantifying the defined sociodemographic factors, 34 studies examined race/ethnicity, eight examined socioeconomic status, and seven examined education level. Four overarching themes within the literature were identified: differences in disease prevalence (n = 33), treatment outcomes (n = 15), treatment obtained (n = 14), and condition or treatment-specific knowledge (n = 4). With regard to Urogynecologic conditions: 29 studies examined all types of urinary incontinence, six examined stress urinary incontinence alone, 12 examined urgency urinary incontinence or overactive bladder alone, 12 examined pelvic organ prolapse, and six examined fecal incontinence.

Conclusions: In this review of sociodemographic disparities in care for urogynecologic conditions, the most commonly studied sociodemographic factor was race/ethnicity. Importantly, we identified a dearth of data describing care by numerous, other sociodemographic factors. The most commonly studied themes were assessment of disease prevalence, treatment provided, and treatment outcomes. The distribution of urogynecologic conditions studied, with urinary incontinence most frequently cited, was representative of the prevalence of these disease conditions,. These results demonstrate a relative paucity of information in this sphere and inform future research that should more fully characterize healthcare disparities in urogynecology.

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Scientific Salon 15
ILLUSTRATIONS TO ASSESS SYMPTOMATIC PROLAPSE AND URINARY INCONTINENCE AMONG WOMEN IN WESTERN KENYA

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Objective: To develop a patient-centered pictorial scale to assess symptomatic pelvic organ prolapse (POP) and urinary incontinence (UI) among women in western Kenya.

Methods: Initial candidate pictorial representations of POP, stress urinary incontinence (SUI), and urgency urinary incontinence (UUI) were developed by a local Kenyan artist. The illustrations underwent review by an expert group of gynecologists and urogynecologists from Kisumu, Kenya and Durham, USA, and were subsequently revised to optimally reflect each pelvic floor disorder. Emotional representations of how POP or UI may impact a patient were downloaded from the Noun Project online symbol database. Virtual individual Zoom interviews were then conducted with gynecologic providers in Kisumu, Kenya soliciting feedback on the appropriateness of the illustrations among their patient population. Illustrations were revised following each round of interviews using an iterative approach.

Results: Sixteen virtual interviews were conducted with 9 nurses, 3 residents, and 4 attending gynecologists between October and December 2020. Illustrations representing POP, SUI and UUI were revised to more clearly reflect each disorder and decrease confusion with other conditions such as abdominal pain, urogenital fistula, and menorrhagia. All candidate emotion symbols were deemed too abstract to be readily interpreted by patients as discrete emotional states, and thus a new set of illustrations were developed to depict life-like representations of positive, negative, and neutral emotions associated with POP and UI.

Conclusions: Virtual interviews were successfully utilized with Kenyan gynecologic providers to create a refined set of illustrations representing symptomatic POP and UI. Cognitive testing of these illustrations among Kenyan women seeking gynecologic care is currently underway with the ultimate goal of developing a finalized set of patient-appropriate illustrations.

Figure 1. Illustrations of pelvic organ prolapse and urinary incontinence

A. Pelvic organ prolapse, B. Stress urinary incontinence, C. Urgency urinary incontinence

Figure 2. Illustrations of negative, neutral, and positive emotions associated with POP and UI

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Scientific Salon 16
COMPARING PATIENT AND PHYSICIAN PERCEIVED INVOLVEMENT IN DECISION MAKING AFTER INITIAL UROGYNECOLOGY CONSULTATION

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Objective: We compare patient-perceived level of involvement in medical decision-making to physician's perception of patient involvement after their initial urogynecology visit.

Methods: This prospective cohort study enrolled English-speaking adult women presenting for an initial visit at an academic urogynecology clinic. After seeing the physician, patients completed the Control Preference Scale (CPS), which categorizes the role that patients felt they played in their medical decision-making: active (patient made the decision), collaborative (patient made the decision with the physician), or passive (the physician made the decision). Physicians also completed a CPS asking how active, collaborative or passive they perceived the patients were in the decision-making. The physician who spent the most time with the patient during the visit completed the CPS—a urogynecology fellow, obstetrics and gynecology resident or urology resident. Patients also completed a demographic questionnaire, a baseline CPS, the Pelvic Floor Distress Inventory (PFDI), CollaboRATE (querying how collaborative the visit was), Patient Global Impression of Improvement (PGII), patient satisfaction (PS), and Short Test of Functional Health Literacy in Adults (S-TOFHLA) questionnaires. Univariable and multivariable generalized estimating equations were used to compare the odds of reporting a more passive or collaborative CPS response between patient and physician.

Results: 100 women, mean age 59.1 (SD = 15.5), participated in the study. Forty percent of women felt they played an active role in medical decision-making compared to 28% of women who the physician reported played an active role. Likewise, 11% of patient's perceived their role as passive while physicians reported that 21% of patients played a passive role. The remaining responses (47% of patients and 50% of physicians) perceived collaborative patient decision-making. There was poor agreement in the patient and physicians' CPS responses after the visit ($\kappa = 0.02$, 95% CI: -0.12 to 0.16; exact $P = .85$). See Table 1 for the paired patient and physician CPS responses. On multivariable analysis controlling for baseline CPS response, ethnicity, and POPDI score (which were associated with patient CPS score on univariable analysis), physicians were approximately 1.93 (95% CI: 1.10 – 3.39) times more likely than participants to report any non-active (passive or collaborative) CPS response ($P = .02$).

Conclusions: After the initial urogynecology visit, there is poor agreement between the patient-perceived involvement in decision-making and physicians' perceptions of patient involvement. Patients perceived more active involvement; however, physicians are more likely to report that the patient had a non-active (passive or collaborative) role. The disparity between patient and physicians' perceptions may impact the patient-physician relationship.

Table 1. Paired Patient and Physician CPS Response

		Physician CPS Responses			
		Active	Collaborative	Passive	Total
Patient CPS responses	Active	12	20	8	40
	Collaborative	13	23	11	47
	Passive	2	7	2	11
	Total	28	50	21	100

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Scientific Salon 17
BLACK RACE, PRIOR DEPRESSION, AND PTSD ARE ASSOCIATED WITH INCREASED PAIN AND DEPRESSION SYMPTOMS IN A COHORT OF WOMEN WITH INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME

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Objective: To determine whether pain and depression symptoms in patients with Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS) differ by race or by associated conditions and to determine whether there is a correlation between pain and depression severity among IC/BPS patients.

Methods: We prospectively enrolled female patients within the nationwide Veterans Health Administration (VHA) to complete questionnaires. Participants were stratified into cohorts: 1. Those meeting diagnostic criteria for IC/BPS 2. Those with genitourinary conditions similar to but not meeting criteria for IC/BPS ("IC-like") and 3. Healthy controls. The Female Genitourinary Pain Index (fGUPI) was used to quantify pain symptoms and the Beck Depression Inventory (BDI) to quantify depression symptoms. For both questionnaires, higher scores indicate more severe symptoms. Within the IC/BPS cohort, fGUPI and BDI scores were stratified by race, ethnicity, history of depression, history of Post-Traumatic Stress Disorder (PTSD) and history of Irritable Bowel Syndrome (IBS). Demographic characteristics stratified by cohorts of interest were compared using the Kruskal Wallis test for continuous variables and the Chi-Square test for categorical variables. A Spearman rank correlation coefficient was used to measure the association between pain and depression symptoms among the women in the IC/BPS cohort.

Results: A total of 232 women completed both questionnaires. There was no significant difference in age, race, or ethnicity between the three cohorts. The IC/BPS cohort had higher median fGUPI and BDI scores than either the "IC-like" cohort or the healthy controls (Table 1). Black women with IC/BPS reported higher fGUPI scores than non-Black women (31 vs 25, $P = 0.014$) as well as higher BDI scores (23 vs 16, $P = 0.009$). Women with IC/BPS reported higher fGUPI and BDI scores if they had a history of depression or PTSD. Among women with IC/BPS, there was a moderate, but significant correlation between fGUPI and BDI scores ($\rho = 0.520$, $P < 0.0001$).

Conclusions: Among a cohort of female VHA patients, those with IC/BPS reported higher levels of pain and depression than those with IC-like conditions or healthy controls. Black women with IC/BPS reported more severe pain and depression symptoms than non-Black women. There was a significant positive correlation between pain severity and depression severity among women with IC/BPS.

Table 1: Patient Characteristics

	Diagnosed with IC (N=134)	IC-Like (N=43)	Healthy Control (N=55)	p value
Age at time of consent				0.502[1]
Median	51	50	50	
Q1, Q3	43, 60	39, 62	38, 59	
Race				0.622[2]
Black	37 (28%)	9 (21%)	16 (29%)	
Non-black	97 (72%)	34 (79%)	39 (71%)	
Ethnicity				0.459[2]
Hispanic	10 (7%)	1 (2%)	3 (5%)	
Not Hispanic	124 (93%)	42 (98%)	52 (95%)	
History of depression				0.067[2]
Yes	72 (54%)	24 (56%)	20 (36%)	
History of alcohol abuse				0.931[2]
Yes	11 (8%)	3 (7%)	5 (9%)	
PTSD				0.148[2]
Yes	72 (54%)	22 (51%)	21 (38%)	
IBS				0.058[2]
Yes	42 (31%)	11 (26%)	8 (15%)	
fGUPI score				<0.001[1]
Median	27	16	3	
Q1, Q3	18, 34	3, 27	1, 12	
BDI score				0.013[1]
Median	19	18	12	
Q1, Q3	11, 29	10, 27	4, 23	

[1]Kruskal Wallis [2]Chi-Square

Table 2: Patient Characteristics among IC patients

	Black (N=37)	Non-black (N=97)	p value
Stratified by Race			
fGUPI score			0.014[1]
Median	31	25	
Q1, Q3	24, 37	18, 32	
BDI score			0.009[1]
Median	23	16	
Q1, Q3	15, 39	10, 26	
Stratified by history of depression			
	No (N=62)	Yes (N=72)	p value
fGUPI score			0.046[1]
Median	24	28.5	
Q1, Q3	16, 32	20.5, 35	
BDI score			0.001[1]
Median	14.5	24	
Q1, Q3	9, 22	13, 36.5	
Stratified by history of PTSD			
	No (N=62)	Yes (N=72)	p value
fGUPI score			0.017[1]
Median	24	29	
Q1, Q3	16, 32	23, 34	
BDI score			0.003[1]
Median	15	23.5	
Q1, Q3	9, 22	12.5, 35	
Stratified by history of IBS			
	No (N=92)	Yes (N=42)	p value
fGUPI score			0.052[1]
Median	25.5	30	
Q1, Q3	16, 33	24, 35	
BDI score			0.088[1]
Median	17.5	22.5	
Q1, Q3	10, 26.5	14, 31	

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Scientific Salon 18
IMPACT OF OBESITY ON MIDURETHRAL SLING OUTCOMES IN A HIGHLY HISPANIC POPULATION: A RETROSPECTIVE COHORT STUDY

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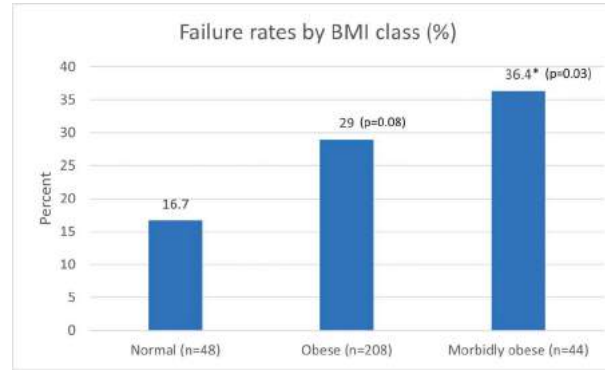
Objective: Midurethral slings (MUS) have been shown to be safe and effective for the treatment of stress urinary incontinence (SUI). While some studies have shown an association between obesity and higher failure rates for MUS, a recent meta-analysis found no significant difference in subjective outcomes. Because of conflicting findings, we aimed to further elucidate the impact of body mass index (BMI) on failure rates in patients undergoing MUS surgery. We hypothesized that there is a higher MUS failure rate in obese women compared to normal BMI women. We also assessed the impact of ethnicity on MUS failure rates, specifically in a highly Hispanic population.

Methods: We conducted a retrospective case-control study utilizing the electronic medical record at a large academic institution. MUS surgeries from 2010 to 2018 were identified by Current Procedural Terminology (CPT) code. We included all female patients over age 21 who underwent a MUS surgery with at least 1 year of follow-up. Failure was defined as subjective patient reporting of unchanged or worsened SUI and/or requiring additional procedure to treat their SUI. Normal, obese, and morbid obesity were defined as BMI <25, >30, and > 40 kg/m2, respectively. The primary outcome was MUS failure rates between normal BMI and obese BMI women. The secondary outcome was failure rates between Hispanic and non-Hispanic women. Chi-square test was used for statistical analysis.

Results: A total of 322 patients were included, 48 (14.9%) had normal BMI and 252 (78.3%) were obese. Of the obese patients, a subset of 44 were morbidly obese. Ethnicity consisted of 208 Hispanic (64.6%), 111 non-Hispanic (34.5%), and 3 unknown (0.9%). The mean age was 52.3 (range 27-88) and the mean follow-up time was 37 months (range 12-123 months). There was no significant difference in failure rates in the normal vs. obese BMI groups, 16.7% vs. 29.0%, $P = 0.08$, respectively. When further stratified by morbid obesity, there was a significant different in failure rates between normal vs. morbidly obese BMI groups, 16.7% vs 36.4%, $P = 0.03$, respectively. In the Hispanic vs. non-Hispanic groups, there was no significant difference in failure rates, 29.3% vs. 22.5%, $P = 0.19$, respectively.

Conclusions: Our findings are consistent with other studies demonstrating that obesity does not increase MUS failure rates. However, we did find increased failure rates in morbidly obese women when compared to normal BMI, 36.4% versus 16.7%. We also saw a trend towards higher failure rates in obese women, 29.0% versus 16.7%. We feel that with a larger cohort, a statistically significant difference might be identified. Based on our findings and current literature, MUS should be considered an appropriate option for all women with SUI, regardless of their BMI. In the morbidly obese population, further counseling may be warranted regarding possibly higher failure rates. In our patient population, we did not find a significant difference in failure rates between Hispanic and non-Hispanic groups.



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Scientific Salon 19
RECURRENCE RATE OF INCONTINENCE; AND FERTILITY AMONG WOMEN SUCCESSFULLY REPAIRED FOR OBSTETRIC FISTULA AT A TERTIARY HOSPITAL, MBARARA, SOUTH-WESTERN UGANDA

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Objective: The study was aimed to determine the recurrence rate of incontinence and to describe patterns of change in marital status, pregnancy and live childbirth, among women successfully operated for obstetric fistula at Mbarara Regional Referral Hospital, South-Western Uganda.

Methods: We conducted a retrospective review of patients' charts that were operated for obstetric fistula between 1st January 2010 and 31st December 2019 to identify those that were continent 2 months after the operation. Phone call interviews were made to inquire about: control of urine or stool, marital status, pregnancy and subsequent childbirths. A woman had recurrence of incontinence if during the phone interview she reported leaking urine or stool or both during the night and day following a period of ability to control stool or urine of more than 2 months after surgical fistula repair. Women that had peri-partum hysterectomy, bilateral tubal ligation or those who had no desire to conceive after fistula cure were excluded from analyses for live childbirth.

Results: In the study period, records were available for 678 women of which, 338 (49.9%) had Recto-Vaginal Fistula (RVF), 326 (48.1%) Genito-Urinary Fistula (GUF), and 14 (2%) a combination of both RVF and GUF. A total of 266 (39.2%) women could be accessed via phone call contacts. The recurrence rate of incontinence after successful closure of fistula was 10.2% (27/266). 55 (n = 255, 20.7%) of the women became divorced due abandonment by spouse primarily due to incontinence of urine / stool prior to corrective surgery. 32 (n = 55, 58.2%) had remarried on follow up after successful fistula repair. 169 (n = 266, 63.5%) women had a desire to have a baby. Fifty-seven (n = 169, 34.1%) had went on to have a live birth after successful fistula repair.
Conclusions: The recurrence rate of incontinence after successful fistula closure in our setting was approximately 10%. More than half of women who are abandoned after fistula diagnosis go on to re-marry after successful repair. Though the majority desire to have more children after successful repair, only a third are able to achieve this. Women who have had successful fistula repair should be followed up closely to monitor their continence state. Information on the social and reproductive impact of obstetric fistula is limited and warrants further study and attention in this vulnerable population.

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Scientific Salon 20
EVALUATION OF POSTPARTUM URINARY VOIDING MONITORING PROTOCOL AND INCIDENCE OF URINARY RETENTION POSTPARTUM

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Objective: To implement postpartum voiding monitoring protocol and evaluate a change in the detection of postpartum urinary retention pre- and post-implementation.
Methods: Postpartum voiding monitoring protocol was implemented September of 2018 (Figure 1). Retrospective chart review was performed, selecting for the diagnosis of "urinary retention" among postpartum patients. Incidence of urinary retention was compared between the pre-implementation period, January 1, 2017 and December 31, 2017, and post-implementation, January 1, 2019-December 31st, 2019.
Results: A total of 68 cases of postpartum urinary retention were identified. Significantly more patients were identified after protocol implementation as compared to before implementation [52 (1.4%) vs 16 (0.4%) ($p < 0.001$), respectively]. When the incidence was examined by route of delivery there was no difference for vaginal deliveries [pre 0.4% (9) vs post 0.6% (13), $p = 0.39$]. However, the incidence of urinary retention among those undergoing cesarean delivery increased almost 9-fold after the implementation [0.3% (4) vs 2.6% (35) $p < 0.001$].
Conclusions: Establishing a protocol for monitoring postpartum urinary voiding lead to a significant increase in identifying urinary retention postpartum, particularly after cesarian delivery. The protocol insured that urinary retention was promptly diagnosed and managed appropriately, potentially avoiding bladder distention injury and long-term voiding dysfunction.

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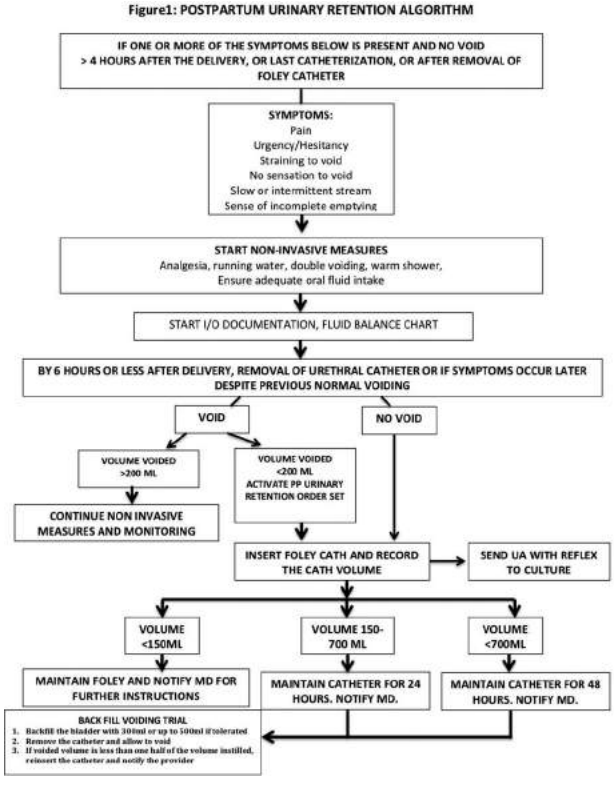
Figure1: POSTPARTUM URINARY RETENTION ALGORITHM



Scientific Salon 21
SEEKING THE TRUTH ABOUT PRIMARY ELECTIVE CESAREAN SECTION AND PELVIC FLOOR DISORDERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Objective: To perform a systematic review and meta-analysis evaluating whether primary elective Cesarean section (CS) is protective against pelvic floor disorders.
Methods: Electronic databases (PubMed, Cochrane) were searched for studies that compared pelvic floor outcomes among primiparous women according to mode of delivery. The outcomes evaluated included: urinary incontinence (UI), fecal incontinence (FI), anal incontinence (AI), and pelvic organ prolapse (POP). Studies published between January 1993 to May 2020 were included. For each pelvic floor disorder, we compared Elective CS vs CS after onset of labor (Labor CS), Elective CS vs Vaginal Delivery (VD), and Any CS vs VD. Risk ratios for outcomes of interest were computed with meta-analysis techniques using STATA v16 software using the META package using random-effects model with REML estimation. Between-study heterogeneity was assessed via Cochrane's homogeneity test and review of the I^2 statistic as well as funnel plots (Higgins, 2003). Data were considered significant where $p < 0.05$.
Results: Nineteen studies met inclusion criteria: 13 evaluated UI, six evaluated FI, six evaluated AI, and two evaluated POP. For UI, prevalence rates after Elective CS ranged from 0-31%, Labor CS 0-27%, and VD 5.3-53%. Meta-analysis demonstrated a significantly decreased risk of UI after Elective CS compared to Labor CS (RR 0.75, $P = 0.0107$). The other comparisons made for UI did not pass the homogeneity test and therefore no conclusion could be drawn. The prevalence of FI after Elective CS was 0-11%, Labor CS 0-12%, and VD 0-17%. Meta-analysis demonstrated a significantly decreased risk of FI after Elective CS compared with VD (RR = 0.78, $P = 0.0188$). There was also a decreased risk of FI after Any CS vs VD (RR = 0.82, $P = 0.0217$). There was no difference in risk of FI after Elective CS vs Labor CS (RR = 0.89, $P = 0.471$). The prevalence of AI after Elective CS was 0-44%, Labor CS 0-45%, and VD 1-48%. Meta-analysis demonstrated a significantly decreased risk of AI after Elective CS compared with VD (RR = 0.83, $P = 0.0338$). There was no decreased risk of AI after Elective CS vs Labor CS (RR = 0.98, $p = 0.617$). The other comparisons made for AI did not pass the homogeneity test and therefore no conclusion could be drawn. Only two studies examined POP, precluding meta-analysis. Both studies found a protective effect of any type of CS in preventing POP but did not find a protective effect of elective CS when compared to Labor CS.
Conclusions: Among primiparous women, elective CS may be protective against UI when compared with Labor CS. There seems to be a protective effect of elective CS against FI and AI when compared with VD. There are limited data regarding the protective effect of elective CS on POP among primiparous women. More prospective studies are needed to fully characterize the relationship between elective CS and pelvic floor disorders.

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Scientific Salon 22
INFORMED DECISION-MAKING IN PREGNANCY (IDIP): A QUALITATIVE STUDY

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Objective: Women who have faced pregnancy-associated pelvic floor disorders (PFDs) including obstetric anal sphincter injuries (OASIS) have expressed

being underprepared to cope with such injuries given lack of education during pregnancy and postpartum. Our objective was to explore the perspectives of pregnant women regarding mode of delivery and awareness of pelvic floor disorders.
Methods: Pregnant women were recruited from an obstetrics clinic affiliated with a tertiary academic center. Using an open-ended topical guide, we interviewed participants regarding their perspectives on childbirth, their preferences for the childbirth process, mode of delivery, and their awareness of pelvic floor disorders. Recruitment was concluded when thematic saturation was reached. The data was analyzed qualitatively by independent reviewers using Grounded Theory, as described by Charmaz.
Results: Twenty-one women were recruited. The mean age of participants was 32. The participants were varied in terms of pregnancy trimester: four were 0-13 weeks, three were 14-26 weeks, thirteen were 27-40 weeks and one was postpartum. Notably 16 (76%) had a bachelor's degree or higher level of education and 8 (38%) either worked in healthcare or had a partner who worked in healthcare. Women were aware of tearing during birth but only a few mentioned operative delivery (vacuum or forceps-assisted delivery) and the consequences of OASIS. Most women did not view elective cesarean delivery as an option for them. Eight themes related to delivery choices and PFD were identified (Table 1).
Conclusions: While patients generally feel informed about the risks and benefits of vaginal versus cesarean delivery, there is a negative stigma associated with undergoing cesarean delivery whether medically indicated or elective. We recognize that this stigma may not be generalizable to all populations. As our population expressed a desire to learn even more about the childbirth process, we hypothesize that they would appreciate more information on pelvic floor disorders and their relationship with childbirth. While most women in our study are unlikely to choose elective cesarean delivery, more information would help them participate in informed decision-making.

Table 1. Themes with sample responses.

Childbirth can be complicated and unpredictable, but I can prepare myself	**"Natural birth" is better for mom and baby**	**Complications are possible with both methods but more likely with cesarean delivery**
"Dr. X was asking me 'Do you have a birth plan?' and I said no. I am pretty open to everything. I understand the futility of going in with a set plan and possibly being disappointed." "I'm pretty flexible because I know some things can't be helped"	"It sounds kind of slang, but it [vaginal birth] is nature's way. It's the way it was intended. " "And then it just switched to realizing, I don't know all of the side effects of these drugs on the baby. And I don't know if anybody really does because we don't have long term studies. I thought if it was doable then why not try to do it as naturally as possible. "	"Well, I guess [vaginal birth] is a faster recovery than having a big surgical procedure done. Less risk of infection, you know just less complications. There are complications with vaginal birth too, I think just more so with a big surgical procedure. "
Vaginal delivery can be associated with tearing and future incontinence	**Cesarean delivery reflects a failure to achieve vaginal delivery**	**Elective Cesarean delivery is unnecessary if you haven't already had pelvic floor damage**
"Well, the scary part is pain, mostly, and then tearing, which I think everyone is afraid of...especially because we have big babies in the family." "My mom had some incontinence. She had five kids so she had some incontinence later on."	"I had a friend recently that had a C/S and I know it was pretty traumatic for her. I know she really wanted to have a natural birth and I think she pushed for like hours. She really struggled afterwards with some postpartum depression. Like 'I couldn't have my baby like a normal person' " "My one friend had to do a caesarean because she was just in labor too long, but I don't think anyone has chosen to do it unnecessarily."	"I guess I could see why people do it, but I wouldn't want to do it. One of my friends had one. It was sort of elective in that she had a complicated first pregnancy and had to have an intense repair afterwards and so she decided to have a c/s just because it was less complicated to do it. "It started thinking more about it, and then I'm like that's kind of ridiculous, to have an elective abdominal surgery, just because I don't want to have a baby out of my vagina."
I'd like to know even more than I do now	**Doctors pressure women to have cesarean delivery**	
"I want to know more. I feel like what I know now is from over the years from friends, but I want to know that I did my own research. And I made my own decision because I heard from people's personal experiences, as well as my own research."	"It seems to me that [cesarean deliveries] are so common these days that I don't know if it is just a trend of doctors pushing it more. It seems to be more optional than necessary in some cases. I don't really personally believe that that's the way it should be, you know? "	

Disclosures: Lauren Tholemeier: None, Colby Souders: None, Ashley Caron: None, KARYN EILBER: None, Jennifer Anger: None

Scientific Salon 23
RISK OF OBSTETRIC ANAL SPHINCTER INJURY BY DELIVERY PROVIDER AND HOSPITAL CHARACTERISTICS: A RETROSPECTIVE STUDY

T. Walker[1], S. Rahman[2], R. Amdur[2], C. Carter-Brooks[2]. *The George Washington University*[1], *George Washington University Medical Faculty Associates*[2]

Objective: Provider and hospital characteristics are known to have significant effects on gynecologic surgery patient outcomes. We aimed to evaluate if obstetric (OB) delivery provider and hospital characteristics are associated with patient outcomes, specifically obstetric anal sphincter injuries (OASIS) risk. We hypothesized increased OASIS amongst providers with less delivery experience and hospitals with a higher care level.
Methods: This was a secondary analysis of the *Consortium of Safe Labor* data. Nulliparous women with vaginal delivery (including operative) of cephalic singletons at least 37 weeks gestation were included. Patients with shoulder dystocia or missing laceration details were excluded. Demographics, maternal and fetal factors, labor and delivery information, delivery provider and hospital characteristics were extracted. Student t-tests, Kruskal-Wallis tests, and chi-squared analysis were used. Multivariable (MVR) logistic regression was performed to identify and control for characteristics associated with OASIS.
Results: Of 228,668 patients, 19,511 patients from 7 sites met inclusion criteria. Mean age and gestational age (GA) were 24 ± 6 years and 39.5 ± 1 weeks. Almost half were white (46.7%) and had private insurance (50.5%). Most deliveries were performed by an OB (75%), followed by Family Medicine (FM) (4.2%) and Midwives (2.6%); 14.4% were unknown. Most hospitals were teaching (university 49.7% and community 44.3%) versus non-teaching community hospitals (5.7%) and had level III compared to level II NICU (88.7% vs 11.3%).

OASIS occurred in 1,077 (5.5%). FM (6.4%) followed by generalist OB (5.9%) had the highest incidence of OASIS compared to Midwives (3.0%) and MFM (4.5%; $P = .0002$). OB providers in university-faculty or private practice had more OASIS (6.8%, 6.6%) compared to those employed federally, at a clinic, or as hospitalists (3.7%, 3.0%, 2.6%; $P < .0001$). OB providers age < 35 years had more OASIS (6.9 vs. 5.4%; $P = .03$). There was no difference in OASIS by provider gender. Non-teaching community hospitals had the highest OASIS (11.2%) compared to teaching community and university hospitals (5.5%, 4.9%; $P < .0001$). Hospitals with level II NICU had more OASIS than level III (6.7 vs 5.4%; $P = .008$). Hospital delivery volume and insurance premiums were not associated with OASIS.

Patients with OASIS were older, Asian/Pacific Islander or White, had lower BMI, were nonsmokers, higher estimated fetal weight, later GA, longer labor duration, and more operative deliveries (*all $P < 0.05$*). Using MV regression to control for these factors, we found increased risk of OASIS with OB university-faculty (aOR 2.36, 95%CI 1.28-4.36), OB providers <35 years old (aOR 1.35, 95%CI 1.05-1.73), and deliveries in teaching (aOR 1.60, 95%CI 1.22-2.09) or non-teaching community hospitals (aOR 6.84, 95%CI 3.23-14.5). No other provider or hospital characteristics remained significant. The area under the curve for this model was 0.74, indicating good predictive ability.
Conclusions: Younger provider age, university-faculty employment, and community hospital setting were associated with increased risk of OASIS. Our findings suggest factors beyond that of the patient and her labor course may increase the risk of OASIS.

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Scientific Salon 24
SEXUAL FUNCTION IN WOMEN WITH A HISTORY OF OBSTETRIC ANAL SPHINCTER INJURY

L. Hickman[2], K. Propst[1], C. Ferrando[1]. *Cleveland Clinic*[1], *The Ohio State University Wexner Medical Center*[2]

Objective: To assess sexual function 6 to 12 months postpartum in women who experienced any OASI and to compare symptoms between mild and severe OASI
Methods: This is a cross-sectional study of women enrolled in a IRB-approved OASI research registry. Women experiencing a 3rd or 4th degree obstetric laceration who were seen in our Postpartum Care Clinic were enrolled in the registry and completed a follow up survey regarding sexual function at 6-12 months postpartum. Sexual function was evaluated by assessing time to resumption of sexual activity and reasons for non-resumption of sexual activity. Three domains of the Pelvic Floor Birth Questionnaire (PFBQ) were used to assess sexual function: sexual activity, sensation on intercourse, and sexual arousal and orgasm. The Edinburgh Postnatal Depression Scale also was administered and score > 9 was considered positive. Mild OASI was defined as 3rd degree A, B, and unspecified lacerations, severe OASI was defined as 3rd degree C, and 4th degree lacerations.
Results: 111 women had completed surveys with a mean age of 30.6 ± 4.0 years and mean BMI of 30.9 ± 5.6 kg/m^2. The majority of women had a spontaneous vaginal delivery (60, 54.4%). 52 (46.9%) women had an operative delivery (vacuum 32, 28.9%; forceps 20, 18.0%) and 8 (7.2%) had an episiotomy. 85

(76.6%) women experienced a mild OASI and 26 (23.4%) experienced a severe OASI. 15 (14.4%) women reported dyspareunia prior to pregnancy and 29 (26.2%) had a history of anxiety or depression.

Median time to survey completion was 218 days (181-362). 91 (81.9%) women had resumed sexual intercourse and mean time to resumption of intercourse was 11.9 ± 6.1 weeks. 40 (44.0%) women reported their first postpartum attempt at intercourse was either unsatisfying or very unsatisfying. Reason for not yet resuming intercourse was lack of interest for 15 (13.5%), feeling too tired for sex for 11 (9.9%), and painful intercourse for 6 (5.4%) women. Time to resumption of intercourse, satisfaction on first postpartum attempt at intercourse, and reason for not resuming intercourse did not differ between women with mild versus severe OASI.

PFBQ mean sexual activity domain score did not differ between women with mild (2.53 ± 0.84) versus severe (2.87 ± 0.66) OASI. PFBQ mean sensation on intercourse domain score did not differ between women with mild (2.80 ± 0.70) versus severe (2.85 ± 0.70) OASI. PFBQ mean sexual arousal and orgasm domain score did not differ between women with mild (2.57 ± 0.85) versus severe (2.67 ± 0.74) OASI. There were no differences in any PFBQ domain scores when women were categorized by Edinburgh depression screen results.

Conclusions: At 6 to 12 months postpartum, women with a history of OASI report similar sexual function compared to before obstetric delivery and delay resumption of intercourse beyond what is typically recommended by obstetricians. There are no differences between women who experience mild compared to severe OASI.

Disclosures: Katie Propst: None, Cecile Ferrando: UpToDate: Authorship: Self , Lisa Hickman: None

Scientific Salon 25
BIRTH-RELATED PELVIC FLOOR DISORDERS AND SOCIAL MEDIA: CAN PATIENTS FIND RELIABLE INFORMATION ON INSTAGRAM AND TIKTOK?

M. Siddique, E. Passarelli[1], L. Hickman[2], K. Propst[3]. *Brown Alpert Medical School[1], Ohio State University Wexner Medical Center[2], Cleveland Clinic[3]*

Objective: To characterize publicly available Instagram and TikTok content on birth-related pelvic floor trauma and perineal lacerations

Methods: This is an IRB-exempt descriptive study of Instagram and TikTok posts on postpartum pelvic floor disorders and perineal lacerations. Topics commonly searched on the website "Life After 4th Degree Tears" were used to create a list of queries for Instagram and TikTok analysis. The 10 most popular hashtag queries on Instagram in 2021 were identified from this list, and the 50 most recent posts for each of these queries were analyzed by content and authorship. To facilitate a comparison of content, the Instagram queries were used as "keyword" searches on TikTok, and the same method was used.

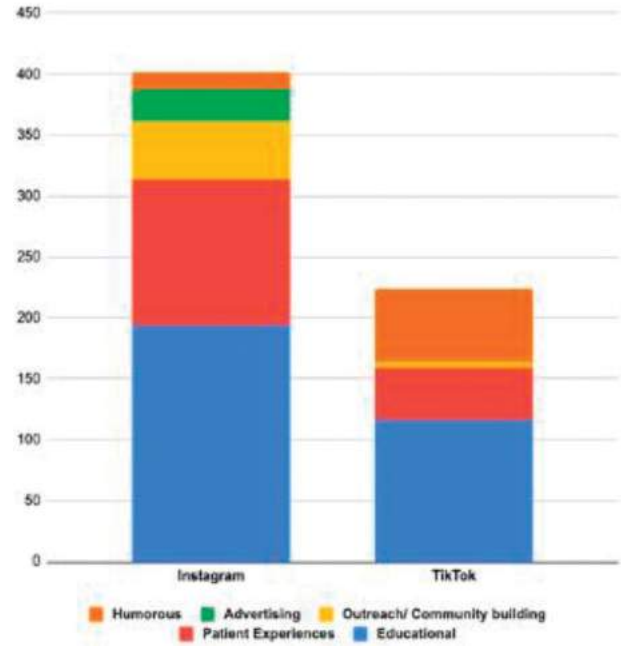
Results: The most popular queries identified were: perinealtear, 4thdegreetear, thirddegreetear, postpartumpelvichealth, postpartumpelvicfloor, vaginaltear, childbirthinjury, 2nddegreetear, postpartumvagina, and sexafterdelivery. There was a total of 427 posts on Instagram and 500 on TikTok. As seen in Figure 1, the majority of Instagram queries on birth-related pelvic floor trauma were of relevant posts compared to TikTok (94.1% vs 44.8%). Instagram searches identified more content on relevant patient experiences (29.6%) whereas TikTok provided more relevant humorous content (26.3%).

Of the 402 relevant Instagram posts, 27.6% were created by patients and 18.9% by physical therapists. Almost 50% of posts were categorized as educational. 76.6% of posts by patients were categorized as "patient experience". Physical therapists were both the most frequent creators of educational posts and the most common health professionals who posted content overall. A small contingent of posts (6.1%) were advertisements for vaginal steaming and cleansing devices and were largely promoted by Health and Wellness Groups.

Of the 224 relevant TikTok posts, 43.3% were created by patients and 21.9% by physical therapists. 52.2% of the posts were categorized as educational. Among relevant posts created by patients, 42.3% were categorized as "humorous" and 39.2% as "patient experience". Similar to Instagram, physical therapists were the most common creators of educational posts and the most common health professionals who posted content overall. Physician-created educational content accounted for only 10.3% of educational posts on Instagram and 6.0% on TikTok.

Conclusions: Compared to TikTok, Instagram may be a more informative social media platform for educational or patient experience-related content. However, given the paucity of physician-created content on both platforms and that only half of all posts are educational in nature, providers should caution patients about recommendations, perspectives, or products offered on social media.

Figure 1: Categorization of Relevant Posts on TikTok and Instagram



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Scientific Salon 26
SHORT-TERM IMPACT OF OBSTETRIC ANAL SPHINCTER INJURY ON POSTPARTUM PELVIC FLOOR FUNCTION

L. Hickman[1], C. Ferrando[2], K. Propst[2]. *The Ohio State University Wexner Medical Center[1], Cleveland Clinic[2]*

Objective: To describe the impact of obstetric anal sphincter injury (OASI) on pelvic floor function 6 to12 months postpartum and to compare pelvic floor symptoms between mild and severe OASI.

Methods: This is a cross-sectional study of women who experienced an OASI and were seen after delivery in a subspecialty pelvic floor disorder clinic at our tertiary care institution. All patients were prospectively enrolled in a registry at the time of initial consultation and were contacted between 6 and 12 months postpartum as part of an IRB-approved protocol. Patients were eligible if they completed the 6-12 month surveys, including the UDI-6, FISI, Postpartum Pelvic Floor and Birth Questionnaire (PFBQ) domains on pelvic organ prolapse symptoms and pelvic floor muscle function and integrity, and the Edinburgh Postnatal Depression Scale. The PFBQ uses a Likert scale to assess a woman's perception of changes to her pelvic floor after childbirth. Patient characteristics and obstetric data were collected from the electronic medical record. Women were grouped by tear severity, with 3C and 4th degree considered to be a severe OASI versus 3A, 3B and 3 unspecified lacerations as mild OASI.

Results: 111 women met criteria. Mean age at delivery was 30.6 ± 4.0 years. Women were primarily primiparous (1, range 1-3) and white (87, 78.4%). 60 (54.1%) patients had a spontaneous vaginal delivery, 32 (28.9%) had a vacuum-assisted vaginal delivery, 20 (18.0%) had a forceps-assisted vaginal delivery, and 4 (3.6%) had a vaginal birth after cesarean. The majority of patients, 85 (76.6%) had a mild OASI, and 26 (23.4%) had a severe OASI. The median time to survey completion was 218 days (range 181-362). 36 (32.7%) women reported urinary incontinence, and this did not differ by OASI severity. Mean

UDI-6 score was 8.3 ± 8.4, with no differences on the individual components or total score between the two groups. Regarding bowel function, 17 (15.3%) women reported fecal urgency, 48 (43.6%) reported flatulence incontinence and 9 (8.1%) reported fecal incontinence, with no differences between the groups. Mean FISI score was 13.9 ± 13.5 and also did not differ by OASI severity. On the PFBQ, the mean pelvic organ prolapse domain score was 3.4 ± 0.8, and the mean pelvic floor muscle function and integrity domain score was 2.9 ± 0.8, with no differences on the individual or mean domain scores between the laceration severity groups. There were no differences in pelvic floor function or UDI-6, FISI, and PFBQ scores in women with higher Edinburgh scores (≥10) compared to those with lower scores (<10).

Conclusions: While a significant number of women who experienced any OASI continue to report fecal urgency, anal incontinence and urinary incontinence postpartum, there are no significant differences in symptoms between women with mild and severe OASI.

Disclosures: Lisa Hickman: None, Cecile Ferrando: UpToDate: Authorship: Self , Katie Propst: None

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Scientific Salon 27
OBSTETRIC ANAL SPHINCTER INJURY IN ADOLESCENT MOTHERS

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Objective: Adolescent pregnancy is a phenomenon estimated to occur in 13% of women in the United States and 25% worldwide. Obstetric anal sphincter injury (OASI) is a debilitating complication of vaginal delivery which has yet to receive ample attention in adolescents. The aim of this study was to describe risk for OASI in adolescent mothers compared to adults. We further attempted to compare risk factors for OASI between these two age groups.

Methods: We performed a retrospective cohort study at a tertiary, university, teaching hospital between 2003 and 2019. Primiparous women who delivered vaginally, 21 years and younger were compared to women ages 26-35 years. Excluded were preterm, multifetal, non-vertex, cesarean deliveries as well as intrauterine fetal death. Rate of OASI as well as obstetric and labor characteristics of women with OASI, were compared between groups. Finally, risk factors were assessed for each group separately. Univariate and multivariate logistic regression models were performed.

Results: During the study period, 146,386 patients delivered in our institution and were evaluated for eligibility. Final analysis was performed on 5,113 nulliparous adolescents and 13,845 women in the 26-35 age group. Allocation to study groups was according to OASI – Sixty-seven adolescents (1.3%) had a 3rd or 4th degree perineal tear and were defined as the OASI group, while 5,046 patients (98.7%) did not have such a tear i.e. "no OASI" group. In the adult group, 199 out of 13,845 patients (1.4%) were diagnosed with OASI. Occurrence of OASI did not differ between groups ($P = 0.510$). Comparison of women with OASI in the adolescent group vs. adult group found differences with regard to operative vaginal deliveries, (20.9% vs. 36.2%, respectively; p = 0.023) and meconium stained amniotic fluid (9.1% vs. 21.3%, respectively; $P = 0.027$).

We further focused on each age group - adolescent and adult groups comparing patients with and without OASI in each age group. Following multivariate analysis the only parameter independently associated with OASI in the adolescent age group was head circumference > 90th percentile with an adjusted odds ratio of 3.08 (CI 1.48-6.38, p = 0.003). In the adult group a similar analysis revealed instrumental delivery (OR = 2.44, CI 1.72-3.47, $P < 0.001$) and a birthweight>90th percentile (OR = 2.23, CI 1.19-4.18, $P = 0.012$) to be independent risk factors for OASI.

Conclusions: Adolescents have similar risk for OASI compared to adult women but differ in risk factors leading to OASI. Head circumference > 90th percentile was found to be associated with OASI in this age group.

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Scientific Salon 28
EXAMINATION OF INFORMATION AND MISINFORMATION ON URINARY TRACT INFECTIONS ON TIKTOK AND YOUTUBE

J. Tam[1], E. Porter, U. Lee[2]. *Virginia Mason Medical Center[1], Virginia Mason[2]*

Objective: Social media is increasingly used as a resource for health information. YouTube and TikTok videos are highly utilized and are potentially a source of helpful information or misinformation. The objective of this study is to describe and assess the quality and accuracy of the most highly viewed YouTube and TikTok posts related to urinary tract infections (UTIs).

Methods: From 1/2021 to 2/2021,"UTI" was searched within TikTok and YouTube and the most viewed posts were analyzed for their content and source. Accuracy of scientific information, possible misinformation, credibility, and quality (modified DISCERN) were rated independently by three reviewers. Posts were categorized into educational/informational (EDU), shared experience (EXP), humor/entertainment (HUM), home remedies/alternative therapies (ALT) and number of views, likes, and comments were recorded.

Results: On 50 YouTube and 50 TikTok videos respectively, the median number of views was 49 K and 1.4 M, the median number of likes was 296 and 58 K, and the median number of comments was 50 and 616. On YouTube and TikTok respectively, 94% and 42% were EDU, 4% and 30% were HUM, 6% and 14% were ALTs, and 6% and 20% were EXP. The proportion of female to male presenters on YouTube was equal while 94% were female on TikTok. Overall, YouTube had higher median scores of scientific information, credibility, and less misinformation compared to TikTok. Videos on YouTube with higher views, likes, and comments and those that were categorized as ALT on both platforms tended to have lower scores in all categories and more misinformation (Table 1). On YouTube and TikTok respectively, 66% and 20% of presenters were medical professionals.

Conclusions: Social media allows the sharing of health information and can normalize the UTI experience. YouTube and TikTok generally provided accurate information and did not promote harmful misinformation. Providers should be aware of the potential influence of social media as patients are getting health information from many sources.

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Scientific Salon 29
RISK FACTORS FOR URINARY TRACT INFECTION AFTER OFFICE CYSTOSCOPY

A. Jackson[1], C. Ackerman[2], N. Alesna[1], K. Hicks[2], J.P. Tanner[2], E. Chang[2], R. Hidalgo[2], A. Wyman[2], R. Bassaly[2], K. Greene[2]. *University of South Florida, Morsani College of Medicine[1], University of South Florida[2]*

Objective: Urinary tract infection (UTI) is a known complication of cystoscopy. Physicians employ various pre-procedure antibiotic prophylaxis (AP) protocols. A survey of the American Urogynecologic Society membership demonstrated that 58% of respondents prescribed AP to either all patients or high-risk patients. The American Urological Association recommends against AP for simple outpatient cystoscopy in the absence of infectious signs/symptoms. This was based on a study of mostly male (80%) patients. The objective of this study is to identify the incidence of, and risk factors for, UTI after cystoscopy in a female population.

Methods: This was a retrospective cohort study investigating the incidence of, and risk factors for the development of UTI after cystoscopy in a female population. Inclusion criteria included all women who underwent an office cystoscopy from September 2019 to February 2020. All patients were asymptomatic and had a negative dipstick urinalysis (UA) prior to cystoscopy. Women who had a UTI after cystoscopy were identified and compared to those who did not develop a UTI. Post-procedure UTI (PP UTI) was defined as symptoms with positive culture or symptoms requiring empiric treatment. Potential risk factors for PP UTI were identified by the research team a priori and chart review was performed. Data abstracted included: demographics, indication for procedure, pre-procedure UA results, PP UTI outcomes, and relevant medical history. Logistic regression was used to identify independent risk factors for UTI after cystoscopy. Only variables that were statistically significant in univariate analysis were included in the multivariable model.

Results: A total of 185 patients met the inclusion criteria. Nine (4.8%) had a PP UTI (Table 1). Recurrent UTI (rUTI) (aOR: 8.99, 95% CI: 1.75-46.23) and IC (aOR: 6.71, 95% CI: 1.28-35.09) were found to be significant risk factors for PP UTI (Table 2). Of those with rUTI, 13.7% had a PP UTI. Four of the seven UTIs (57%) were culture proven. Of those with interstitial cystitis, 25% had a PP UTI. One of the three UTIs (33%) were culture proven.

Conclusions: Patients with rUTI were 8.99 times more likely to develop a UTI following cystoscopy. Patients with IC were 6.71 times more likely to develop a UTI following cystoscopy. However, future studies with standardized post-cystoscopy urine culture are needed to better define risk factors for post-cystoscopy UTI in women.

UPLOAD-https://planion-client-files.s3.amazonaws.com/AUGS/blobs/d3769f54-3a31-4ee9-8459-42fcf8c45d3a/1/FINAL_Table1__Cysto_and_Abx.tiff

UPLOAD-https://planion-client-files.s3.amazonaws.com/AUGS/blobs/d582d445-37ab-4937-8037-ad1d633e6a9d/1/FINAL_Table2__Cysto_and_Abx.tiff

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Hidalgo: None, Allison Wyman: AUGS PFD Research Foundation: Grant/Research Support: Self, Caldera: Consultant: Self , Renee Bassaly: None, Kristie Greene: Pelvalon: Grant/Research Support: Self

Scientific Salon 30
EXPANDED CULTURE UROTYPES HAVE CHARACTERISTIC URINALYSIS PHENOTYPES IN A RANDOMIZED CLINICAL TRIAL

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Objective: To compare urinalysis results of women with self-reported UTI across urotypes generated from expanded quantitative urine culture (EQUC) results. We hypothesize that urinalysis results will vary relative to urotype.

Methods: This is a sub-analysis of a randomized controlled trial of women presenting to a urogynecology center with self-reported UTI symptoms who provided a catheterized urine sample and received treatment based on EQUC or standard urine culture (SUC) results. Urine samples were sent to both research and clinical microbiology labs. The research lab performed both EQUC and SUC on all samples; from EQUC results, 4 urotypes were derived: *E. coli*-predominant (>50% CFU/mL *E. coli*, EC), Gram-Negative-non-*E. coli*-uropathogen-predominant (>50%CFU/mL Gram-Negative non-*E. coli* uropathogen, GN), Gram-Positive-non-*E. coli*-uropathogen-predominant (>50%CFU/mL Gram-Negative non-*E. coli* uropathogen, GP) and culture negative (0 CFU/mL)/non-uropathogen predominant (>50% CFU/mL non-uropathogen, NUC). On all samples, the clinical microbiology lab performed urinalysis, including RBC, WBC and presence of nitrites and leukocytes; they were compared between urotypes.

Results: Of 225 women enrolled (149 SUC; 76 EQUC), 223 had urinalysis results after the initial visit: 100 had an EC urotype, 39 a GN urotype, 37 a GP urotype, 47 were NUC. RBC & WBC counts differed significantly across urotypes ($P < 0.0001$). The GP urotype had significantly higher WBC counts than NUC, but significantly lower median RBC and WBC counts than EC and GN (all $P < 0.005$).

Leukocyte and nitrite positivity also differed by urotype ($P < 0.0001$). Women with both leukocyte and nitrite positivity (n = 66) were more frequently in the EC or GN urotypes (94%). Women with both leukocyte and nitrite negativity (n = 57) were most frequently in the NUC urotype (68%). The GP urotype was more likely to be leukocyte- and nitrite-double-negative than the EC and GN urotypes, and more likely to be leukocyte-positive than the NUC urotype (all $P < 0.0001$).

Conclusions: Significant differences in leukocyte/nitrite phenotypes and WBC and RBC counts may suggest the presence of Gram-positive (GP) uropathogens that SUC frequently misses. Symptomatic patients with low non-zero WBC/RBC counts and a negative nitrite result likely possess microbes consistently detected by EQUC but frequently missed by SUC.

Table 1. Urotype RBC and WBC counts. Median and IQR RBC and WBC counts for the 4 urotypes derived by EQUC. Statistical analysis by Kruskal-Wallis test.

	EC (n=100)	GN (n=39)	GP (n=37)	NUC (n=47)	p*	p**	p***	p****	p*****	p******
RBC Count-Median (IQR)	3 (1-12)	6 (1-24)	1 (0-3)	0 (0-2)	<0.0001	0.0021	<0.0001	0.003	0.095	<0.0001
WBC Count - Median (IQR)	81.5 (23-180)	128 (17-180)	9 (0-41)	0 (0-1)	<0.0001	<0.0001	<0.0001	<0.0001	0.001	<0.0001

* Across all urotypes, ** EC vs GP, *** EC vs NUC, **** GN vs GP, ***** GP vs NUC, ****** GN vs NUC

Table 2. Urotype Leukocyte/Nitrite Phenotypes. Frequency of each urotype in each urinalysis leukocyte/nitrite phenotype. Statistical analysis by Chi-Square and Fisher's Exact Test.

Leukocyte/Nitrite Phenotype	EC (n=100)	GN (n=39)	GP (n=37)	NUC (n=47)	p*	p**	p***	p****	p*****	p******
-/- (n=57)	1.8% (1)	1.8% (1)	28.0% (16)	68.4% (39)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
-/+ (n=1)	0.0% (0)	100.0% (1)	0.0% (0)	0.0% (0)						
+/- (n=99)	52.5% (52)	22.2% (22)	18.2% (18)	7.1% (7)						
+/+ (n=66)	71.2% (47)	22.7% (15)	4.6% (3)	1.5% (1)						

* Across all urotypes, ** EC vs GP, *** EC vs NUC, **** GN vs GP, ***** GP vs NUC, ****** GN vs NUC

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Scientific Salon 31
30-DAY OUTCOMES OF EXPECTANT AND EMPIRIC ANTIBIOTIC MANAGEMENT OF URINARY TRACT INFECTION SYMPTOMS IN OLDER WOMEN

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Objective: Amongst community dwelling older women seeking treatment for urinary tract infection (UTI) symptoms, to determine the proportion who received appropriate therapy as compared to unnecessary antibiotics, and experienced serious adverse events within 30-days of initial UTI evaluation.

Methods: A retrospective cohort study of women seeking treatment for UTI symptoms at an academic center from November 1, 2020 to March 3, 2021 grouped by management: empiric antibiotics (Empiric) vs expectant management directed by urine culture (UCx) results (Expectant). Participants completed Urinary Tract Infection Symptom Assessment (UTISA) on presentation in clinic or by phone and again when informed of UCx results. "Mixed flora" and "no growth" results were grouped as "negative" UCx. Our primary outcome was appropriate therapy defined as: no antibiotics in participants with negative UCx, or a participant with a positive UCx sensitive to empiric antibiotics that were prescribed. Our secondary outcome was the proportion of subjects that experienced serious adverse events including pyelonephritis and urosepsis. Variables were compared between groups and a logistic regression model was created to investigate factors associated with appropriate therapy, controlling for confounders.

Results: Analyses included 154 women of which 32(20.8%) received empiric antibiotics and 121(78.6%) were managed expectantly. Positive UCx was reported in 96 (62.3%) women. The Empiric group reported greater mean scores on UTISA for "dysuria" ($P < 0.01$), "urgency" ($P = 0.01$), "frequency" ($P = 0.02$), "incomplete emptying" ($P < 0.01$). There were 19 participants (59.4%) in the empiric group and 77 (60.6%) in the expectant group that had a positive UCx. Overall, 138 (89.6%) received appropriate therapy. Of these, 16 (11.5%) had appropriate empiric antibiotics, 77 (55.8%) had appropriate antibiotics prescribed after final UCx results, and 45 (32.6%) did not receive empiric antibiotics with a negative UCx. (Table) In a logistic regression model, only a higher score on the UTISA "urgency" domain (aOR 7.34, 95% CI 2.5-21.3; $P < 0.01$) had higher odds of unnecessary antibiotics when adjusting for confounding variables including age and history of recurrent UTI. No subjects in either group experienced a serious adverse event within 30-days of their initial evaluation.

Conclusions: In this cohort of older women seeking treatment for UTI symptoms, 10.4% received unnecessary empiric antibiotics. Greater patient reported symptom severity was associated with use of empiric antibiotics. Given the lack of adverse events in either group, an expectant approach while awaiting culture results may be a safe and effective way to decrease inappropriate antibiotic use in this population.

Table: Demographics and Baseline Variables Associated with Appropriate Therapy for UTI symptoms in Older Women

Variable	Appropriate Therapy (n=138)	Unnecessary Antibiotics (n=16)	P-value
Age	66.4 (SD 15.2)	64.4 (15.7)	0.62
BMI	27.9 (SD 6.3)	30.8 (6.4)	0.11
Diabetes	27 (19.6)	3 (18.9)	1.00
Caucasian	132 (95.6)	15 (93.7)	0.54
Antibiotic Suppression	16 (11.7)	2 (12.5)	1.00
Vaginal Estrogen	82 (59.4)	10 (62.5)	1.00
Current Smoker	**9 (6.5)**	**4 (25.0)**	**0.03**
Sexually Active	56 (40.6)	9 (56.3)	0.43
History of rUTI	70 (50.7)	10 (62.5)	0.44
Empiric Antibiotics	**16 (11.16)**	**16 (100.0)**	**<0.01**
Baseline UTISA Responses			
Frequency	**1.7 (0.9)**	**2.6 (0.9)**	**<0.01**
Urgency	**1.7 (0.9)**	**2.5 (0.6)**	**<0.01**
Dysuria	1.4 (1.1)	1.3 (1.4)	0.96
Incomplete bladder emptying	**0.7 (0.9)**	**1.6 (1.4)**	**0.03**
Pain/abdominal pressure	1.1 (1.0)	1.4 (1.2)	0.36
Low back pain	0.7 (0.9)	0.8 (0.9)	0.60
Hematuria	0.1 (0.5)	0.3 (0.7)	0.41
Overall symptom rating	2.0 (0.7)	2.5 (0.5)	0.07

* Data is presented as n (%) or mean (SD) unless other specified
Abbreviations: UTI, Urinary Tract Infection, UCx, Urine Culture, UTISA, Urinary Tract Infection Symptom Assessment; BMI, Body Mass Index, rUTI, recurrent UTI

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Scientific Salon 32
THE URINARY MICROBIOME: UPDATING ANALYSES TO ENHANCE BIOLOGIC INTERPRETATION

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Objective: One approach for assessing the urinary microbiome is 16S rRNA sequencing, where a segment of the bacterial genome is amplified and sequenced. This has become increasingly facile for researchers, but the methods used to analyze these data are rapidly evolving. We hypothesized that recently published analytic tools would lead to enhanced precision and more informative biological interpretation. Thus, our objective was to reexamine an existing dataset to determine whether findings differ based on the use of updated bioinformatic and statistical analyses.

Methods: The HMS-ESTEEM study by the Pelvic Floor Disorders Network (PFDN) compared the urinary microbiome in 123 women with mixed urinary incontinence (MUI) and 84 controls. We obtained raw sequencing data, processed operational taxonomic unit (OTU) tables, and de-identified clinical data from the PFDN. We applied an updated DADA2 bioinformatic pipeline to raw sequencing data, which provides amplicon sequence variant (ASV) tables that better adjust for errors. Taxa from ASV tables were compared to those identified previously in OTU tables. Data from ASV tables were analyzed with two clustering techniques: Dirichlet Multinomial Mixture (DMM) and Dirichlet-Tree Multinomial Regression (DTMM) models. DMM was used in the original study; DTMM is another method that more heavily weights the non-dominant bacterial taxa. Multivariable regression was used to control for potentially confounding variables with both DMM and DTMM analyses.

Results: Taxa identified through the updated pipeline and database were 39.3% concordant with those identified in the prior analysis. When data from updated ASV tables were analyzed with DMM models, we confirmed differences in microbial communities associated with MUI and control participants. However, in the new analysis other patterns in non-*lactobacillus* taxa were more evident (figure). When re-analyzing with menopausal status and hormone usage as a composite variable, age was no longer separately associated with microbial clusters, while body mass index remained an important covariate in all adjusted and unadjusted analyses. DTMM models identified fewer clusters, but these clusters were not associated with MUI versus control status.

Conclusions: Updated bioinformatic techniques improve biologic interpretation of 16S rRNA sequencing data. Differences in microbial communities among women with MUI and controls were robust and again identified upon re-analysis of sequencing data with newer bioinformatic techniques and DMM models. These differences were not evident when using clustering methods such as DTMM that de-emphasize the dominant bacterial taxa.

UPLOAD-https://planion-client-files.s3.amazonaws.com/AUGS/blobs/df1f4168-fcb1-4d9f-955d-827e0eb06621/1/dmm_cluster_plot_46_00005.tiff

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Scientific Salon 33
EFFECT OF VAGINAL DOUCHING PRODUCTS ON BACTERIAL-VAGINOSIS ASSOCIATED SPECIES

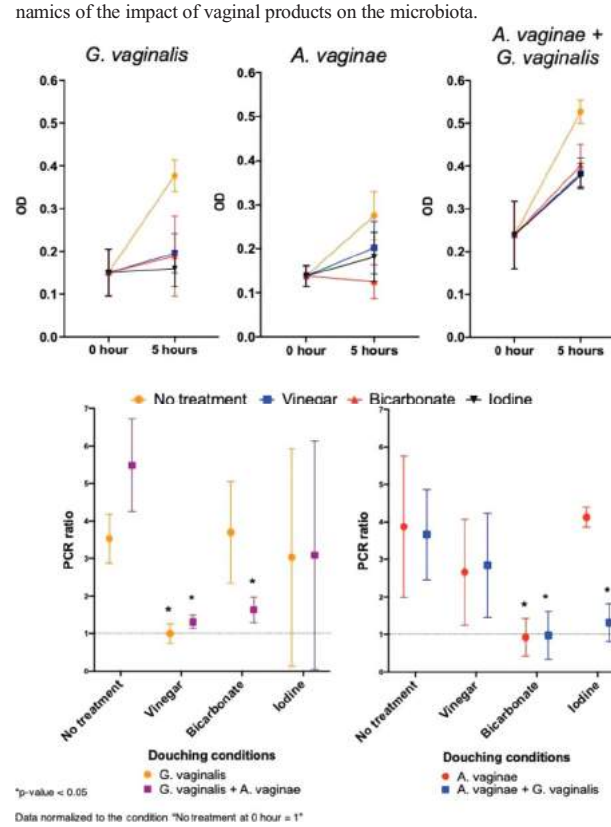
M. Ortega[1], Y. Kim[1], C. Mitchell[1]. *Massachusetts General Hospital[1]*

Objective: Bacterial vaginosis (BV), a vaginal syndrome characterized by a low abundance of *Lactobacillus* and high numbers of anaerobes increases the risk of postoperative infection after gynecologic surgery. One proposed risk factor for BV is vaginal douching, however, the causal relationship between the two has not been confirmed. To test the hypothesis that douching promotes BV, we aimed to evaluate the effect of douches on BV-associated species in vitro.

Methods: *Gardnerella vaginalis* and *Atopobium vaginae* were cultured individually and in combination in NYCIII media with/without common commercial douches containing iodine, bicarbonate, vinegar (diluted 1:4). Bacteria growth was assessed by optical density (OD 600) and quantitative PCR (qPCR) after 5 hours. Bacterial quantity after 5 hours of culture was compared between conditions by t-test calculations.

Results: By OD, all vaginal douches inhibited the growth of *G. vaginalis* when cultured alone, while only bicarbonate douche significantly inhibited the growth of *A. vaginae.* When analyzed by qPCR, only vinegar inhibited *G. vaginalis*, while only bicarbonate significantly inhibited *A. vaginae*. In co-culture, OD was higher than for the individual cultures and by qPCR *G. vaginalis* growth was enhanced by the presence of *A. vaginae.* When the two species were combined OD revealed no inhibition by any douche. However, qPCR revealed that both vinegar and bicarbonate inhibited *G. vaginalis*, while vinegar and iodine inhibited *A. vaginae*.

Conclusions: The acidic vinegar douche inhibited *G. vaginalis* growth in all conditions, as expected. However, *A. vaginae* was not inhibited by vinegar when cultured alone, but rather by the alkaline bicarbonate douche. In combination, *G. vaginalis* demonstrated enhanced growth, but also enhanced susceptibility to bicarbonate. These results suggest synergies between species and suggest that multi-species co-culture experiments are necessary to truly understand the dynamics of the impact of vaginal products on the microbiota.



Disclosures: Marcus Ortega: None, Youngwu Kim: None, Caroline Mitchell: None

Scientific Salon 34
COMPARISON OF LACTOBACILLUS IN VAGINA AND URINE BY QUANTITATIVE PCR

Y. Kim[1], A. Bergerat-Thompson[2], K. James[1], C. Mitchell[1]. *Massachusetts General Hospital[1], MGH[2]*

Objective: Vaginal colonization with lactobacilli has been linked to lower rates of recurrent UTI. There is a growing acknowledgment that the bladder is not sterile. We compared quantities of three common vaginal Lactobacillus species in vaginal and urine samples to determine what factors influence urinary detection of Lactobacillus.

Methods: We used quantitative real-time PCR (qPCR) assays to measure the concentration of Lactobacillus iners, L. jensenii, and L. crispatus in paired vaginal swabs and clean-catch urine samples from pre- and post-menopausal women. We compared demographic variables and vaginal Lactobacillus quantity between women with vaginal detection of at least one of the three species, detection in both vagina and urine, or urine only. We performed Pearson correlation between vaginal and urinary quantities of each species. We used multivariable logistic regression models to determine predictors of detectable

Lactobacillus species in both samples (vs. vagina only or urine only). Models were adjusted for variables selected a priori: age, BMI, condom use, and recent sexual activity.

Results: Ninety-three paired vaginal fluid and urine samples were included: 44 had at least one species in the vaginal samples (V), another 44 in both samples (VU), and 5 in urine only (U). Seven paired samples with no detectable quantities of >1 Lactobacillus species in either sample were excluded. Most women were white (91.4%), with a mean age of 39.8 ± 13.84 years. The three groups were significantly different in body mass index (BMI) (p = 0.04) and report of sex in the past 7 days ($P = 0.004$). There was no difference in age, race, condom use, history of cystitis, vaginal cleansing practice, and antibiotic or probiotic use in the past 7 days (all p > 0.05). L. iners was the most abundant species observed in vaginal samples ($P < 0.01$). Increased quantity of vaginal L. iners was significantly associated with detection of L. iners in both urine and vaginal specimens (OR 1.28, 95% CI 1.07-1.52). This association persisted in a multivariable analysis that was adjusted for age, BMI, condom use, and a report of recent sexual activity (aOR 1.36, 95% CI 1.09 – 1.69). In the univariable analysis of L. crispatus, younger age was associated with the detection of L. crispatus in both samples (aOR 0.92, 95% CI 0.86-0.99). However, in adjusted models, only the quantity of vaginal L. crispatus remained significantly associated (aOR 1.36, 95% CI 1.01 – 1.83). L. jensenii was the least abundant Lactobacillus in the vagina ($P < 0.001$). Vaginal quantity of L. jensenii was not associated with detectable L. jensenii in the paired urine specimens but showed an overall correlation to the quantity of L. jensenii detected in urine (Table 1).

Conclusions: In summary, the vaginal quantity of *Lactobacillus* was the most significant predictor of concurrent detection of the same species in the bladder, confirming the close relationship between these environments. Strategies to promote vaginal *Lactobacillus* colonization may also promote urinary colonization, and decreased UTI.

Table 1. Pearson correlation matrix of 16S rRNA gene copies of vaginal and urinary samples (**bolded** values, p<0.05)

	Vaginal L. jensenii	Vaginal L. iners	Vaginal L. crispatus	Urinary L. Jesenii	Urinary L. iners	Urinary L. crispatus
Vaginal L. Jensenii	1					
Vaginal L. iners	0.166392126	1				
Vaginal L. crispatus	**0.200896811**	0.156584742	1			
Urinary L. Jesenii	**0.378240675**	0.040030302	0.144962683	1		
Urinary L. iners	0.076875866	**0.354875601**	0.06125487	**0.36036292**	1	
Urinary L. crispatus	0.100794767	-0.042879781	**0.201372041**	0.100140972	0.056892576	1

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Scientific Salon 35
INCIDENCE OF UROSEPSIS AND PYELONEPHRITIS AFTER EVALUATION FOR UNCOMPLICATED URINARY TRACT INFECTION AMONG OLDER WOMEN

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Objective: To investigate characteristics associated with diagnosis of urosepsis or pyelonephritis during the 60 days following initial evaluation of an uncomplicated urinary tract infection (UTI) among female Medicare beneficiaries ≥65 years of age in a nationally representative sample grouped by age categories.

Methods: This was a retrospective cohort study of women ≥65 years of age undergoing evaluation for an incident, uncomplicated urinary tract infection (UTI) between the years of 2011-2018 included in the Medicare 5% Limited Data Set (LDS). Our cohort was defined as women that had an outpatient claim for evaluation of UTI with a urine culture order utilizing relevant International Statistical Classification of Diseases and Related Health Problems (ICD-9/10) and Current Procedural Terminology (CPT) codes. The age categories from the Medicare 5% LDS were grouped into 65-74 years, 75-84 years, or > 84 years old. We excluded women who had a UTI evaluation in the previous year and those with a diagnosis of renal transplant, kidney stones, ureteral abnormalities, neurogenic bladder, or bladder cancer in the previous year. We additionally excluded subjects hospitalized within 60 days prior to index UTI evaluation, those residing in a nursing home and place of service consistent with an inpatient setting/facility. Our primary outcome was diagnosis of urosepsis within 60 days of UTI evaluation. Our secondary outcome was diagnosis of pyelonephritis in that same interval. Characteristics of women with and without each outcome were compared utilizing chi-square tests. The association between age and risk of each outcome was estimated with Cox Proportional Hazards models, controlling for relevant comorbidities.

Results: Between 2011-2018, 169,958 women met our inclusion/exclusion criteria and were evaluated for uncomplicated UTI. In total, 2935 (1.7%) had a diagnosis of either urosepsis (n = 2848, 1.6%) or pyelonephritis (n = 145, 0.08%). In adjusted analysis, both women >84 years (aHR 1.49, 95%CI 1.38, 1.65; $P < 0.0001$) and those aged 75-84 (aHR 1.24, 95% CI 1.13, 1.37; $P < 0.0001$) had a higher hazards of urosepsis diagnosis as compared to those aged 65-74 years when controlling for confounders. (Table) There was not an increase in hazards of pyelonephritis in those >84 ($P = 0.72$) or 75-84 ($P = 0.24$) as compared to those 65-74 years old. An increase hazards of both outcomes were present in subjects with medical co-morbidities with fewer variables significantly associated with an increased hazards of pyelonephritis. (Table)

Conclusions: A diagnosis of urosepsis and pyelonephritis are very uncommon after evaluation of incident uncomplicated UTI in female medical beneficiaries ≥65 years of age. There was an increase in hazards of both outcomes in the older age categories, and also in those with multiple medical co-morbidities.

Disclosures: Megan Bradley: None, Cassie Ford: None, Michael Stagner: None, Victoria Handa: None, Jerry Lowder: None

Scientific Salon 36
ASSOCIATIONS BETWEEN URINARY LACTOBACILLI, MENOPAUSE, AND POSTMENOPAUSAL RECURRENT UTI

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Objective: Studies show associations between the urobiome and age. We hypothesized that within the female urobiome, *Lactobacilli* decrease after menopause, increase after 6 weeks of vaginal estrogen, but are still lower in abundance in those with postmenopausal recurrent UTIs. Thus, we aimed to characterize the urobiome in these groups.

Methods: In this cross-sectional study, participants provided a catheterized urine sample under research protocol. We sampled 3 groups of women without UTIs: premenopausal women ages 30-45 (Pre), postmenopausal women (Post), and postmenopausal women using vaginal estrogen (Post+vagE2). We also sampled 2 groups of postmenopausal women with recurrent culture-proven UTIs: those using vaginal estrogen alone (rUTI+vagE2) and those using estrogen and a daily antibiotic (rUTI+vagE2 + abx). Women were required to have been using vaginal estrogen for at least 6 weeks prior to sampling. Samples were analyzed using 16S rRNA sequencing with a DADA2 bioinformatic pipeline that allows for identification of *Lactobacilli* at the species level.

Results: We assessed 175 women (24 Pre, 48 Post, 47 Post+vagE2, 29 rUTI +vagE2, and 27 rUTI+vagE2 + abx). The abundance pattern of *Lactobacilli* was consistent with our hypotheses; higher in pre-menopausal compared to postmenopausal women ($P = 0.002$) as well as postmenopausal women using vaginal estrogen compared to those who were not (p = 0.03). *Lactobacillus* abundance was lower in those with recurrent UTI despite concurrent use of vaginal estrogen. Abundances of *Lactobacilli* and other relevant microbiota are summarized in Figure 1. We also identified trends towards different species of *Lactobacilli* in postmenopausal women with recurrent UTIs (Fig 2).

Conclusions: At least 6 weeks of vaginal estrogen use is associated with higher urinary *Lactobacilli* in postmenopausal women without recurrent UTIs. In those with recurrent UTIs, shifts in *Lactobacillus* species are noted. More data are needed on how urinary *Lactobacilli* change with long-term estrogen usage and how different *Lactobacillus* species interact with other constituents of the urobiome.

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UPLOAD-https://planion-client-files.s3.amazonaws.com/AUGS/blobs/aab39858-f8f6-42de-aa07-d2f3202efaea/1/umicro_figure_2.tiff

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Scientific Salon 37
DO BLADDER INSTILLATION PATTERNS IN A COHORT OF WOMEN WITH INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME FOLLOW TREATMENT GUIDELINES?

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Objective: To determine bladder instillation patterns among women receiving treatment for Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS) and whether such patterns of care are compliant with clinical guidelines.

Methods: Using the Veterans Affairs Informatics and Computing Infrastructure (VINCI), we randomly sampled female patients with an ICD-9 diagnosis of IC/PBS (595.1) from all living patients who were active users of the Veterans Affairs (VA) system. Patients were considered to truly have IC (by chart review) if they had two visits complaining of bladder centric pain in the absence of positive urine culture at least six weeks apart or a history of bladder pain/irritative symptoms with one additional visit complaining of bladder centric pain. We extracted the dates of bladder instillations for each patient in this cohort. A "course" of instillations was defined as sequential instillations made with less than 21 days in between each visit and "maintenance" as isolated treatments. Medications used were queried for each instillation.

Results: We identified 71 women with confirmed diagnosis of IC/BPS who underwent bladder instillations. They received a total of 333 instillations in the first three years after the date of IC/BPS diagnosis. On average each subject had 1.5 (SD = 0.8) courses over the timeframe analyzed. Each course was an average of 3.1 (SD = 2.6) instillations. Over the 333 instillation visits, 77% were a cocktail drug of 2 or more drugs. Lidocaine was the most frequent medication used followed by heparin and sodium bicarbonate (Table 1).

Conclusions: In our cohort, few women with IC/BPS received the typically recommended treatment course of six weekly bladder instillations, with most receiving fewer instillations per course. A single-drug solution was used for almost one-fourth of instillations. Our next step is to determine if instillation courses were shortened and altered from the guideline to due provider practice patterns, immediate pain relief, or poor tolerance of instillations.

Table 1. Frequency of each drug used in instillations

	N=333 Visits
Lidocaine*	241 (72%)
Heparin*	205 (62%)
SodiumBicarbonate	152 (46%)
Dimethyl Sulfoxide*	129 (39%)
Steroid	57 (17%)
PentosanPolysulfateSodium	45 (14%)
Marcaine	42 (13%)

*Recommended instillation agent by the American Urological Association IC/BPS Guideline

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Scientific Salon 38

INTRADETRUSOR BOTULINUM TOXIN TYPE A (BTX-A) FOR TREATMENT OF OVERACTIVE BLADDER (OAB) IN WOMEN: A PILOT STUDY OF PROTOCOLS WITH FEWER THAN THE STANDARD NUMBER OF INJECTION SITES

S. Bernstein[1]. *M Health Fairview*[1]

Objective: OAB is a common disorder of the pelvic floor. The FDA-approved, per-label protocol for BTX-A treatment of OAB is intradetrusor injection at 20 sites x 0.5 mL (100 units overall). We hypothesized that using fewer injection sites might improve safety, tolerability, and compliance without impairing efficacy or requiring treatment more often than is recommended for the standard 20-site protocol.

Methods: We reviewed the records of patients with OAB treated at our center from January 2014 to September 2020. Our initial modified protocol was injection of 100 units of BTX-A in 10 mL of saline divided among 3 detrusor sites. Subsequently, the protocol became 100 units of BTX-A in 6 mL of saline injected into 1 detrusor site. For both cohorts, the retreatment interval was set at 6 months and could be reduced or extended according to each patient's response to treatment. Outcome measures included efficacy (>50% improvement reported by the patient), treatment interval, and safety.

Results: Included in the study were patients with OAB who received BTX-A treatment (100 units per session) at 3 or 1 injection sites who had data available for at least 1 outcome measure (N = 132). There were 297 treatment sessions at 3 sites and 25 sessions at 1 site. Improvement of >50%, as reported by the patient 2 weeks after treatment, occurred with 98% of 3-site treatments and 100% of 1-site treatments. The mean interval (± standard error of mean [SEM]) between treatments was 6.7 ± 0.18 months in the 3-site treatment cohort and 6.5 ± 0.29 months in the 1-site cohort. Urinary tract infection (UTI) occurred in 10% and 5% of the 3-site and 1-site treatment sessions, respectively. These UTI rates are lower than those typically associated with the standard 20-site protocol, which involves a course of antibiotic prophylaxis to mitigate UTI; however, only 1 dose of antibiotic prophylaxis was used with our 3-site and 1-site protocols. Average post-void residual values (± SEM) were 102 ± 6.6 mL in the 3-site cohort and 80 ± 17 mL in the 1-site cohort. No patient required de novo catheterization after treatment. No clinically significant bleeding occurred in either cohort.

Conclusions: BTX-A treatment protocols for OAB that have few injection sites (1 or 3) appear efficacious and may be safer than the standard 20-site injection protocol. In this pilot study, the modified protocols were associated with low UTI rates, acceptable residual volumes, and no clinically significant bleeding. Mean retreatment intervals exceeded the recommended 6.0 months. By reducing the risk of patient discomfort, UTI, and bleeding, protocols that involve few injection sites have the potential to improve patient adherence to BTX-A therapy. Adequately powered, randomized, controlled, multicenter studies are warranted to further explore the potential benefits of protocols with fewer than the standard 20 injection sites.

Disclosures: Steve Bernstein: None

Scientific Salon 39

DO MEDICATION PRESCRIPTION PATTERNS FOLLOW AUA GUIDELINES IN A COHORT OF WOMEN WITH INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME?

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Objective: To describe medication prescription patterns for women with Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS) and to determine whether prescription patterns follow treatment guidelines.

Methods: Using the Veterans Affairs Informatics and Computing Infrastructure (VINCI), we identified female patients with an ICD-9 diagnosis of IC/BPS (595.1) by querying all living patients who were active users of the Veterans Affairs (VA) system. Patients were considered to truly have IC (by chart review) if they had two visits complaining of bladder centric pain in the absence of positive urine culture at least six weeks apart or a history of bladder pain/irritative symptoms with one additional visit complaining of bladder centric pain. We then identified our control group of women with other pelvic pain disorders (non-IC/BPS) using ICD-9 codes for dyspareunia, vaginismus, vulvodynia, and vulvar vestibulitis. We also compared medication prescription prevalence before and after the diagnosis of IC/BPS was made.

Results: We identified 522 women with a diagnosis of IC/BPS who met our criteria and 131 women with other pelvic pain disorders. On average, the IC/BPS cohort was prescribed a bladder medication 35.1 months prior to being diagnosed with IC/BPS whereas the controls were prescribed a bladder medication on average 15.3 months prior to diagnosis of pelvic pain ($P < 0.0001$) (Table 1). Of the IC/BPS medications recommended by the American Urological Association clinical guideline, prescription incidence increased after diagnosis for both pentosan polysulfate (17% to 36%, $p < 0.0001$) and hydroxyzine (31% to 50%, $P < 0.0001$) but did not increase for amitriptyline or cimetidine. Of women with

Table 1. Demographic Data

	IC (n=522)		IC-Like (n=131)		p-value
Age at Diagnosis	47.7 (12.4)		46.4 (12.3)		0.3173
Race					
Caucasian	336	64%	81	62%	**0.0104**
Black	135	26%	32	24%	
Hispanic	31	6%	4	3%	
Other/Unknown	20	4%	14	11%	
BMI	28.3 (5.9)		27.9 (5.9)		0.5330
Months followed pre-Diagnosis	35.1 (47.7)		15.3 (17.2)		**<0.0001**
Months followed post-Diagnosis	89.0 (57.9)		84.3 (53.3)		0.3966
Ever prescribed any AUA approved Rx	428	82%	78	60%	**<0.0001**

Table 2. IC/BPS medications recommended by the American Urological Association and their prescription prevalence prior to and after diagnosis

	Medications Prescribed Pre-Diagnosis (n=355)		Medications Prescribed Post-Diagnosis (n=510)		p-value
Tricyclic Antidepressant:	**176**	**50%**	**218**	**43%**	
AMITRIPTYLINE	111	31%	154	30%	
DESIPRAMINE	8	2%	2	0%	
DOXEPIN	36	10%	45	9%	
IMIPRAMINE	16	5%	19	4%	
NORTRIPTYLINE	44	12%	54	11%	
H2 Blocker:	**124**	**35%**	**177**	**35%**	
CIMETIDINE	13	4%	10	2%	
RANITIDINE	116	33%	169	33%	
Antihistamine:					
HYDROXYZINE	109	31%	255	50%	<0.0001
Acidifier					
METHENAMINE	0	0%	16	3%	
Protective coating:					
PENTOSAN	61	17%	182	36%	<0.0001
Analgesic:					
PHENAZOPYRIDINE	123	35%	228	45%	
Any AUA Approved medications: (Amitriptyline, Cimetidine, Hydroxyzine, Pentosan)	211	59%	380	75%	<0.0001

a diagnosis of IC/BPS, 18% were not prescribed an AUA-recommended medication. (Table 2).

Conclusions: For women with IC/BPS, the time from initial bladder medication prescription to a diagnosis of IC/BPS was significantly longer than for similar pelvic pain conditions. This highlights the uniquely long delay in diagnosis faced by many IC/BPS patients. In this cohort, pentosan polysulfate and hydroxyzine were preferred IC/BPS medications over amitriptyline or cimetidine. Our next step will be to analyze treatment patterns in those patients who did not receive medications.

Disclosures: Lauren Tholemeier: None, Catherine Bresee: None, Amanda De Hoedt: None, Jayoung Kim: None, Stephen Freedland: None, Jennifer Anger: None

Scientific Salon 40
PREVALENCE OF URGE URINARY INCONTINENCE AMONG WOMEN WITH INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME.

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Objective: Symptoms of urinary frequency, urgency, and urinary leakage are characteristic of overactive bladder syndrome. Frequency and urgency symptoms are also present in the majority of patients with Interstitial Cystitis/bladder pain syndrome (IC/BPS); however, the presence of urge incontinence among women with IC/BPS, which may indicate true overlap of OAB and IC, is not well established.

Methods: This is a prospective study of women who had interstitial cystitis and was treated in the Veterans Affairs Health Care system, and who completed the Overactive Bladder Questionnaire. Questions 4 and 8 from this questionnaire were used to analyze symptoms of urinary urgency and urinary urge incontinence. Patient demographics, comorbidities, and symptoms were assessed.

Results: Overall, 168 women with diagnosis of IC/BPS and completed questionnaires were identified. Most of the women were non-black 74% (123) and not Hispanic 93% (147), with 26%(43) of Black. Among the cohort 53% (89) had a history of depression, 51 % (86) Post Traumatic Stress Disorder (PTSD), 31% (52) with Irritable bowel syndrome (IBS), and 9% (15) with a history of alcohol abuse. The prevalence of urinary leakage among this group was 83% (139 women) with 47 patients having "a little bit" and 23 having "a very great deal" of leakage. Urine loss associated with a strong desire to void was present among 71% (119 women). There was no statistically significant difference in demographics, comorbidities between women with and without urinary leakage.

Conclusions: Overall, the prevalence of OAB symptoms of urinary leakage is high among women with IC/BPS regardless of age, race, ethnicity and evaluated comorbidities. This may explain the efficacy of OAB medication and third line therapies in this population. Further studies of the effect of OAB targeted treatment on quality of life among women with IC/BPS are needed.

Table 1: Patient characteristics across females with IC/BPS

	Diagnosed with IC (N=168)
OAB-q	
Accidental loss of small amount of urine	
Not at all	31 (18%)
A little bit	47 (28%)
Somewhat	24 (14%)
Quite a bit	28 (17%)
A great deal	15 (9%)
A very great deal	23 (14%)
OAB-q	
Urine loss associated with a strong desire to urinate	
Not at all	49 (29%)
A little bit	39 (23%)
Somewhat	24 (14%)
Quite a bit	14 (8%)
A great deal	16 (10%)
A very great deal	26 (15%)
Incontinence	
Yes	139 (83%)
Age at time of consent	
Median	53
Q1, Q3	45, 62
Race	
Missing	2
Black	43 (26%)
Non-Black	123 (74%)
Ethnicity	
Missing	10
Hispanic	11 (7%)
Not Hispanic	147 (93%)
History of depression	
Yes	89 (53%)
History of alcohol abuse	
Yes	15 (9%)
History of PTSD	
Yes	86 (51%)
History of IBS	
Yes	52 (31%)

Disclosures: Alexandra Dubinskaya: None, Lauren Tholemeier: None, Tyler Erickson: None, Amanda De Hoedt: None, Jayoung Kim: None, Stephen Freedland: None, Jennifer Anger: None

Scientific Salon 41
EFFECT OF AGE ON ADVERSE EVENTS AFTER ONABOTULINUMTOXINA INJECTION FOR OVERACTIVE BLADDER

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Objective: OnabotulinumtoxinA (BTX-A) injections are an effective third line treatment for overactive bladder and have known risks of urinary tract infection and urinary retention. Elderly women are at high risk of severe complications from these adverse events, but it is unclear whether elderly women have higher adverse event rates after undergoing BTX-A. The purpose of this study is to compare rates of adverse events after intradetrusor BTX-A injections for urge incontinence in women less than 65 years, 65 to 79 years and 80 years of age or older. We also aim to compare the discontinuation and failure rates, as well as reasons for stopping treatment between these cohorts.

Methods: This is a retrospective cohort study of all women who underwent 2 or more BTX-A treatments for overactive bladder in the outpatient office setting with a FPMRS surgeon at a tertiary care center from January 2014 to July 2019. Patients were identified using CPT code 52287 and were excluded if they already utilized clean intermittent catheterization prior to BTX-A injection. Adverse events included urinary tract infection (UTI) defined as antibiotics prescribed within 4 weeks of BTX-A injection, recurrent treatment-associated UTI (rUTI) defined as UTI after >50% of BTX-A injections, and clean intermittent catheterization (CIC) defined as provider recommendation to perform CIC.
Results: 216 women were included. The mean age was 62 years (SD 13.9) and 51% identified as Black. The median number of BTX-A treatments was 3 (IQR 2,4) over a mean of 20.7 months (STD 13.8).

Women >80 years were more likely to have a lower BMI, be past smokers, have hypertension and have undergone prior hysterectomy, and were more likely to have undergone prior peripheral tibial nerve stimulation (Table 1).

Overall 33.8% of women experienced an adverse event. When comparing the three cohorts, there was no significant difference between the rate of individual as well as composite adverse events (Table 1). 40% of women discontinued BTX-A treatment with no significant difference in discontinuation rates between the groups. Of patients who discontinued BTX-A treatment, more than 50% were lost to follow up.
Conclusions: There were no differences in adverse event rates after BTX-A injections for overactive bladder in women 80 year of age or greater when compared to women less than 65 years of age and women 65-79 years of age. There was also no significant difference in discontinuation rates between the cohorts.

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Disclosures: Katherine Woodburn: None, Nancy Ringel: None, Lee Richter: None, Alexis Dieter: None

Scientific Salon 42
COMPARISON OF CROWD-SOURCED REPORTING TO METANALYSIS DATA: PREVALENCE OF ANTIMUSCARINIC SIDE EFFECTS.

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Objective: To compare the side effect profiles of antimuscarinics reported through two different reporting platforms: an online patient facing review forum, and historically reported data.
Methods: A cross-sectional analysis was performed of user reviews for oxybutynin, tolterodine, solifenacin, fesoterodine, favoxate, darifenacin and trospium from *drugs.com*, an online, public-facing pharmaceutical resource and community forum. Anti-muscarinic medication reviews prior to Feb 2, 2020 were exported to text using "Web Scraper" for analysis. Extracted user content was reviewed qualitatively using a modified inductive content analysis method where clinical relevance formed the basis for initial codes. Codes were subsequently modified by salient, emergent findings. Three members of the research team independently coded 10% of the reviews, with duplicated coding to allow comparison of codebooks, and iterative modification until substantial agreement was obtained (Cohen's Kappa >0.6) at which point the remainder were reviewed independently. Codes related to side effects were categorized by organ system.

We analyzed side effect themes from our analysis of Drugs.com against those reported in published trials collated from Chapple's systematic review and meta-analysis published in *European Urology* in 2008. Identification of published comparators was performed by initially reviewing meta-analyses using MEDLINE literature search of publications since 2000 using the terms: "Antimuscarinic" "Anticholinergic" "Overactive Bladder" and "Meta-analysis". Each meta-analysis (n = 32) was reviewed and evaluated for number of subjects and format of data presentation to select one for comparison.
Results: 469 reviews were extracted from Drugs.com and 73 trials were abstracted by Chapple *et al*. Overall adverse events were more commonly reported using online reviews (64.6% vs. 53.4%, $P < 0.01$). (Table 1) The most common side effect categories in both forums were: gastrointestinal, central nervous system, and renal/urinary. By specific side effect, both forums identified the same four most common side effects: dry mouth, constipation, confusion and headache. Several of the more uncommon side effects (confusion, diarrhea, dyspepsia and somnolence) were not significantly different from published proportions.
Conclusions: Public facing online reviews identified the same most common side effects as traditional methods though with some different rates. If websites collecting self-reported data can be standardized and accessed, self-reported data may supplement research study based methods of post-market surveillance. Public facing sites could potentially improve access to reporting mechanisms.

Table 1.

	Drugs.com N=469	Chapple *et al.* N=8310	
Any adverse event	64.6%	53.4% (N=9199)*	<0.01
Dry mouth (any severity)	44.9%	29.6%	<0.01
Constipation	20.5%	7.7%	<0.01
Confusion	9.2%	7.7%	p=0.69
Headache	12.2%	5.9%	<0.01
Urinary tract infection	2.0%	5.0%	0.017
Dyspepsia	5.0%	4.7%	0.83
Blurred vision	10.9%	3.8%	<0.01
Diarrhea	3.0%	3.7%	0.51
Dizziness	5.9%	3.5%	0.025
Nausea	6.6%	3.2%	0.001
Somnolence	2.6%	3.1%	0.66

* N varies depending on reporting of specific class of side effect across studies

Disclosures: Kyle Latack: None, Elise Morocco: None, Katharine Ciesielski: None, Brian Nguyen: None, Christina Dancz: None

Scientific Salon 43
RETHINKING UTI: DISTINCT SYMPTOM PROFILES ASSOCIATE WITH SPECIFIC URINARY MICROBIOTA

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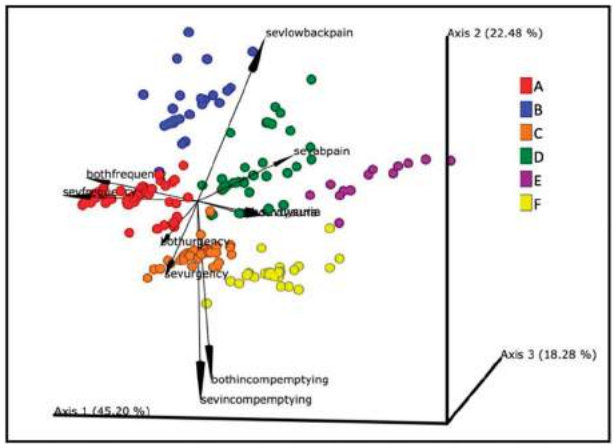
Objective: Assess associations between urinary microbiota and lower urinary tract symptoms profiles (symptotypes) in ambulatory, adult women with UTI symptoms.
Methods: This is a subanalysis of an IRB-approved study that included adult women presenting for UTI symptoms evaluation who responded "yes" to "do you feel you have a UTI" and agreed to urethral catheterization. Women currently on antibiotics, pregnant, had an indwelling catheter, performing intermittent self-catheterization, or whose clinician deemed she needed empiric treatment at enrollment were excluded. Following verbal & written consent, participants answered the validated Urinary Tract Infection Symptom Assessment (UTISA) questionnaire and contributed catheterized urine specimens, which we assessed by expanded quantitative urine culture (EQUC). Principal component analysis (PCA) of UTISA scores clustered participants into symptotypes based on severity (sev) and degree of bother (both) of UTI symptoms, biplot analysis identified symptoms responsible for variation, and compared EQUC results to symptotypes.
Results: The 225 participants averaged 66 years. PCA of UTISA scores resulted in 6 distinct symptotypes (**Figure**): A (N = 87), B (N = 42); C (N = 34), D (N = 26), E (N = 23) and F (N = 37). Biplot analysis revealed UTISA components responsible for variation between symptotypes: urgency severity/degree of bother and incomplete emptying severity/degree of bother, abdominal pain severity, frequency severity/degree of bother and overall symptom severity, and dysuria severity/degree of bother. Some symptotypes (A, C, E) complained of severe, mild, or moderate symptom severity/degree of bother for each UTISA category. The other symptotypes (B, D, F) had increased severity/degree of bother for frequency and urgency, incomplete emptying, and frequency, respectively, compared to other categories. Comparison of EQUC results across symptotypes showed a similar prevalence of *Escherichia coli* in all groups ($p = 0.31$); *E. coli* was found in similar prevalence in all 6 symptotypes. However, the frequency of non-*E.coli* microbiota varied by symptotype, although no single microbe was always present within samples grouped by a single symptotype.
Conclusions: This UTI population contained 6 distinct symptotypes characterized by severity and degree of bother of certain UTISA components. The structure of the overall microbial community appears to differ across symptotypes; however, host genetic differences may account for this difference. These data suggest that the current definition of UTI may encompass multiple, distinct disease states, and that *E. coli* alone may not be the underlying cause of those states.

Figure: Six distinct symptotypes exist within a single UTI population (N=225).



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Scientific Salon 44
CHARACTERISTICS ASSOCIATED WITH OUTPATIENT EVALUATION FOR RECURRENT URINARY TRACT INFECTIONS IN OLDER WOMEN

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Objective: Currently, there is very little data on the incidence of uncomplicated, recurrent urinary tract infection (UTI) evaluation in women >65 years of age. Among female medical beneficiaries with at least one outpatient evaluation for UTI, we sought to identify characteristics associated with recurrent UTI evaluations.

Methods: This was a case-control study of women ≥65 years of age undergoing evaluation for a UTI between the years of 2011-2018 who were included in the Medicare 5% Limited Data Set. We defined UTI evaluation as an outpatient encounter with relevant International Statistical Classification of Diseases and Related Health Problems (ICD9/10) diagnostic codes suggestive of UTI and an order for urine culture. Cases were women with recurrent evaluations for UTI (defined as ≥2 UTI evaluations in 6 months and/or ≥ 3 in one year) and controls were women with only a single UTI evaluation in the year following their incident visit. We excluded women who had a UTI evaluation in the previous year and those with a diagnostic codes corresponding to a diagnosis of renal transplant, kidney stones, ureteral abnormalities, neurogenic bladder, or bladder cancer. We additionally excluded subjects hospitalized within 60 days prior to index UTI evaluation, those residing in a nursing home and place of service consistent with an inpatient setting/facility. The characteristics of cases versus controls were compared with both an unadjusted and adjusted logistic regression model.

Results: Our overall cohort consisted of 169,958 women undergoing an evaluation for uncomplicated UTI n the study time frame, of which 13,779 cases (8.1% of all incident UTI evaluation episodes) had recurrent UTI evaluations along with 156,179 controls. In unadjusted analyses, cases were more likely to be either age 75-84 or > 84 years, of white race and had a higher proportion of every comorbidity (all $P < 0.001$) as compared to controls. In adjusted analysis, age 75-84 (aOR 1.26, 95% CI 1.19-1.34; $P < 0.001$), age > 84 years (aOR 1.59, 95% CI 1.49-1.68; $P < 0.001$) along with multiple medical comorbidities were significant risk factors for recurrent UTI evaluations. (Table) Black women had a lower odds of recurrent UTI evaluation (aOR 0.81; 95% CI 0.71,0.94, $P = 0.003$)

Conclusions: Recurrent UTI evaluations after incident uncomplicated UTI visit were associated with older age, white race and multiple medical comorbidities. Future studies investigating antibiotic prescriptions and urine culture results between these populations will improve our ability to characterize older women at risk for incident, recurrent UTIs and determine if there are racial disparities seen in care delivery and/or care-seeking behaviors.

Table: Adjusted Odds of Recurrent Evaluation for Urinary Tract Infection after Incident Evaluation in Female Medicare Beneficiaries

	Adjusted OR	95% CI	p-value
Aged 75-84 years*	1.26	1.19,1.34	6.2x10-15
Aged >84 years*	1.59	1.49,1.68	2x10-16
Black Race	0.81	0.71,0.94	0.005
Northeast Region	1.05	1.01,1.10	0.02
Myocardial Infarction	0.94	0.86,1.13	0.04
Cardiovascular Disease	1.05	1.01,1.10	0.02
Dementia	1.25	1.19,1.32	2x10-16
Diabetes	1.14	1.09,1.18	1.1x10-8
Diabetes with complications	1.08	1.01,1.14	0.02
Rheumatologic Disease	1.22	1.13,1.30	2.9x10-9
Cancer	1.07	1.02,1.13	0.009
Congestive Heart Failure	1.19	1.13,1.24	4.1x10-13
Peripheral Vascular Disease	1.08	1.04,1.13	0.0002
Mild Liver Disease	1.14	1.01,1.27	0.03

*Comparator Category is 65-74 years old

Disclosures: Megan Bradley: None, Michael Stagner: None, Cassie Ford: None, Jerry Lowder: None, Victoria Handa: None

Scientific Salon 45
TREATMENT NAVIGATOR IMPACT ON UTILIZATION OF ONABOTULINUMTOXINA AS THIRD LINE TREATMENT IN OVERACTIVE BLADDER: A RETROSPECTIVE DATABASE STUDY IN THE UNITED STATES

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Objective: Second-line pharmacotherapies for the treatment of overactive bladder (OAB) are associated with high discontinuation rates while cumulative anticholinergic use is associated with increased risk of cognitive impairment. Third line options (onabotulinumtoxinA [onabotA] and neuromodulation) have high objective and subjective success rates yet only 10% of patients progress to a third-line therapy in a urology practice setting. Reasons include a lack of understanding of options, fear of side effects, or desire to avoid invasive treatments. A patient-centered approach to guide the patient through the OAB care pathway may optimize treatment utilization, however, the capacity to provide such care may be influenced by practice size. We compared prevalence rates of patients progressing to onabotA and continuing treatment with and without a patient navigator (defined as a healthcare professional focused on patient-centered care).

Methods: Adult patients diagnosed and treated for non-neurogenic OAB between January 1, 2015 and December 31, 2019 were retrospectively identified using ICD-9, ICD-10 and procedure codes from the Precision Point Specialty Analytics Portal, an electronic medical record database covering over 2.4 million community-based urology patients. Patients with a minimum of two OAB clinic visits at least 30 days apart were considered for inclusion. A subset of eligible patients were randomly selected and stratified into navigation and non-navigation groups. Treatment continuation was defined as retreatment within 12-months.

Results: A total of 9,000 patients (navigated care [n = 1,151] and non-navigated care [n = 7,849]) were randomly selected from the 170,000 patients who met all study inclusion criteria. Navigated-care and non-navigated care patients were most likely to be treated at a medium sized practice (34.9% and 35.8%, respectively). Mean age at diagnosis (index date) was 63.5 ± 16.9 years (64.0 navigated and 63.5 non-navigated) and 59.9% of patients were female (81.7% navigated vs. 56.7% non-navigated; $P < 0.001$). Patients receiving navigated care were more likely to advance to a third line treatment or specifically to onabotA versus non-navigated care (both $p < 0.001$; Table 1). The proportion of patients continuing onabotA treatment significantly improved with navigated care versus non-navigated care ($P = 0.042$; Table 1).

Conclusions: Patients receiving navigated patient-centered care had significantly increased utilization of third line treatment options such as onabotA and improved treatment continuation. Future research should explore the impact of navigated patient centered care on patient satisfaction, quality of life outcomes, and the need for further treatments.

Table 1. Patient demographics, utilization and continuation of onabotA

Variable	Overall (N=9,000)	Navigator Patients (N=1,151)	Non-Navigator Patients (N=7,849)	OR (95% CI)	P-value
Gender, n (%)					
Female	5,392 (59.9)	940 (81.7)	4,452 (56.7)	--	
Male	3,607 (40.1)	211 (18.3)	3,396 (43.3)	--	< 0.001
Total	8,999	1,151	7,848	--	
Mean (SD) age at OAB diagnosis, years	63.5 (16.9)	64.0 (15.1)	63.5 (17.2)	--	0.119
Progressed to 3rd line treatment, n (%)	1,126 (12.5)	274 (23.8)	852 (10.9)	2.6 (2.2 – 3.0)	< 0.001
onabotA as a 3rd line therapy, n (%)	520 (5.8)	121 (10.5)	399 (5.1)	2.2 (1.8 – 2.7)	< 0.001
onabotA continuation, n (%)[a,b]	136 (48.2)	38 (59.4)	98 (45.0)	1.8 (1.0 – 3.2)	0.042

[a]onabotA continuation defined as returning for re-treatment within a 12-month window of receiving initial treatment.
[b]Percentage of onabotA patients with at least 12-months of follow-up data available following initial onabotA treatment: initial treatment date on or before December 31, 2018 (N = 282 overall: 64 Navigator patients, 218 Non-Navigator patients).

Disclosures: Ekene Enemchukwu: None, Jennifer Miles-Thomas: Allergan: Consultant: Self , Nitya Abraham: None, Raveen Syan: None, Keely Madaj: AbbVie/Allergan: Abbvie/Allergan is sponsoring the research project: Self , Krystal Anson Spenta: AbbVie (Allergan): Employee: Self , Amin Boroujerdi: None, Zhanying Bai: None, Lei Luo: Abbvie: Other Financial or Material Support: Self , Diane Newman: Urovant Sciences: Speakers' Bureau: Self

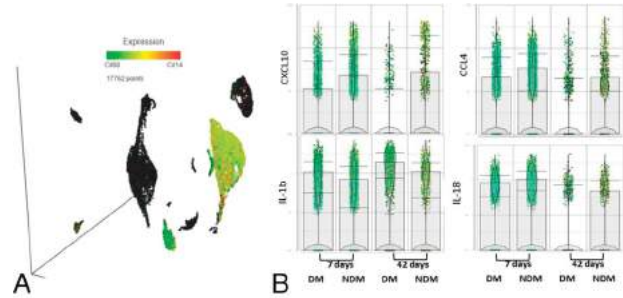

Figure: (A) Macrophages expressing CD68 (green) and CD14 (red) were selected from graph-based clustering using UMAP; (B) Differential expression analysis showed an abnormal pattern of cytokines including downregulated CXCL10, CCL4, IL-18 and upregulated IL-1b in macrophages of diabetic (DM) vs. nondiabetic (NDM) rats at 7- and 42- days following mesh implantation. Each dot represents one cell. Data are demonstrated by box whisker and violin plots.

Disclosures: Rui Liang: None, Songjian Lu: None

Scientific Salon 46
IN-DEPTH ANALYSIS OF MACROPHAGE RESPONSE TO MESH UNDER HYPERGLYCEMIC VS NORMOGLYCEMIC CONDITIONS

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Objective: Women with diabetes have an increased risk in developing mesh complications such as exposure and pain. The mechanism remains unclear. Macrophage, the key immune cell type responding to mesh implanted upon vagina, has been found dysfunctional in patients with diabetes. Here we aim to examine the impact of hyperglycemia on gene signatures of macrophage activation in response to mesh implanted upon vagina at short and long terms.

Methods: Diabetes was induced in middle-aged female Wistar rats (9 - 12 months, 300–450 g) with streptozotocin. The development of diabetes was confirmed by polydipsia, polyuria, and hyperglycemia (>350 mg/dL). Two weeks later, a polypropylene mesh was implanted on the anterior and posterior vagina via modified sacrocolpopexy following bilateral ovariectomy and supracervical hysterectomy. Normoglycemic rats undergoing the same procedures served as control group. At 7- and 42-days post-surgery, single cell suspension was prepared from mesh-grafted vagina using enzymic digestion for Fluorescence-activated cell sorting. Viable CD45+ (pan-marker of immune cells) cells from 3 rats at each time point in each group were sorted and pooled for single cell RNA sequencing, which was performed on a NextSeq500 system (10X Genomics technology) with 50,000 reads/cell in 5000 cells per sample. Cell clustering and gene differential expression (DE) analysis were performed with Partek Flow. Fold changes ≥ absolute 2 with FDR < 0.05 was accepted as significant difference. Signaling pathways was examined with Ingenuity Pathway Analysis.

Results: Each cell preparation had >85% cell viability with cliff-knee plots confirming high quality of data. Mapping is >95% with 50 - 60% mapping to transcriptome. DE analysis of CD68 + CD14+ (pan macrophage markers) cells between diabetic and nondiabetic rats identified 64 genes which were differentially expressed at 7 days, and the number increased to 360 at 42 days post-mesh implantation, indicating a more significant impact of hyperglycemia in the long term. In diabetic rats, the pattern of cytokine expression in macrophages was disturbed with constitutively downregulated CXCL10, CCL4 and IL-18 and upregulated IL-1b (Figure); function of macrophage including pro-inflammatory M1 (CD68 + CD14 + CD86+) and pro-healing M2 (CD68 + CD14 + MRC1+) phenotypes was impaired at both time points, centering on inhibited signaling in anti-virus, anti-microbiome, phagocytosis, and interaction with T cells, as shown by pathway analysis.

Conclusions: Hyperglycemia modifies the profile of gene expressions in macrophages, leading to compromised cell function and response to mesh implanted upon vagina. Future studies on macrophage-based therapies are warranted to improve the outcomes of mesh in women with diabetes.

Scientific Salon 47
DIABETES NEGATIVELY IMPACTS LONG-TERM PAIN RELIEF AFTER MESH REMOVAL

R. Liang[1], A. Artsen[2], P. Moalli[3]. *University of Pittsburgh, Magee-Womens Research Institute[1], Magee-Womens Research Institute[2], Magee Women's Hospital of the University of Pittsburgh[3]*

Objective: Patients experiencing pain following mesh implantation often require mesh removal. Since patients with diabetes have impaired immune function and develop neuropathy, we hypothesize that the effect of mesh excision on pain relief may be affected by the diabetic status. In this cohort study, we aimed to investigate the impact of diabetes on patient-reported pain following mesh excision and identify biomarkers that can predict the pain outcomes.

Methods: Following informed consent, 200 women undergoing mesh excision were recruited into a Mesh Biorepository study. Demographic data and scores of patient-reported pain via standardized questionnaires of visual analog scales (VAS) of pelvic pain were collected at baseline, 6 and 12 mos after mesh removal. Patients who had VAS scores >12 mm at baseline and had follow up data at 6 or 12 mos post-excision were included in a responder analysis for each VAS variable. Women with diabetes were identified by medical history confirmed by diabetic medication. Proteins were extracted from mesh-tissue complexes excised during mesh removal. A panel of 37 immune mediators and growth factors were assayed via multiplex Luminex. Chi-square, paired t, multivariate regression analysis and Pearson's correlation were used with significance set at $P < 0.05$.

Results: Comparing demographics in women with diabetes (DM, n = 25) vs. without (NDM, n = 175), DM had higher BMI (32.6 ± 4.2 vs. 29.1 ± 5.8, $P < 0.001$) with no differences in age, gravidity, parity, race, smoking status, menopausal status, or hormone use. VAS pain scores for different pain types including pelvic pain (n = 140), dysuria (n = 139), dyspareunia (n = 118) and dyschezia (n = 138) were recorded at baseline. The frequency of each pain type did not differ between the two groups. At 6 mos after mesh removal, pain scores were improved in both groups except for dyschezia in DM group ($P = 0.06$). At 12 mos, pain scores in NDM group remained significantly lower than baseline. In contrast, pain scores in DM group did not differ from baseline for pelvic pain, dyspareunia and dyschezia despite an improvement in dysuria (p = 0.036) (Figure). Responder analysis did not show differences between the two groups at either time point. At 12 mos, pain scores in NDM group were positively correlated to the levels of G-CSF and FGF-2 while the scores in DM group were instead positively correlated to the levels of pro-inflammatory macrophage cytokines (MIG, IL-8, and CXCL9) (all $r > 0.7$, $P < 0.05$).

Conclusions: Mesh removal substantially achieved pain relief in women with and without diabetes in the short term. Diabetes negatively impacted pain relief in the long term, possibly due to altered pathways of pain involving macrophage dysfunction at mesh-tissue interface.

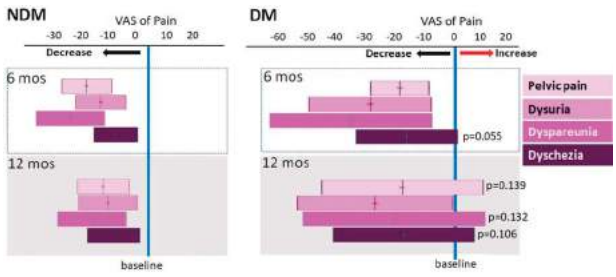
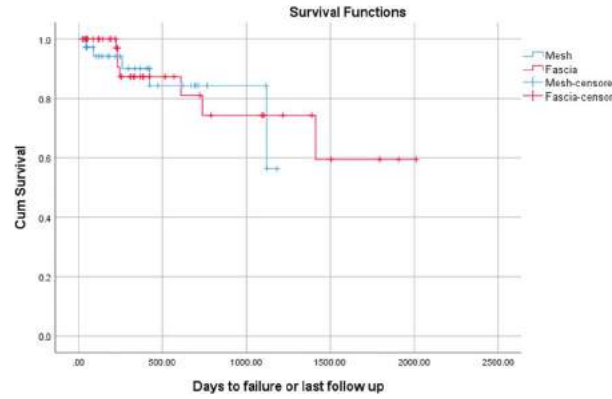


Figure. Changes of visual analog scales (VAS) of pain following mesh removal at 6- and 12-months in women with diabetes (DM) vs. without (NDM) relative to baseline, showing less satisfactory outcomes in the DM group in the long term. Bar represents median pain score with 1st quartile at the left end and 3rd quartile at the right end; p indicates statistical difference between baseline and 6 or 12 months via paired t tests with all $p < 0.05$ except those labeled in the graph.



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Scientific Salon 48
A RETROSPECTIVE STUDY OF OUTCOMES FOLLOWING ABDOMINAL SACROCOLPOPEXY PERFORMED WITH AUTOLOGOUS FASCIA VERSUS MESH

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Objective: While abdominal sacrocolpopexy (ASC) using mesh provides the most durable reconstructive surgical outcomes for pelvic organ prolapse, patients and surgeons may avoid ASC due to concern for mesh complications. Autologous fascia grafts have been used as an alternative to mesh, but evidence regarding success and complications is limited. This study's objective was to compare surgical outcomes of ASC using autologous fascia vs. mesh.

Methods: A retrospective cohort study was performed of patients who underwent ASC using autologous fascia or polypropylene mesh from 2012-2019. Data were recorded from the electronic chart. Intraoperative, inpatient, 30-day postoperative, and graft/graft harvest-related (any time point) complications were identified. Composite surgical failure was defined as presence of any of the following: subjective bulge symptoms, prolapse beyond the hymen, or prolapse retreatment. Student t, Mann-Whitney U, chi-square and Fisher's exact tests and Kaplan-Meier survival analysis were used to compare characteristics and outcomes between groups.

Results: Ninety-five patients underwent ASC with autologous fascia (n = 53; 18 fascia lata and 35 rectus fascia) or mesh (n = 42). Age (61.2 ± 11.5 y), body mass index (28.7 ± 5.3 kg/m^2), Charlson Comorbidity Index (2.5 ± 1.6), and preoperative prolapse stage (64% vs. 50% stage 3-4 in fascia vs. mesh, respectively; $P = 0.37$) did not differ between groups. Operative time was longer for ASC with fascia vs. mesh (295 ± 69.2 vs. 263 ± 64.0 min, $P = 0.008$); concurrent anterior, posterior and enterocele repairs were more common in the fascia group. Estimated blood loss and length of stay were not different. Median (range) postoperative follow-up for fascia and mesh groups was 10.2 (0.8-66.1) and 11.5 (0-93.6) months, respectively ($P = 0.63$). No difference was found between groups in the rate of intraoperative, inpatient, or 30-day postoperative complications. Graft related complications were seen in 11% (2/18) fascia lata, 17% (6/35) rectus fascia and 5% (2/42) mesh cases (p = 0.21). All rectus fascia graft-related complications involved the donor site. Subjective bulge, anatomic prolapse, prolapse retreatment and composite surgical failure (13.2% fascia vs. 11.9% mesh, $P = 0.85$) also did not differ. Survival curve (Figure 1) showed no difference in composite surgical failure between autologous fascia and mesh ASC ($P = 0.84$).

Conclusions: ASC using autologous fascia appears successful in treating pelvic organ prolapse as an alternative to synthetic mesh. Patients should be counseled that while this procedure avoids mesh complications, graft/harvest-related complications occur in up to 17%. Larger studies are necessary to evaluate the success and complications of this procedure.

Scientific Salon 49
ASSOCIATION BETWEEN ROUTE OF HYSTERECTOMY AND POSTOPERATIVE OUTCOMES IN WOMEN UNDERGOING ROBOTIC SACROCOLPOPEXY

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Objective: The purpose of this retrospective cohort study is to evaluate whether the route of hysterectomy at the time of robotic-assisted laparoscopic sacrocolpopexy is associated with different anatomic outcomes and risk of perioperative complications.

Methods: All women who underwent a robotic-assisted laparoscopic sacrocolpopexy (RSCP) at our institution from January 2013 to July 2019 were identified from the electronic medical records. Route of hysterectomy was categorized as robotic-assisted supracervical hysterectomy (RSCH), total vaginal hysterectomy (TVH), and post-hysterectomy (PH). We extracted information on patients' demographic characteristics, medical and surgical history, operative details such as concomitant procedures, operative time, types of suture and mesh used, and length of hospital stay, Pelvic Organ Prolapse Quantification (POP-Q) points at follow-up visits, and postoperative complications. Our primary outcome was anatomic failure at 6 months, defined as POP-Q points Aa, Ba, Ap, or Bp >0 or C > -2/3*TVL. Baseline characteristics and outcomes were compared with respect to hysterectomy category using analysis of variance and Chi-square test (or Fisher's exact test when applicable).

Results: We identified a total of 405 patients who underwent RSCP during our study period with a median follow-up of 50.1 weeks. Of these, 203 (50.1%) had a concomitant RSCH, 93 (23.0%) had a concomitant TVH, and 109 (26.9%) were PH at the time of their robotic sacrocolpopexy.

The average age of the patients was 58.2 years (range 32-82 years). They were predominantly white (88.1%), postmenopausal (76.7%) and presented most often with stage 3 prolapse (80.9%). The majority of the patients (72.6%) underwent a midurethral sling procedure (of which 76.8% were retropubic and 23.2% were transobturator), and about a third (35.1%) had a vaginal prolapse repair concomitantly.

Operative time was shorter for the PH group compared to the RSCH and TVH groups (211.3 ± 70.7 vs. 240.1 ± 70.3 vs. 238 ± 59.1 minutes, $P < 0.01$). Length of hospital stay did not differ significantly between groups (mean = 1.1 ± 0.5, 1.2 ± 0.5, and 1.0 ± 0.3 days, $P = 0.12$).

At 6 months after surgery, anatomic failure rates were 9.5% (PH), 11.1% (RSCH), and 5.3% (TVH) and did not differ significantly between groups (p = 0.69). At the most recent follow-up, 41 patients (10.2%) reported symptomatic prolapse recurrence. Of these, 3 (0.7%) were treated with pessary, 17 (4.2%) had repeat POP surgery, and 20 (4.9%) had conservative management. Mesh exposure occurred in 10 patients (2.5%), but only 4 (1.0%) of these were attributed to sacrocolpopexy; the rest were midurethral sling mesh.

Intraoperative and postoperative complication rates were low (bowel obstruction 2.0%, bladder injury 1.2% after excluding those caused by sling trocars, venous thromboembolism 0.7%, transfusion 0.5%). Postoperative urinary tract infection rate was 10.1% and surgical site infection rate was 3%. Readmission within 6 weeks of surgery occurred for 6.2% of patients. None of these outcomes differed significantly between groups.

Conclusions: Patients with different routes of hysterectomy (RSCH or TVH or no hysterectomy) at the time of RSCP have similar anatomic success. Success rates are high and serious complications are rare in all groups.

Disclosures: Christina Swallow: None, Metehan Imamoglu: None, Gizem Imamoglu: None, Xiao Xu: None, Oz Harmanli: None

Scientific Salon 50
VOIDING FUNCTION AFTER SACROCOLPOPEXY VERSUS NATIVE TISSUE TRANSVAGINAL REPAIR FOR APICAL PELVIC ORGAN PROLAPSE REPAIR: A RETROSPECTIVE COHORT STUDY

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Objective: Rates of postoperative incomplete bladder emptying vary significantly after pelvic reconstructive surgery (13-32%). The initiation of the Enhanced Recovery After Surgery (ERAS) protocols has necessitated earlier assessment of voiding function. The objective of this study was to examine for differential rates of successfully passing an active voiding trial comparing minimally-invasive sacrocolpopexy (SCP) versus transvaginal native tissue repair. We hypothesized that SCP would have a lower failure rate of the first postoperative voiding trial and less incidence of postoperative urinary tract-related complications.

Methods: This was retrospective cohort study conducted at a tertiary care center. The electronic medical record system was queried for women who underwent native tissue vaginal repair or SCP for uterovaginal prolapse between March through December 2020 using CPT codes for sacrocolpopexy (57280), extraperitoneal colpopexy (57282), and intraperitoneal colpopexy (57283). Women were excluded if they had: history of urinary retention requiring catheterization, had concomitant colorectal procedures, did not have a concomitant apical suspension, or had an intraoperative complication necessitating a delayed voiding trial. Initial voiding trials were performed on POD 0 or 1 depending on admission status. Voiding success was our primary outcome and was defined by a postvoid residual <150 cc or equivalent clinical documentation of passing. Secondary outcomes included total number of days of catheterization and UTIs. Participants were compared based on the surgical approach.

Results: A total of 134 women were included, (63 SCP versus 71 native tissue). The women in the 2 groups were similar overall, except that the women in the vaginal repair group were older (65.5 ± 12.2 vs. 61.5 ± 8.50, $P = 0.03$) and had a higher Charlson Comorbidity Index (3.00 (1.50-3.00) vs. 2.00 (1.00-2.50), $P = 0.01$). Demographic and surgical data is presented in Table 1. The failure rate of the first postoperative voiding trial was significantly higher in the vaginal repair group (34% vs. 11.1%, $P < 0.01$; Odds ratio: 4.91; 95% CI: 1.96-12.3). Both groups had a similar success rate of a second voiding trial (100% in SCP group vs. 95.7% in the vaginal repair group, p = 1) The total number of days (3.108 days vs. 1.603 days, $P < 0.01$) to return of bladder function and postoperative urinary tract infections were significantly higher in the vaginal repair group (23.9% vs. 6.35%, $P < 0.01$). ED visits within the first 30 postoperative days were also higher in the vaginal repair group (15.5% vs. 1.59%, $P < 0.01$) and were more likely related to urinary tract concerns (6/11(55%) versus 0/1 (0%)).

Conclusions: Vaginal native tissue repair had a fivefold higher risk of acute postoperative urinary retention compared to SCP. Additionally, minimally-invasive sacrocolpopexy had a lower rate of post-operative UTI and post-operative ED visits for urinary tract concerns compared to transvaginal, apical native tissue repair.

Table 1: Demographics and Surgical Characteristics of Cohorts

	Sacrocolpopexy (n=63)	Native Tissue Repair, Vaginal (n=71)	P-Value
Patient Characteristics			
Age	61.46 ± 8.50	65.45 ± 12.19	0.029
Number of delivered children	2.00 (1.00-3.00)	2.00 (1.00-3.00)	0.3736
BMI (kg/m²)	27.18 ± 4.60	28.00 ± 5.52	0.3545
Tobacco Use, current	8 (12.7%)	5 (7.0%)	0.270
Diabetes Mellitus	12 (19.0%)	15 (21.1%)	0.765
Charlson Comorbidity Index	2.00 (1.00-2.50)	3.00 (1.50-3.00)	0.006
Preoperative Recurrent UTIs	9 (14.3%)	7 (9.86%)	0.430
Prior Surgical History			
Any prior abdominal or pelvic surgery	55 (87.3%)	56 (78.9%)	0.197
Stress incontinence procedure	8 (12.7%)	8 (11.3%)	0.799
Findings at Pelvic Exam			
Preoperative prolapse stage (I-IV)	3.00 (2.00-3.00)	3.00 (2.00-3.00)	0.652
Preoperative stress urinary incontinence	31 (49.2%)	32 (45.1%)	0.409
Preoperative PVR	67.03 ± 84.33	65.98 ± 77.33	0.941
Preoperative urge urinary incontinence	27 (42.9%)	24 (33.8%)	0.281
Operative duration (min)	217.32 ± 67.44	122.35 ± 48.89	<0.01
Blood loss (ml)	92.25 61.27	92.58 65.97	0.951
Anterior repair	0 (0%)	41 (57.7%)	<0.01
Posterior repair	43 (68.3%)	50 (70.4%)	0.786
Uterosacral ligament suspension	0 (0%)	32 (45.1%)	<0.01
Sacrospinous ligament suspension	0 (0%)	39 (54.9%)	<0.01
Hysterectomy performed	22 (34.9%)	30 (42.3%)	0.385
Stress incontinence procedure performed	29 (46.0%)	29 (40.8%)	0.545
Length of stay (days)	1.48 ±0.50	1.13 ±0.63	<0.01
Persistent PVR> 150 cc greater than 4 weeks	1 (1.59%)	2 (2.82%)	0.631

Disclosures: Amr El Haraki: None, Jersey Burns: None, Christopher Crafton: None, Candace Parker-Autry: None, Catherine Matthews: None

Scientific Salon 51
ASSOCIATION BETWEEN GENITAL HIATUS SIZE AND COMPOSITE SURGICAL FAILURE: SECONDARY ANALYSIS OF THE SUPER TRIAL

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Objective: Our objective was to evaluate the association between pre- and post-operative GH size and recurrent prolapse among SUPeR (Study of Uterine Prolapse Procedures Randomized) trial participants that underwent native tissue apical suspension.

Methods: Subjects were divided into three categories based on the change in their preoperative to 4-6 week postoperative genital hiatus (GH) measured with strain on the pelvic organ quantification (POPQ) score. A GH of ≥4 cm was considered enlarged and categories included: 1) persistently enlarged GH, 2) improved GH defined as an improvement in GH from enlarged to normal, or 3) stably normal GH. Primary outcome was composite surgical failure at two years defined as recurrent prolapse in any compartment beyond the hymen, bothersome vaginal bulge symptoms, or retreatment for prolapse (surgery or pessary). Baseline characteristics and 2-year outcomes were compared across categories and a logistic regression model for composite surgical failure controlling for advanced anterior wall prolapse and GH category was completed.

Results: This secondary analysis included 81 women who were primarily white (86%), with a median age of 65.6 years (P25, P75: 61.3, 71.4). There were differences in baseline characteristics across GH categories including age ($P = 0.03$) and baseline POPQ Ba measure ($P < 0.01$). Subjects in both the Improved and Persistently Enlarged categories had similar proportions of concomitant posterior repair/perineorrhaphy [94% v. 86%, risk difference -8 (95% CI -37, 8)]. The proportion with composite surgical failure was significantly higher among those with a persistently enlarged GH

(50%) compared to those with a stably normal GH (12%) with unadjusted risk difference of 38% (95% CI: 4% to 68%). There was a higher percentage with recurrent prolapse beyond the hymen in the anterior compartment in the persistently enlarged GH (36%) compared to those with a stably normal GH (0%) with risk difference of 36% (95% CI: 10% to 65%). (Table 1) There was no significant difference in bothersome vaginal bulge symptoms ($P = 0.75$) or retreatment for prolapse ($P = 0.51$) across the GH categories. When adjusting for advanced prolapse in the anterior compartment at baseline, the odds of composite surgical failure in the persistently enlarged GH category compared to the stably normal category did not meet statistical significance (aOR 6.0, 95% CI 1.0-37.5; $P = 0.06$).

Conclusions: When compared to those with a normal GH size prior to and after native tissue apical suspension, those with a persistently enlarged GH size had higher proportions of composite surgical failure and prolapse recurrence in the anterior vaginal compartment 2 years after surgery.

Table 1. Unadjusted Analyses of 24-Month Outcomes by Genital Hiatus Category based on Change from Preoperative Genital Hiatus (strain) to Postoperative 4-6 Week Genital Hiatus (strain)

		Genital Hiatus Category			Pairwise Risk Difference/Location Shift (95% CI) *			
Characteristics	Total (N=81)	Persistently Enlarged (N=14)	Improved (N=50)	Stably Normal (N=17)	Persistently Enlarged vs. Stably Normal	Improved vs. Stably Normal	Persistently Enlarged vs. Improved	p-value *
Composite surgical failure	20/81 (25)	7/14 (50)	11/50 (22)	2/17 (12)	38 (4 to 68)	10 (-15 to 28)	28 (-2 to 56)	0.05
Anatomic outcomes								
Pelvic Organ Prolapse Quantification (POPQ) Measurements								
GH (at strain)	3.0 (3.0, 4.0)	4.0 (4.0, 5.0)	3.0 (3.0, 4.0)	3.0 (2.5, 3.0)	1.5 (1.0 to 2.0)	0.5 (0.0 to 1.0)	1.0 (0.5 to 1.5)	<0.001
TVL	8.0 (7.0, 8.5)	8.0 (8.0, 9.0)	8.0 (7.0, 9.0)	7.0 (6.5, 8.0)	1.0 (0.0 to 2.0)	1.0 (0.0 to 1.0)	0.5 (0.0 to 1.0)	0.02
C	-6.0 (-7.0, -5.0)	-5.3 (-7.0, -4.0)	-6.0 (-7.0, -5.0)	-6.0 (-7.0, -5.0)	1.0 (0.0 to 2.0)	0.0 (-0.5 to 1.0)	0.5 (-0.5 to 1.5)	0.35
Ba	-1.0 (-2.5, 0.0)	-0.8 (-1.0, 1.0)	-1.0 (-2.0, 0.0)	-2.0 (-2.0, -1.0)	1.0 (0.5 to 2.5)	0.5 (0.0 to 1.0)	1.0 (0.0 to 2.0)	0.04
Bp	-2.0 (-3.0, -1.0)	-2.3 (-3.0, -1.0)	-2.0 (-3.0, -1.0)	-2.5 (-3.0, -1.5)	0.0 (0.0 to 1.0)	0.0 (0.0 to 1.0)	0.0 (-0.5 to 0.5)	0.48
Pelvic Organ Prolapse (POP) Beyond the Hymen								
Any compartment	11/80 (14)	5/14 (36)	6/49 (12)	0/17 (0)	36 (10 to 65)	12 (-10 to 25)	23 (-2 to 52)	0.02
Apical	0/80 (0)	0/14 (0)	0/49 (0)	0/17 (0)				
Anterior	10/80 (13)	5/14 (36)	5/49 (10)	0/17 (0)	36 (10 to 65)	10 (-11 to 23)	26 (0 to 54)	0.01
Posterior	1/80 (1)	0/14 (0)	1/49 (2)	0/17 (0)		2 (-19 to 12)	-2 (-12 to 22)	>0.99
Subjective outcomes								
Bothersome vaginal bulge symptoms *	8/80 (10)	2/13 (15)	5/50 (10)	1/17 (6)	10 (-16 to 40)	4 (-20 to 18)	5 (-13 to 35)	0.75
Patient Global Impression of Improvement (PGI-I) of much better or very much better	72/80 (90)	13/13 (100)	44/50 (88)	15/17 (88)	12 (-15 to 36)	0 (-16 to 25)	12 (-15 to 25)	0.57
Dyspareunia *	4/72 (6)	1/13 (8)	2/43 (5)	1/16 (6)	1 (-24 to 30)	-2 (-27 to 12)	3 (-11 to 32)	0.81
Retreatment for prolapse (surgery or pessary)	6/81 (7)	2/14 (14)	3/50 (6)	1/17 (6)	8 (-17 to 37)	0 (-23 to 13)	8 (-8 to 37)	0.51

Data are median (P25, P75) for continuous measures and n/N (%) for categorical measures unless otherwise specified; CI=Confidence interval, P25=25th Percentile, P75=75th Percentile

* For categorical measures, the p-values were obtained from Fishers exact test and exact pairwise risk difference and 95% CI limits were obtained by exact methods based on the score statistic. For continuous measures p-values were obtained using Kruskal-Wallis test and pairwise location shift and 95% confidence intervals were obtained using Wilcoxon Rank-Sum test with a Hodges-Lehmann estimation of location shift. All tests were conducted at a significance level of 0.05 and no adjustments for multiple comparisons were made.

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Scientific Salon 52
COMPLICATIONS OF MESH IMPLANTATION FOR THE TREATMENT OF PELVIC ORGAN PROLAPSE

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Objective: To describe the incidence, long-term outcomes, and treatment of mesh-related postsurgical complications following mesh implantation for the treatment of pelvic organ prolapse (POP).

Methods: We conducted a case-control study of women who underwent mesh-augmented pelvic reconstructive surgery for the indication of POP who had a mesh complication to those who did not within a large integrated healthcare delivery system serving 4.38 million people. Following IRB exemption, we identified women who had mesh-augmented pelvic surgery between January 1, 2008 and December 31, 2014 via query of electronic databases by utilizing ICD-9, ICD-10 and CPT codes for prolapse procedures. Mesh complications diagnosed between January 2008 and March 2020 were identified via ICD-9, ICD-10 codes for eroded or exposed vaginal mesh, or a CPT code for vaginal mesh removal and corroborated by chart review. Descriptive statistics were employed to characterize the group with mesh complications vs no complications. Multivariate conditional logistic regression was utilized to identify factors associated with mesh complications.

Results: We identified 1392 women who were implanted with mesh for the treatment of POP. The study group was racially and ethnically diverse, with a mean age of 63.4 (±12.5). The average duration of follow-up was 76.4 months (±34.5). The majority of implants (n = 1230, 88.4%) underwent sacrocolpopexy, with the remaining 162 women (11.6%) implanted with transvaginal mesh; 85.5% of women had a concomitant midurethral sling. Overall, 59 (4.2%) were identified as having a mesh complication, with the majority being mesh exposure (72.9%). In bivariate analysis, the only statistically significant risk factor for mesh complication was race (p = 0.03), however this did not remain significant when controlling for other risk factors on logistic regression analysis.

Most complications (59%) required more than one treatment modality, which included vaginal estrogen, trigger point injections, and/or surgical treatment (Table 1). Surgical treatment was required in 33 cases (56%), with seven (11.9%) requiring more than one surgery to address the mesh complication.

Conclusions: The rate of mesh complications in a large diverse cohort of women with history of mesh implantation for the treatment of POP is 4.2%, which is lower than rates reported in prior studies despite our long duration of follow-up. Mesh complications were not associated with any clinical or demographic factors identified by our study, including age, BMI, estrogen or tobacco use, comorbidities, or time elapsed from index surgery. Of those with mesh complications, the majority require more than one treatment modality, with about one in ten women requiring more than one surgery related to mesh complications.

Table 1. Treatment of Mesh Complications

	Total=59 N (%)
Treatment Medical	
Vaginal estrogen	24 (40.7)
Trigger point injection	18 (4.8)
>1 Treatment	24 (59)
Observation only	6 (10.2)
Surgical Management	33 (56)
Local excision	31 (52.5)
Complete mesh excision	4 (6.8)
>1 Surgery	7 (11.9)

Disclosures: Caitlyn Painter: None, Navendu Samant: None, Olga Ramm: None

Scientific Salon 53
MESH COMPLICATIONS AFTER TOTAL VS SUPRACERVICAL LAPAROSCOPIC HYSTERECTOMY AT TIME OF MINIMALLY INVASIVE SACROCOLPOPEXY: DOES LEAVING THE CERVIX PROTECT AGAINST MESH EXPOSURE?

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Objective: To compare short-term mesh exposure rates after total (TLH) vs supracervical (SLH) laparoscopic hysterectomy at time of minimally invasive sacrocolpopexy (SCP). Secondary outcomes included 30-day complications and midurethral mesh exposure rates.

Methods: This a retrospective study comparing mesh exposure rates in patients undergoing TLH or SLH with SCP at a tertiary care referral center from 2011 to 2018. Subjects were identified using Current Procedural Terminology codes for TLH, SLH, and SCP. Patient demographics, operative characteristics, and perioperative complications were abstracted from medical records. Primary outcomes were SCP mesh exposure at 4 months and 1 year postoperatively. Group comparisons were performed using student's t-test, chi square Fisher's exact test, and Mann Whitney tests as appropriate. A p value of <.05 was considered significant.

Results: 403 women met inclusion criteria; 91 SH + SCP and 312 TLH + SCP. No clinically significant differences in demographic characteristics were noted between groups. Median follow-up was 52 weeks (interquartile range 17-52 weeks) with an overall mesh exposure rate of 1.5%. Follow up was available for 90% of patients at 4 months and 51% at 1 year. Half of patients had Upsylon mesh (n = 203), while the other half had Restorelle mesh (n = 200). Vaginal mesh fixation was done with Gortex (permanent) suture in 86% (n = 344) and with PDS or Maxon (delayed absorbable) suture in 14% (n = 56) of patients. At 4 months, apical mesh exposure rates did not differ between groups (0% SH vs 1% TLH, p = 1.00). All 3 mesh exposures were after TLH with Upyslon mesh; 1 exposure used permanent suture for vaginal fixation and 2 used delayed absorbable suture for vaginal fixation. Two exposures were successfully managed with partial vaginal excision of mesh and one was managed with vaginal estrogen. At 1 year, one additional mesh exposure was noted in the TLH arm with Upsylon mesh and delayed absorbable suture, which was managed with vaginal excision. Two additional mesh exposures were noted on longer-term follow up; both after TLH with Upsylon mesh. There were no exposures in patients with Restorelle mesh. Mean follow up did not differ by mesh type. No differences were noted in 30-day perioperative complications (p = .57), midurethral sling mesh exposure rates at 4 months (p = .35), and midurethral sling mesh exposure rates at 1 year (p = 1.00) between groups.

Conclusions: Short term mesh exposure following SCP with ultralight weight polypropylene mesh is rare regardless of type of hysterectomy and much lower than reported in earlier studies with heavier weight mesh. These data suggest TLH at the time of SCP is a safe option in appropriately counseled patients.

Figure 1: Mesh and Perioperative Complication Rates with Concomitant Supracervical Hysterectomy vs Total Laparoscopic Hysterectomy with Sacrocolpopexy

	Supracervical Hysterectomy N=91	Total Hysterectomy N=312	p value
Mesh exposure at 4 months			
Sacrocolpopexy	0 (0)	3 (1)	1.00[a]
Sling	0 (0)	6 (2)	.35[a]
Mesh exposure at 1 year			
Sacrocolpopexy	0 (0)	1 (0)	1.00[a]
Sling	0 (0)	3 (1)	1.00[a]
Mesh exposure on any follow up*			
Sacrocolpopexy	0 (0)	6 (2)	.35[a]
Sling	1 (1)	8 (3)	.69[a]
Readmission (30 day)	8 (9)	12 (4)	.09[a]
Reoperation (30 day)	0 (0)	4 (1)	.58[a]
Any complications (30 day)	22 (24)	66 (21)	.57[a]
Any major complications (30 day)	9 (10)	24 (8)	.52[a]
Any minor complications (30 day)	14 (15)	46 (15)	.87[a]
Mesh type			<.001[a]
Upsylon	30 (33)	173 (55)	
Restorelle	61 (67)	139 (44)	
Suture fixation to vagina			<.001[a]
Delayed absorbable	3 (3)	53 (17)	
Permanent	87 (97)	257 (83)	

Reported as N (column %)
a= chi square Fisher's exact test
*Follow up was recorded until last patient follow up and included follow up beyond 1 year

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Scientific Salon 54
IMPACT OF INTRAOPERATIVE GENITAL HIATUS SIZE ON PELVIC ORGAN PROLAPSE RECURRENCE

O. Chang[1], M. Yao[2], C. Ferrando[2], M. Fidela Paraiso[2], K. Propst[2]. *University of Washington[1], Cleveland Clinic[2]*

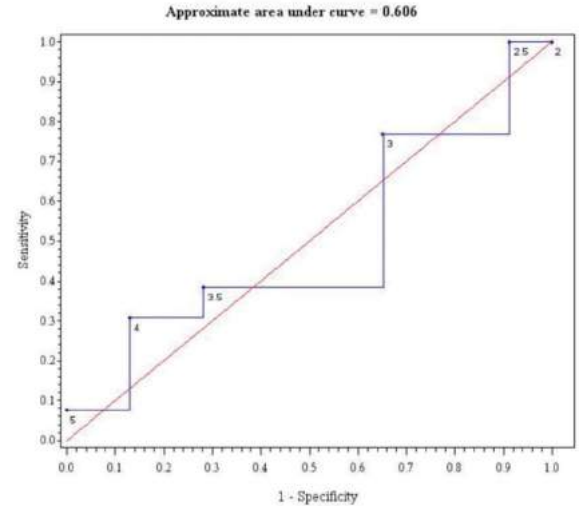
Objective: The primary objective of this study was to identify the optimal intraoperative resting genital hiatus as it relates to prolapse recurrence and functional outcomes at 1 year.

Methods: This is a prospective cohort study of 68 women who underwent vaginal pelvic organ prolapse surgery with apical suspension. At the time of surgery, standardized intraoperative measurements of the resting genital hiatus (GH), perineal body (PB) and total vaginal length (TVL) were collected at the beginning and end of surgery. All patients returned at 12 months for a physical exam and completed validated questionnaires on prolapse and sexual function (Pelvic Organ Prolapse Distress Inventory [POPDI-6], Pelvic Organ Prolapse/ Urinary Incontinence Sexual Questionnaire [PISQ-IR]). The primary outcome was a composite of anatomic failure (Ba or Bp at or beyond hymen, C point that is 1/3 of TVL), subjective failure (positive response to POPDI-3 "Do you usually have a bulge or something falling out that you can see or feel in your vaginal area?"), and/or conservative or surgical retreatment. If any of these criteria were met, the patient was categorized as a failed prolapse repair. Power analysis indicated that 56 patients would be required for this study.

Results: 68 women were enrolled in the study from 10/2019-02/2020. At 1 year, 59 (86.8%) women with a median age of 66 years (range 54-72) returned for follow-up. The majority of patients were white (91.5%) and postmenopausal (79.7%). Thirteen patients (22%) had composite failure at 1 year; 13 patients (22%) with anatomic failure and 2 patients (3.4%) with subjective failure. There were no retreatments. A receiver-operating characteristic (ROC) curve demonstrated a GH size of 3 cm had 76.9% sensitivity (54-99.8%) for composite failure at 1 year (AUC = 0.61, Figure 1). At 3 cm, the negative predictive value was 84.2% (67.8-100%). When patients were stratified based on the final intraoperative resting genital hiatus size of 3 cm, the rates of composite failure were 15.8% (n = 3) for those with GH < 3 cm versus 25.0% (n = 10) for those with GH3cm ($P = 0.52$). There were no differences in PISQ-IR scores between the two groups. 89.5% of patients (n = 17) had a concurrent posterior colporrhaphy to achieve a genital hiatus size of <3 cm.

Conclusions: In this prospective cohort study, a GH size of 3 cm had high negative predictive value, which means that few patients with a GH < 3 cm developed composite prolapse failure at 1 year. To achieve a GH size of <3 cm, most patients had a concurrent posterior colporrhaphy.

Figure 1. Receiver Operating Characteristic Curve evaluating validity of final intraoperative resting genital hiatus size and composite failure at 1 year



Disclosures: Olivia Chang: None, Meng Yao: None, Cecile Ferrando: UpToDate: Authorship: Self , Marie Fidela Paraiso: None, Katie Propst: None

Scientific Salon 55
VAGINAL HYSTERECTOMY PERFORMED UNDER GENERAL ANESTHESIA VERSUS NEURAXIAL REGIONAL ANESTHESIA: COMPARISON OF PATIENT CHARACTERISTICS AND 30-DAY OUTCOMES USING THE NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE

C. Hong[1], E. Kim[1], A. Cardi[1], H. Harvie[2]. *University of Pennsylvania[1], PSOM[2]*

Objective: Although general anesthesia (GA) is commonly used for vaginal hysterectomies, neuraxial regional anesthesia (RA) may be associated with clinical and cost-saving benefits in certain populations. Our aim was to compare pre- and intra-operative characteristics and 30-day outcomes for patients undergoing elective vaginal hysterectomy for benign indications under GA versus RA.

Methods: This is a retrospective cohort study of patients who underwent vaginal hysterectomy for benign indications between 2015-2019 in the American College of Surgeons' National Surgical Quality Improvement Program database. Patients were identified using Current Procedural Terminology (CPT) codes and stratified into GA and RA groups (RA included spinal, epidural, and unspecified regional anesthesia). Major complications included deep/ organ surgical site infection, sepsis and septic shock, pneumonia, renal failure, myocardial infarction, thromboembolism, and unplanned readmission or reoperation. Minor complications included superficial surgical site infection, urinary tract infection, and blood transfusion. Multivariable logistic regression was used to assess characteristics associated with postoperative complications. Propensity score matching was used to compared major, minor, and overall postoperative complication rates.

Results: Of 17,743 vaginal hysterectomies performed during this study period, 17,014 (96.9%) used GA and 546 (3.1%) used RA. Preoperative and intraoperative characteristics are presented in Table 1; patients in the RA group were older, more likely to be white race, and more likely to have COPD compared to the GA group. Compared to surgery under GA, surgery under RA was associated with higher rates of hospital admission (60.6% vs 38.5%, $P < 0.001$) and higher rates of hospital stay beyond postoperative day 1 (31.0% vs 16.1%, $P < 0.001$). There were similar rates of major, minor, and overall complications between RA and GA groups (major: OR 1.11, 95% CI 0.71-1.74; minor: 1.05, 0.76-1.47; overall: OR 1.12, 95% CI 0.85-1.49). Propensity score analysis

matched patients in a 1:1 ratio between RA and GA. In the matched cohort, there were similar rates of major, minor, and overall complications between RA and GA groups (major: OR 1.56, 95% CI 0.76-3.17; minor: OR 1.05, 95% CI 0.66-1.69; overall: OR 1.25, 95% CI 0.83-1.89).

Conclusions: Vaginal hysterectomy under regional anesthesia is uncommon, comprising 3% of all vaginal hysterectomies performed in this large national cohort. After propensity-score matching, postoperative complications following vaginal hysterectomy performed under regional anesthesia are similar to those performed under general anesthesia. For carefully selected patients, vaginal hysterectomy under regional anesthesia may be feasible and beneficial.

Table 1. Preoperative and intraoperative characteristics

	General anesthesia (n=17014)	Neuraxial regional anesthesia (n=546)	p-value
Age, yrs	52 (43-65)	62 (46-72)	**<0.001**
Parous	15505 (91.1)	491 (89.9)	0.331
BMI, kg/m²	28.3 (24.9-32.9)	27 (24.0-30.5)	**<0.001**
Race			**<0.001**
White	10395 (70.1)	242 (87.7)	
Black	1720 (11.6)	11 (4.0)	
Hispanic	1934 (13.1)	14 (5.1)	
Asian/other*	774 (5.2)	9 (3.3)	
Unknown	2191	270	
ASA class			**0.002**
1	1641 (9.6)	79 (14.5)	
2	11436 (67.2)	343 (62.8)	
3	3843 (22.6)	119 (21.8)	
4	83 (0.5)	5 (0.9)	
Missing	11 (0.1)	0 (0)	
Preoperative hematocrit	39.5 ± 3.8	40.5 ± 3.5	**<0.001**
Missing	1568	32	
Prior pelvic surgery	8164 (48.0)	233 (42.7)	**0.014**
Prior abdominal surgery	4643 (27.3)	158 (28.9)	0.395
Endometriosis	742 (4.4)	19 (3.5)	0.320
Smoking	2162 (12.7)	45 (8.2)	**0.002**
Diabetes	1589 (9.3)	48 (8.8)	0.665
COPD	181 (1.1)	13 (2.4)	**0.004**
Hypertension	5395 (31.7)	177 (32.4)	0.726
Congestive heart failure	12 (0.1)	0 (0)	0.535
Dialysis	13 (0.1)	0 (0)	0.518
Chronic steroid use	310 (1.8)	18 (3.3)	**0.012**
Bleeding disorder	86 (0.5)	2 (0.4)	0.650
Gynecology subspecialty			**<0.001**
General obstetrics/gynecology	11653 (68.5)	432 (79.1)	
Urogynecology	4791 (28.2)	102 (18.7)	
Other subspecialty†	570 (3.4)	12 (2.2)	
Operative time, min	119 [85-165]	90 [63-121]	**<0.001**
Uterine weight, g	85 [51.5-132]	64.5 [45-104.5]	**<0.001**
Unknown	588	38	

*Includes Hawaiian/Pacific Islander and American Indian
†Includes gynecological oncology, reproductive endocrinology and infertility, maternal fetal medicine, and other
BMI = body mass index; ASA = American Society of Anesthesiology; COPD = chronic obstructive pulmonary disease
Continuous characteristics are reported as mean ± standard deviation or median (interquartile range). Categorical characteristics are reported as count (%).

Disclosures: Christopher Hong: Cosm Medical: Consultant: Self , Edward Kim: None, Alessandra Cardi: None, Heidi Harvie: None

Scientific Salon 56
COMPARISON OF PERIOPERATIVE OUTCOMES AND REOPERATION RATES FOR SAME DAY VERSUS NEXT DAY DISCHARGE AFTER VAGINAL HYSTERECTOMY USING A NATIONAL SURGICAL DATABASE

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Objective: More robust national data for same day discharge after vaginal hysterectomy is needed. We aim to evaluate perioperative outcomes and reoperation rates after same day discharge (SDD) versus next day discharge (NDD) after vaginal hysterectomy in a low-risk surgical cohort using a national surgical database.

Methods: This is a retrospective cohort study of the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database for years 2012-2019. Cases of vaginal hysterectomy with or without adnexal surgery or prolapse repair were identified by CPT codes. Exclusion criteria include hospital stay >1 day, unrelated concurrent procedures, laparotomy or laparoscopy, serious medical comorbidities (i.e. insulin dependent diabetes, heart disease, dialysis, etc.), American Society of Anesthesiologists (ASA) Class >2, any composite complication during surgical admission, duplicate coding or key missing data. Demographic and clinical variables were abstracted. The primary outcome was a comparison of 30-day composite complications (death, major infection or wound complication, thromboembolism, transfusion, cardiopulmonary complication, renal insufficiency or failure or stroke) between SDD and NDD. Secondary outcomes included comparison of reoperation and individual complication rates and reasons for reoperation between SDD and NDD. Unadjusted and adjusted odds ratios were determined using univariate and multivariate analysis for the primary outcome.

Results: 24,277 women were included and 4,073 (16.8%) were discharged same day. Compared to NDD, the SDD cohort was younger (48.2 ± 11.3 vs 50.8 ± 12.8 years, $P < 0.0001$). There was no difference in mean body mass index (BMI) (28.7 ± 5.9 kg/m^2), smoking history (14.3%) or ASA class 2 (86.2%) between SDD and NDD. NDD had more cases of hypertension on medication (23.4 vs 18.3%, $P < .0001$) and diabetes without insulin use (4.5 vs 3.3%, p = .001). The majority of cases (95.1%) had general anesthesia but when spinal or regional anesthesia was used this was more common in NDD (2.5% vs 4.4%, p < .0001). NDD had longer operative times (100.7 ± 47.5 vs 111.2 ± 57.5 minutes, $P < .0001$) and more concurrent prolapse (24.1 vs 41.6%, p < .0001) and incontinence procedures (10.7 vs 17.5%, $P < .0001$). SDD had more adnexectomy (63.5 vs 47.2%, p < .0001), uterine weight > 250 grams (7.7 vs 5.3%, $P < .0001$) and cystoscopy (29.6 vs 18.8%, $P < .0001$). There was no difference in composite complication rates between SDD and NDD (2.0 vs 2.3%, OR 0.9, 95% CI 0.7-1.1, $P = 0.3$). This remained true after adjusting for race, age, obesity (BMI >/= 30 kg/m^2), smoking, operative time > 180 minutes and sling procedure (aOR 0.9, 95% CI 0.7-1.1). There was no difference in the types of complications between SDD and NDD except that transfusion was more common in SDD (0.12 vs 0.03%, $P = .04$). The rate of reoperation did not differ between SDD and NDD (0.9%, $P = 0.94$). The most common reasons for reoperation were bleeding complications, urinary retention and infection.

Conclusions: In this low-risk surgical cohort, SDD does not increase the odds of the composite complication outcome when compared to NDD. While there is a statistically significant increased rate of transfusion for SDD compared to NDD, it is still very low at <0.5%. Reoperation rates and other complication rates were not different, but our study may be under-powered for these outcomes. We believe this supports the safety of SDD after vaginal hysterectomy in select patients.

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Scientific Salon 57
IS PREOPERATIVE TYPE AND SCREEN HIGH-VALUE CARE? A COST-EFFECTIVENESS ANALYSIS OF PERFORMING PREOPERATIVE TYPE AND SCREEN PRIOR TO UROGYNECOLOGIC SURGERY

K. Husk[1], R. Wang[2], R. Rogers[1], H. Harvie[3]. *Albany Medical Center[1], Hartford Hospital[2], PSOM[3]*

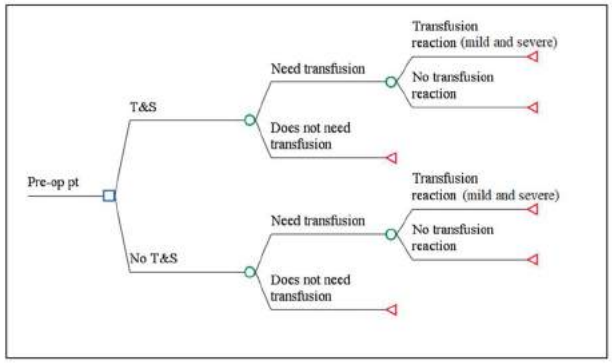
Objective: Routine preoperative type and screen (T&S) is often ordered prior to urogynecologic surgery but rarely used. We aimed to assess the cost-effectiveness of routine preoperative T&S and to determine transfusion rates and transfusion reaction rates that make universal preoperative T&S cost-effective.

Methods: A decision tree model (Figure 1) from the healthcare sector perspective compared costs (2020 U.S. dollars) and effectiveness (quality-adjusted life-years, QALY) of universal preoperative T&S (cross-matched blood) vs no T&S (O negative blood). Our primary outcome was the incremental cost-effectiveness ratio (ICER). Input parameters included transfusion rates, transfusion reaction incidences with cross-matched vs O negative blood, transfusion reaction severity rates, and costs associated with transfusion reaction management. From the literature, the base case included a transfusion probability of 1.26%, transfusion reaction probability of 0.0013% with or 0.4% without T&S, and a 50% probability of inpatient management and 0.0042 annual disutility associated with a transfusion reaction. Costs were estimated from Medicare national reimbursement schedule. Time horizon was surgery/admission. We assumed a maximum willingness-to-pay (WTP) of $150,000/QALY. One-way and two-way sensitivity analyses were performed.

Results: The base case analysis and one-way sensitivity analyses (Figure 2) demonstrate that routine preoperative T&S is not cost effective, with an ICER of $63,721,632/QALY. The optimal strategy did not change when base case costs, probability of transfusion, or transfusion reaction disutility were varied over full ranges. Threshold analysis revealed that if the probability of transfusion reaction without T&S is >12%, approximately 300 times higher than reported rates, routine T&S becomes cost-effective. Two-way sensitivity analyses indicated scenarios where T&S is cost-effective, however the scenarios fell outside typical reported rates for urogynecologic surgery.

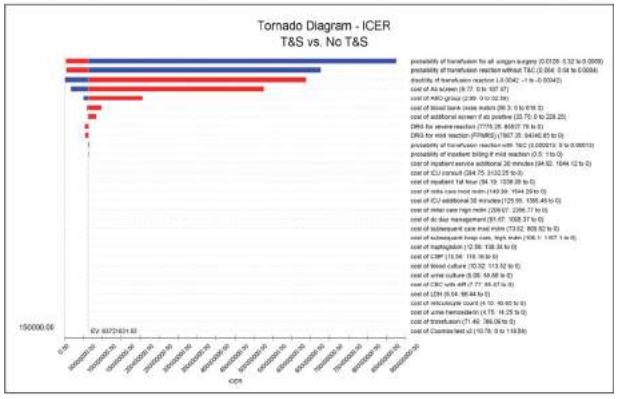
Conclusions: Within broad ranges, preoperative T&S is not cost-effective. Our results support re-evaluating routine T&S prior to urogynecologic surgery.

Figure 1: Decision Tree Model



Decision tree model used for analysis to evaluate cost-effectiveness of performing preoperative type and screen (T&S)

Figure 2: One-Way Sensitivity Analysis



One-way sensitivity analysis using the base case incremental cost-effectiveness ratio (ICER) with no type and screen (T&S) as a reference strategy. Probabilities, costs, and disutility rates are presented across the ranges shown. Costs were varied from $0 to 10 times the base case. The input parameters are listed in descending order based on their degree of impact on the ICER when comparing T&S versus no T&S, with higher (red) and lower (blue) range values centered on the base case of $63,721,632/QALY. For all parameters, varying each individual input parameter did not result in the ICER crossing the WTP threshold of $150,000/QALY.

Disclosures: Katherine Husk: None, Rui Wang: None, Rebecca Rogers: Uptodate: Writer: Self, IUGA: Editor in Chief: Self, ABOG: Member subspeciality section: Self , Heidi Harvie: None

Scientific Salon 58
A MODEL TO PREDICT SURGICAL SITE INFECTION WITHIN 90 DAYS FOLLOWING PELVIC ORGAN PROLAPSE SURGERY

D. Sheyn[1], W. Gregory[2], O. Osazuwa-Peters[3], J. Jelovsek[4]. *University Hospitals[1], Oregon Health & Science University[2], Duke University School of Medicine, DPHS[3], Duke University[4]*

Objective: To develop a model for predicting risk of surgical site infection (SSI) after pelvic organ prolapse (POP) surgery.

Methods: Women who underwent surgery for POP between 2011-2017 were identified using CPT codes from the 2010-2018 Centers for Medicare Services (CMS) 5% Limited Data Set, which reflects a 5% random sample of all CMS patients. Women who had continuous enrollment in CMS one year prior to and 90 days following surgery were included. The primary outcome was occurrence of an SSI within 90 days of POP surgery with a synthetic or biologic graft including a sling or 30 days without any synthetic material identified using ICD-9-CM and ICD-10-CM procedure and diagnostic codes. Patient characteristics, co-morbidities, and perioperative information were also extracted. Forty-one variables were selected a priori to be considered as predictors of SSI. Generalized linear regression models using a logit link (LR) were used to fit a: full specified model that contained all variables, backward elimination LR model, and an approximated penalized model with 10 predictors limited based on feasibility of entry during routine clinical care. Age was modeled using restrictive cubic splines. Each model's accuracy was measured using the concordance index (c-statistic) and Brier scores, and calibration curves allowed assessment the relationship between the model's predicted outcomes against the cohort's observed outcome across the range of predictions. All c-statistics and calibration curves were internally validated using bootstrap samples to correct for bias and over-fitting.

Results: A total of 12,334 women were included in the analysis and 588 (4.7%) had a SSI. The final model included: age and the presence of hemi- or paraplegia, peripheral vascular disease, diabetes with complications, COPD, use of vaginal grafts, abdominal sacrocolpopexy, sling, blood transfusion, and GI tract injury. Increasing age was associated with less risk of SSI, while the remaining predictors increased risk, with the strongest being GI tract injury, blood transfusion, paraplegia and abdominal sacrocolpopexy. The penalized LR model (10 predictors, c-stat (95%CI): 0.603 (0.580, 0.626) & Brier Score: 0.045) and backward elimination LR model (12 predictors, c-stat: 0.605 (0.584, 0.629) & Brier Score = 0.045) had the highest discrimination ability. Since the penalized LR model had the best calibration when predicting risk of SSI between 0 and 30% (Figure 1) and the fewest predictors, it was chosen as the final model. The median increase in post-discharge cost for women experiencing SSI was $1,446 (IQR: 859-3,309), $P < 0.001$.

Conclusions: This model may provide individual estimates of probability of SSI within 90 days after surgery for pelvic organ prolapse (POP). If the model's performance can be replicated in a prospective clinical setting, it could potentially be used to identify high risk individuals in whom targeted infection prevention intervention may lead to reductions in morbidity and economic burden related to SSI.

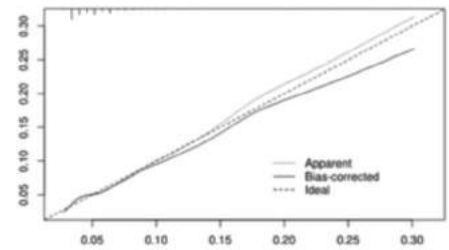


Figure 1: Calibration Curve for the Penalized Logistic Regression Model Predicting Surgical Site Infection after Surgery for Pelvic Organ Prolapse

Disclosures: David Sheyn: Renalis: Principal Investigator: Self , W Gregory: None, Oyomoare Osazuwa-Peters: None, John Jelovsek: NIDDK LURN Research Network: Grant/Research Support: Self, UpToDate: Other Financial or Material Support: Self

Scientific Salon 59
COMPARISON OF TRANSURETHRAL CATHETER TO SUPRAPUBIC CATHETER FOR MANAGEMENT OF POSTOPERATIVE TRANSIENT URINARY RETENTION FOLLOWING COLPOCLEISIS

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Objective: To compare length of catheterization and postoperative complications between two strategies of postoperative catheter management following colpocleisis: transurethral catheterization (TUC) and planned suprapubic catheter placement (SPC).

Methods: All women undergoing colpocleisis by a high volume Female Pelvic Medicine and Reconstructive Surgery group from January 2015 to December 2019 were identified by procedure codes for colpocleisis, colpectomy, or LeFort. The type of colpocleisis and any concomitant procedures performed, including planned placement of SPC, were determined based on surgeon preference and practice patterns. Exclusion criteria included patients who did not have SPC placement at the time of surgery and who passed their postoperative day one active voiding trial. Additional exclusions included intraoperative or postoperative complications requiring prolonged catheter use or presence of an indwelling catheter or intermittent self-catheterization prior to surgery. Length of catheterization and risk for urinary tract infection in women who had planned placement of SPC at the time of surgery were compared to women

without planned SPC who failed the active voiding trial on postoperative day one and were discharged home with TUC.

Results: A total of 258 patients underwent colpocleisis during the study time frame. Eighty-eight women met exclusion criteria, leaving 170 subjects for the analysis with 92 receiving TUC placement and 78 receiving concomitant SPC placement. Length of catheterization was significantly different between the two groups with subjects undergoing SPC placement having a median number of catheter days of 11 (95% CI, 10-14 days) vs 7 days for TUC (95% CI 6-7 days, $P < 0.001$). This difference persisted following adjustment for demographic variables (HR = 2.61, 95% CI 1.85-3.68). Subjects undergoing planned SPC placement had higher rates of both overall complications as well as urinary tract infections (overall complications 65.4% vs 58.7%, adjusted OR 1.32; CI 0.67, 2.58 and UTI 52.6% vs 42.4%, adjusted OR 1.62; CI 0.83, 3.15). However, these findings were not statistically significant either before or after adjusting for possible confounders.

Conclusions: Placement of SPC at the time of colpocleisis increases the length of catheterization postoperatively over placement of TUC for management of postoperative urinary retention without any difference in complications or urinary tract infections. Because postoperative urinary retention following colpocleisis occurs in approximately half of patients, discussions on options for type of catheter management available postoperatively if retention occurs is essential to preoperative counseling. These data can aid surgeons in preoperative counseling and shared decision making, which can enhance patients' overall surgical experience.

Disclosures: Angela DiCarlo-Meacham: None, Katherine Dengler: None, Eva Welch: None, Sara Hamade: None, Cara Olsen: None, Walter von Pechmann: None

Scientific Salon 60
ARE VOIDING TRIALS NECESSARY AFTER POSTERIOR COMPARTMENT RECONSTRUCTIVE SURGERY?

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Objective: Posterior compartment surgery has historically been considered a potential risk factor for postoperative urinary retention due to the effect of postoperative pain on the pelvic floor. Our objective was to compare rates of urinary retention in patients undergoing surgery in the posterior vaginal compartment alone versus any vaginal apical or anterior compartment pelvic reconstructive surgeries without hysterectomy.

Methods: We performed a retrospective cohort study of women who underwent vaginal pelvic reconstructive surgery without hysterectomy, from 1/2015 to 11/2020. We excluded patients undergoing concomitant anti-incontinence procedures and those with preoperative voiding dysfunction, defined as preoperative post-void residual >150 or need for self-catheterization prior to surgery. We compared two groups: 1) patients undergoing surgery in the posterior vaginal compartment alone versus 2) patients undergoing surgery with any vaginal apical and/or anterior compartment surgeries. Our primary outcome was rate of postoperative urinary retention, defined as a failed voiding trial prior to discharge. Our secondary outcome included days of catheterization. Standard statistical methods were used. Multinomial logistic regression was performed to assess association of rate of postoperative urinary retention with age, Charlson Comorbidity Index, advanced stage prolapse, operative time, cystoscopy, and preoperative phenazopyridine administration.

Results: There were 362 patients included in our analysis. Of these patients, 141 (39.0%) underwent surgery in the posterior vaginal compartment alone and 221 (61.0%) underwent vaginal apical and/or anterior compartment surgeries. Patients in the posterior vaginal compartment alone group were younger (56.5 ± 12.6 v 63.4 ± 11.8, $P < 0.001$), more likely to be White (92.2% v 79.6%, $P = 0.02$), and less likely to have stage 3 or 4 prolapse (23.7% v 40.7%, $P = 0.001$). All other baseline characteristics were similar between groups. For our primary outcome, the rate of postoperative urinary retention was significantly lower in the posterior vaginal compartment alone group (9.9% v 41.6%, $P < 0.001$). For our secondary outcome, number of days of catheterization was significantly lower in the posterior vaginal compartment alone group (0.4 ± 1.2 days v 1.5 ± 2.4 days, $P < 0.001$). In multinomial logistic regression, only compartment of surgery was significantly associated with the outcome, with surgery in the posterior vaginal compartment alone showing a greater association with passing the voiding trial (OR 5.5, 95% CI 2.61-11.45).

Conclusions: Our study suggests that rates of postoperative urinary retention following posterior vaginal compartment surgery alone are low, and these patients may not require formal voiding trials after surgery.

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Scientific Salon 61
IMPLEMENTATION OF AN EARLY RECOVERY AFTER SURGERY (ERAS) PROTOCOL IN PATIENTS UNDERGOING FEMALE PELVIC RECONSTRUCTIVE SURGERY: IMPACT ON COMPLICATIONS, HOSPITAL STAY AND COST

R. Dutta[1], R. Xu[2], T. Cui[3], A. Plair[4], C. Matthews[1]. *Wake Forest Baptist Health[1], Wake Forest Baptist Medical Center[2], Wake Forrest School of Medicine[3], Stony Brook University Hospital[4]*

Objective: Minimizing hospital admission and maximizing utilization of outpatient surgery facilities are critical for patients undergoing elective surgery during the COVID-19 pandemic in order to prevent viral spread within healthcare facilities and maximize inpatient hospital bed availability.

Methods: We implemented an early recovery after surgery (ERAS) protocol for all patients undergoing female pelvic reconstructive surgery starting on June 1st, 2020 by a single surgeon. The protocol included pre-op hydration, a urinary anesthetic, pre- and post-op acetaminophen and ibuprofen, post-op perineal ice and bowel regimen, identification and enrollment of family members to assist with care, and communication regarding planned same-day discharge. We compared demographic, operative, hospital stay, complications, and cost data in patients pre (PRE) and post (POST) ERAS implementation.

Results: In all, 173 patients (82 PRE Nov 2019 – Feb 2020, 91 POST June – Sept 2020) were included. There were no differences in age, body mass index, ASA score, smoking history, surgery type, operative time, intra-op complications, and post-op complications between the PRE and POST groups ($P > 0.05$). POST patients had a higher mean Charlson Comorbidity Index (2.6 vs 1.9, $P = 0.0132$). Significantly more surgeries were done in an outpatient setting in the POST group (73.6% vs 48.8%, $P = 0.0008$), and significantly more patients were discharged on the day of surgery in the POST group (80.2% vs 50.0%, $P = 0.0003$). There were no differences in the rates of unexpected emergency room or clinic visits ($P > 0.05$). Both peri-op and discharge opiate requirements did not significantly differ but trended towards being reduced in POST patients ($P = 0.0782$ and 0.0926, respectively). Post-op opiate requirement was significantly reduced in the POST group ($P < 0.0001$). There were no significant differences between revenues, expenses, and margins between the two groups ($P > 0.05$); however, there was a trend towards an increased operating margin in the POST group ($4,554 vs $2,151, p = 0.1163). Bed unit cost was significantly lower in the POST group ($210 vs $533, $P < 0.0001$).

Conclusions: In patients undergoing female pelvic reconstructive surgery, an early recovery after surgery protocol facilitated transfer of procedures to an outpatient surgical site and permitted same-day discharge without increasing complications, clinic visits, or emergency room visits. It may also reduce cost and improve operating margins to hospital systems.

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Scientific Salon 62
IS SAME-DAY DISCHARGE FOLLOWING MINIMALLY INVASIVE SACROCOLPOPEXY SAFE AND FEASIBLE?

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Objective: Enhanced recovery pathways and minimally invasive surgical techniques have brought significant reductions in postoperative length of stay. However, data regarding the feasibility of same-day discharge after minimally invasive sacrocolpopexy are sparse. The objectives of this study are to investigate the trends and outcomes of ambulatory minimally invasive sacrocolpopexy using data from a contemporary multicenter nationwide cohort.

Methods: We used the American College of Surgeons National Surgical Quality Improvement Program database to identify adult women who underwent non-emergent minimally invasive sacrocolpopexy (including

both laparoscopic/robotic approaches) from 2012 to 2018. Those undergoing concomitant hysterectomy, colectomy, proctectomy, proctopexy, and transvaginal mesh repair were excluded, as were patients with a postoperative diagnosis of rectal prolapse or age 90 or greater. To focus analysis on patients with a noncomplicated postoperative course of care, patients who were discharged on POD 3 or greater were excluded. Baseline demographics and 30-day outcomes were compared between patients who underwent ambulatory (discharge on POD 0) minimally invasive sacrocolpopexy and those who were discharged on POD 1-2. Multivariable logistic regression and Cox proportional hazards modelling were used to evaluate associations between same-day discharge and 30-day complications, unplanned readmissions, and unplanned reoperations.

Results: Of the 2928 women in this study, 362 (12.4%) were discharged on the same day (POD 0), and 2566 (87.6%) were discharged on POD 1-2. The proportion of same-day discharges increased throughout the study timeframe, from 5.6% in 2012 to 20.6% in 2018. The same-day discharge group was younger (mean [SD] 61.9 [11.5] vs 63.6 [9.9]; $P = 0.04$), with lower proportion of ASA Class III or higher patients (21.8% vs. 27.5%; $P = 0.02$), hypertension (37.3% vs. 46.5%; $P < 0.001$), shorter total operation time (median [IQR] 142 [97-195] min vs. 172 [135-221] min; $P < 0.001$), and fewer concomitant slings placements (21.5% vs. 33.0%; $P < 0.001$). Same-day discharge was not associated with a significant difference in 30-d complications (3.0% vs 4.4%; $P = 0.23$), unplanned readmissions (1.1%vs 2.0%; $P = 0.28$), or unplanned reoperations (1.1% vs 0.9%; $P = 0.55$). On multivariable analyses, same-day discharge was not associated with a significant difference in 30-d complications (OR 0.72, 95% CI 0.38-1.36; $P = 0.31$), readmissions (HR 0.55, 95% CI 0.20-1.54; $P = 0.26$), or reoperations (OR 1.40, 95%CI 0.47-4.14; $P = 0.54$).

Conclusions: Same-day discharge for minimally invasive sacrocolpopexy is safe and feasible in select patients. Additional evaluations regarding optimal patient selection, cost savings, and strategies for broader clinical implementation are warranted.

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Scientific Salon 63
PREOPERATIVE ACTIVITY LEVEL AND POSTOPERATIVE PAIN FOLLOWING PELVIC RECONSTRUCTIVE SURGERY

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Objective: Preoperative activity level has been associated with improved postoperative outcomes, including quality of life and physical recovery. There is a paucity of data about an association between preoperative activity level and postoperative pain. The objective of this study is to assess the association between high versus low baseline activity level and postoperative pain scores and opioid use.

Methods: This is an ongoing prospective cohort study that started in April 2019 of women undergoing surgery for pelvic organ prolapse and/or stress urinary incontinence. Our goal is to recruit 150 English speaking women, 18 years and older. Exclusion criteria include women who are pregnant or having mesh revision surgery. We used the Activity Assessment Survey (AAS), a validated tool that measures functional activity during the postoperative period. We defined high baseline activity (BA) as a score of 100 (no challenges with functional activity) and low BA as a score < 100 on the AAS. Demographic and operative information was obtained. Following surgery, participants filled out a 1-week medication diary and reported daily average pain scores using a 0-10 scale. The primary outcome was to compare postoperative pain level between high BA and low BA groups. Our secondary outcome was to compare average daily pain scores as well as postoperative opioid use following surgery between groups, as measured by total morphine milligram equivalents (MME) over the first postoperative week.

Results: We have recruited 96 (64%) of 150 participants for this study. Among these women, 64 (67%) were in the low BA group with a mean score of 82.2 ± 15.9 and 32 (33%) were in the high BA group with a mean score of 100 ± 0. Demographic characteristics were similar between groups, including mean age (57.9 ± 17.2 vs. 58.4 ± 12.3 years for high vs low BA groups, respectively; $P = 0.89$) and mean BMI (27.8 ± 5.7 vs. 29.3 ± 5.7 kg/m^2 for high vs low BA groups, respectively; $P = 0.23$). Most patients identified as white race/ethnicity ($P = 0.75$) and Charlson Comorbidity Index was similar between groups with a median of 2 ($P = 0.50$). There were no differences in the types of surgeries performed between groups, including those using mesh. For the primary outcome, the high BA group reported significantly lower pain scores compared to the low BA group (2.6 ± 1.8 vs. 4.3 ± 2.2, $P < 0.01$). For the secondary outcome, the high BA group required less opioids in the postoperative period than the low BA group (20.6 ± 34.7 vs. 61.4 ± 79.1 MME, $P = 0.02$). These MME requirements equate to approximately three 5 mg oxycodone tablets in the HBA group and eight 5 mg oxycodone tablets in the LBA group during the 1st week after surgery.

Conclusions: In this ongoing prospective cohort study, preliminary data show that higher preoperative activity level among patients undergoing urogynecologic surgery is associated with lower pain scores and decreased opioid use in the short-term postoperative period.

Disclosures: Nozomi Sakai: None, Jennifer Wu: None, Marcella Willis-Gray: None

Scientific Salon 65
CHARACTERIZING ADVERSE EVENTS REPORTING FOR AN OVER-THE-COUNTER DISPOSABLE INTRAVAGINAL SUPPORT DEVICE FOR STRESS URINARY INCONTINENCE

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Objective: Newer over-the-counter disposable intravaginal support devices (IVSDs) have been developed as a non-surgical treatment option for stress urinary incontinence (SUI) in recent years. Given the current need to reduce nonessential healthcare visits, these devices may become more widely used by the general public in the near future. However, while these products have been shown to be safe and effective in prior studies, little is known about reported adverse events (RAEs) related to their use and the subsequent management of these malfunctions. The objective of this study was to characterize RAEs for an over-the-counter IVSD and determine whether further medical treatment was necessary.

Methods: This study was performed by searching the Manufacturer and User Device Experience (MAUDE) database from inception to September 2020 for RAEs related to IVSD use for SUI. The MAUDE database is maintained by the FDA for post-market surveillance and is publicly available online. Users can search for RAEs related to malfunctions or injuries submitted either voluntarily by consumers, healthcare professionals, manufacturers (reported within 30 days of event) and/or user facilities (reported within 10 days of event). Information extracted from these reports included the unique report key, event date, report date, and event text descriptions. Resulting treatment following the patient's initial contact with the healthcare system was characterized and quantified. Given that no data on the number of patients who utilize the IVSD without incident exist, only descriptive statistics were calculated for this study. Additionally, given that the MAUDE database is publicly available and de-identified, IRB approval was not required.

Results: The first RAE attributed to the IVSD was received by the FDA on January 12, 2016, and after removing duplicates, 357 unique reports were filed through September 2020. Notably, 100 of these reports were submitted if the user noted that the device was defective prior to use and then discarded the device. These 100 reports were therefore not included in the analysis given the devices were not used, and as a result, a total of 257 reports were included for analysis.

Types of malfunctions and injuries are outlined in Table 1. The most common malfunction was that the IVSD string broke with either removal or insertion of the device (230/257 = 89.5%). The resulting treatment is outlined in Table 2. Out of the 133 patients who required medical attention (133/257 = 51.8%), the majority were evaluated and managed in the office setting (85/133 = 63.9%). For example, the provider was able to remove the device in clinic without incident. 37% (95/257) of patients were able to self-treat. For example, this self-management group represents RAEs in which patients removed the device independently. Of those that presented to the emergency room (18/257 = 7%), the provider was able to care for and discharge the patient. One RAE described a case in which a patient required surgical urethrovaginal fistula repair after a piece of the plastic applicator (5-7-cm) had been retained for 2-3 months. Another RAE noted that a patient developed a vesicovaginal fistula after leaving an IVSD in place for 2 years without further details.

Conclusions: Most complications attributed to IVSD use for SUI were self-managed or managed in the outpatient setting. No hospitalizations or deaths were attributed to IVSD use. Thus, providers and patients can be reassured that this over-the-counter device is generally low-risk.

Table 1: Descriptive Characteristics of Intra-Vaginal Support Device-Related Reported Adverse Events

Malfunctions & Injuries	N	%
String broke with removal or insertion	230	89.5
Defective applicator (i.e. petals bent, string caught in applicator)	9	3.5
Urinary tract infection	4	1.6
Retained piece found	3	1.2
String missing, defective, and/or detached prior to insertion	2	0.78
Material and/or design difficult to use	2	0.78
Material broke down	2	0.78
Device fell out	2	0.78
Fistula	2	0.78
No information received	1	0.39
Total	*257*	*100.0*

Table 2: Resulting Treatment for Intra-Vaginal Support Device-Related Reported Adverse Events

Resulting Treatment	N	%
Patient self-treated after event	95	37.0
In-person provider visit after event*	85	33.1
Unknown	28	10.9
"Medical attention" not otherwise specified*	27	10.5
Emergency room visit after event*	18	7.0
Phone call to provider after event*	2	0.78
Surgery*	1	0.39
Patient unable to independently use after attempt (device not defective)	1	0.39
Total	*257*	*100.0*

*Groups included in calculation for those requiring medical attention (n=133, 51.8%)

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Scientific Salon 66
REOPERATION AND MORTALITY IN OLDER WOMEN UNDERGOING MIDURETHRAL SLING VERSUS BULKING FOR STRESS URINARY INCONTINENCE: ARE WE SELECTING PATIENTS CORRECTLY?

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Objective: Given limited data regarding longer-term outcomes after procedures for stress urinary incontinence (SUI) among older adults, we sought to quantify rates of reoperation after sling compared to urethral bulking. As a secondary analysis we sought to characterize the comorbidities that might impact life expectancy and lead patients and providers to opt for a less invasive procedure.

Methods: We used the Medicare 5% limited dataset, which included office procedures, and inpatient and outpatient surgeries. Women 65 and older who underwent a sling or urethral bulking based on CPT codes between 2011 and 2014 were included. Only women who had been enrolled in Medicare the prior year without any SUI procedure were included. Women were followed until 2018 unless censored due to disenrollment or death. We evaluated differences in demographics, comorbidities, and concomitant surgeries between women undergoing sling versus bulking. Our primary outcome was reoperation for any indication, including persistent SUI, mesh complication, urinary retention, fistula, infection, hematoma or urinary tract injury. Our secondary outcome was mortality within 5 years of index procedure.

Results: From 2011-2014, we identified 5,601 women who underwent sling or urethral bulking as an initial procedure. Women who underwent sling were younger than those who underwent urethral bulking (73.0 vs 76.6 years, $P < 0.001$) and were healthier with respect to nearly all of the comorbidities evaluated (Table). Among 1,700 sling patients and 875 bulking patients who did not undergo any concomitant surgery, the rate of any reoperation at 5 years was lower in the sling group (10.3% vs 35.1% for bulking, $P < 0.001$). Persistent SUI accounted for most reoperations. Retreatment for SUI was lower among sling patients (6.7%; 3.4% sling and 3.3% bulking) compared to those undergoing bulking (34.6%; 4.9% sling and 29.7% bulking). Patients who underwent bulking had higher mortality starting two years after index procedure, a difference that widened over time (10.2% vs 23.2% at 5 years, $P < 0.001$). While 5-year mortality in the sling group was lower than expected based on age (10.2% vs 12.8%), mortality in the bulking group was markedly higher than expected (23.2% vs 16.9%).

Conclusions: Medicare beneficiaries with a wide range of comorbid conditions and shorter life expectancy were more likely to have SUI treated with bulking injection than with sling. While retreatment with bulking was common among bulking patients, retreatment with sling was similar between groups at both 1 and 5 years.

Table: Baseline characteristics of older women undergoing SUI procedures

Variable	Sling	Bulking	p-value
N	4,699	902	
Age (years), Mean (SD)	73.04 (5.80)	76.64 (7.04)	< 0.001
Race			.34
White	4,223 (89.9%)	820 (90.9%)	
Other/Unknown	476 (10.1%)	82 (9.1%)	
Concurrent Surgery			< 0.001
None	1,700 (36.2%)	875 (97.0%)	
Anterior / Posterior repair only	878 (18.7%)	*	
Hysterectomy Only	289 (6.2%)	*	
Apical Prolapse Only	1,334 (28.4%)	20 (2.2%)	
Hysterectomy or Prolapse	498 (10.6%)	*	
Place of Service			< 0.001
Office	37 (0.8%)	224 (24.8%)	
Inpatient Hospital	1,567 (33.3%)	63 (7.0%)	
Outpatient Hospital	2,842 (60.5%)	483 (53.5%)	
Ambulatory Surgical Center	253 (5.4%)	132 (14.6%)	
Comorbidities			
Cerebrovascular Disease	643 (13.7%)	175 (19.4%)	< 0.001
Cardiac Arrhythmias	1,096 (23.3%)	261 (28.9%)	< 0.001
Atrial Fibrillation	397 (8.4%)	129 (14.3%)	< 0.001
Coronary Heart Disease	1,136 (24.2%)	279 (30.9%)	< 0.001
Deep Vein Thrombosis	71 (1.5%)	25 (2.8%)	0.008
Hypertension	3,678 (78.3%)	750 (83.1%)	< 0.001
Chronic Pulmonary Disease	1,199 (25.5%)	275 (30.5%)	0.002
Diabetes	1,268 (27.0%)	270 (29.9%)	0.07
Diabetes with complications	358 (7.6%)	91 (10.1%)	0.01
Renal Disease	358 (7.6%)	147 (16.3%)	< 0.001
Non-metastatic Cancer	518 (11.0%)	125 (13.9%)	0.01
Metastatic Carcinoma	39 (0.8%)	12 (1.3%)	0.15
Dementia	78 (1.7%)	37 (4.1%)	< 0.001
Alzheimer's Disease	52 (1.1%)	22 (2.4%)	0.001
Chronic Pain	2,991 (63.7%)	669 (74.2%)	< 0.001
Fall-related injury	1,029 (21.9%)	264 (29.3%)	< 0.001
Urinary Tract Infection	2,187 (46.5%)	541 (60.0%)	< 0.001
Charlson Score, Mean (SD)	1.69 (1.94)	2.40 (2.37)	< 0.001

* N<11 suppressed in accordance with the CMS small cell size policy

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Scientific Salon 68
GENITAL HIATUS AS PREDICTOR FOR PESSARY SIZE AT THE TIME OF FIRST FITTING FOR WOMEN WITH AND WITHOUT HISTORY OF HYSTERECTOMY

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Objective: A pessary fitting exam for pelvic organ prolapse and/or stress urinary incontinence can involve different sizes and shapes of pessaries being inserted into and out of a woman's vagina. Although generally a well-tolerated exam, improving the likelihood of a successful first-time fitting with a single pessary, could provide more patient-centered outcomes for a woman. The objective of this study is to determine if genital hiatus measurement as obtained on a POP-Q can predict likelihood of successful first size pessary fitting. We hypothesized that women with a uterus will have a higher percentage of successful first size pessary fitting when pessary size was determined by a genital hiatus measurement (GH) as compared to women with a history of a prior hysterectomy. Secondarily, we aim to identify the overall proportion of women successfully fitted with first pessary size correlating to genital hiatus measurement.

Methods: This planned prospective cohort study included 145 women with symptomatic pelvic organ prolapse and/or stress urinary incontinence presenting for pessary fitting at a single institution over a 23-month period. All patients were initially fitted with a ring with support or incontinence ring with support, and the pessary size was chosen based on genital hiatus measurement (e.g., GH measures 4 cm, then #4 ring with support was chosen as first pessary to trial). Successful first size pessary fitting was defined as those who were successfully fitted on the first try with the pessary correlating with the patient's genital hiatus measurement and who elected to continue the pessary until one month follow up. Unsuccessful first size pessary fitting were those who either failed the pessary trial, those who were fitted with alternative pessary styles, or those who were fitted with a ring with support that was a different size than the measurement of GH (e.g., GH measures 4 cm, then #6 ring with support was the final pessary). Log binomial regression was used to examine the association between history of hysterectomy and successful fitting. Confounding was assessed using the 10 percent change-in-estimate method.

Results: In our sample population, approximately 60% of women without a hysterectomy had a successful fitting with pessary size correlating to genital hiatus, compared to 45% of women with a hysterectomy (p-value = 0.09). Women with a uterus were 1.3 times (95% CI: 0.94-1.87) more likely to have a successful first size fitting. As GH increases, women were less likely to have a successful first size fitting (risk ratio: 0.81, 95% CI: 0.72-0.91). No confounders were identified using the 10 percent change-in-estimate method. Overall, 138 patients (95.2%) had successful pessary fittings with 79 patients (54.5%) successfully fitted with pessary size correlating to genital hiatus measurement.

Conclusions: Women with a uterus were more likely to have a pessary fitted based on genital hiatus as compared to women with history of hysterectomy, however this was not statistically significant. The study may be underpowered to detect a difference and at this time; study recruitment is ongoing. Genital hiatus measurement appears to be an objective measurement that may guide appropriate selection of pessary size during fitting but further research is needed to elucidate its clinical utility.

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Scientific Salon 69
A COST-UTILITY ANALYSIS OF A CONCOMITANT VERSUS STAGED MIDURETHRAL SLING STRATEGY FOR STRESS URINARY INCONTINENCE IN WOMEN UNDERGOING APICAL SUSPENSION FOR PELVIC ORGAN PROLAPSE

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Objective: To estimate the cost-utility of a concomitant versus staged midurethral sling strategy (cMUS versus sMUS) among women undergoing apical suspension for pelvic organ prolapse.

Methods: Decision analysis modeling was used to compare the cost-utility of cMUS and sMUS strategies over a one-year time horizon. The main outcome was the incremental cost-effectiveness ratio (ICER) per quality adjusted life-years (QALY). Separate models were run to estimate cost-utilities for six different scenarios (Figure 1): women with preoperative objective, occult or no stress urinary incontinence (SUI) who underwent either minimally-invasive sacrocolpopexy or vaginal native tissue apical suspension surgery. Possible complications of de novo overactive bladder, urinary retention requiring sling lysis, mesh exposure and refractory SUI were included in the model. Direct costs from the payer perspective were derived from Medicare 2020 reimbursement rates. One-way sensitivity analyses of key variables were performed for each model. TreeAge Pro software was used for analysis.

Results: Among women without preoperative SUI, sMUS was the dominant strategy in both sacrocolpopexy and vaginal prolapse surgery models (Table 1). Models of women with preoperative objective or occult SUI had higher costs but showed a small increase in effectiveness with cMUS for both sacrocolpopexy and vaginal surgery models (Table 1). However, the ICERs exceeded the commonly accepted willingness-to-pay threshold of $50,000 per QALY. One-way sensitivity analyses estimated that ICERs were most impacted by the probability of cure following cMUS, and the utility of requiring a sMUS or experiencing refractory SUI.

Conclusions: A staged approach to midurethral slings for women without preoperative SUI is the dominant strategy with a higher utility and lower cost than a concomitant approach. Although the cMUS strategy had an increase in utility among women with preoperative objective or occult SUI, the ICER was greater than the willingness-to-pay threshold of $50,000 per QALY, suggesting patient preferences and values should guide the decision regarding concomitant versus staged MUS at time of apical prolapse repair.

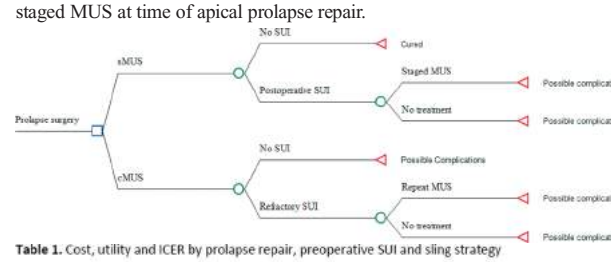

Table 1. Cost, utility and ICER by prolapse repair, preoperative SUI and sling strategy

Strategy	Cost (2020 US $)	Incremental cost	Effectiveness (utility)	Incremental effectiveness	Cost/ Effectiveness	ICER (2020 US $)
Minimally-invasive sacrocolpopexy, objective SUI						
sMUS	1,511		0.86		1,757	
cMUS	7,720	6,209	0.87	0.01	8,828	419,648
Minimally-invasive sacrocolpopexy, occult SUI						
sMUS	1,275		0.84		1,513	
cMUS	7,702	6,426	0.88	0.04	8,743	169,311
Minimally-invasive sacrocolpopexy, no SUI						
sMUS	606		0.90		674	**DOMINANT**
cMUS	7,688	7,081	0.89	-0.01	8,672	-556,844
Vaginal native tissue suspension, objective SUI						
sMUS	1,509		0.81		1,852	
cMUS	7,753	6,243	0.87	0.06	8,892	109,593
Vaginal native tissue suspension, occult SUI						
sMUS	1,113		0.82		1,361	
cMUS	7,755	6,642	0.87	0.05	8,891	122,070
Vaginal native tissue suspension, no SUI						
sMUS	267		0.91		295	**DOMINANT**
cMUS	7,732	7,464	0.88	-0.02	8,771	-304,163

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Scientific Salon 70
OBSTRUCTED DEFECATION CONSTIPATION AFTER PELVIC RECONSTRUCTIVE SURGERY

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Objective: Postoperative bowel function is a significant concern for patients undergoing pelvic reconstructive surgery. Urogynecology patients consider postoperative constipation as a severe adverse effect of surgery. However, we lack information about how often this occurs, and which women are at greatest risk. The objective of this study was to estimate the proportion of patients with obstructed defecation constipation in the first seven days after pelvic reconstructive surgery. We also sought to identify patient and surgery characteristics associated with this outcome and to describe the associated bother.

Methods: Women undergoing pelvic reconstructive surgery for pelvic organ prolapse and/or urinary incontinence completed a preoperative and postoperative questionnaire and seven-day postoperative bowel diary. Obstructive defecation syndrome (ODS) was assessed using a validated questionnaire. Medical records were reviewed to obtain patient characteristics and perioperative data. We estimated the proportion of women with postoperative ODS and a 95% confidence interval. We compared baseline/demographic and perioperative characteristics between women with and without postoperative ODS. Bowel diary variables, completed during the week after surgery, were compared between women with and without postoperative ODS. Chi-square or Fisher's exact tests were used to compare categorical variables and Student's T-test or Wilcoxon rank-sum tests were used to compare continuous variables. Multivariable logistic regression was used to compare the characteristics of women with and without postoperative ODS, controlling for factors found to have significant associations in bivariate analyses. We considered whether the outcome was associated with bother, using Wilcoxon rank-sum tests to compare bother between women with and without postoperative ODS. Spearman correlation coefficients were used to describe the relationship between bother and postoperative ODS score as well as bowel diary variables. Results were considered significant with a p value of <0.05.

Results: Of 186 participants enrolled, 165 completed the postoperative ODS questionnaire. Of these, 39 women (23.6%, 95% CI 17.2-30.1) had postoperative ODS. Preoperative ODS was significantly associated with postoperative ODS ($P < 0.001$). Although postoperative ODS was also associated with posterior colporrhaphy (p = 0.034) and longer duration of surgery ($P = 0.026$), these association were not significant in a multivariable model that controlled for age and preoperative ODS. In the multivariable model, the odds for postoperative

ODS were significantly associated with preoperative ODS (OR 2.68, 95% CI 1.73-4.17). Maximum strain and pain scores for bowel movements were significantly higher ($P = 0.0001$), sensation of incomplete bowel emptying was more severe ($P < 0.0001$), and splinting was performed significantly more in women with postoperative ODS ($P = 0.0006$). Women with postoperative ODS reported significantly more bother associated with symptoms of obstructed defecation constipation during the week after surgery ($P < 0.001$) and the degree of bother was significantly associated with postoperative ODS score ($P < 0.0001$).

Conclusions: Using a validated disease-specific questionnaire to identify obstructed defecation, this complication was identified in 23.6% of patients in the first week after pelvic reconstructive surgery. Preoperative ODS is a significant and important risk factor for this postoperative complication.

Table 1: Baseline Characteristics of Study Participants with and without Postoperative Obstructive Defecation Syndrome

	Postoperative ODS Score < 9 (n=126)	Postoperative ODS Score ≥ 9 (n=39)	
Characteristic			**P value**
Age, mean (SD)	59.4 (13.6)	58.6 (12.7)	0.6502[a]
BMI, mean (SD)	29.1 (6.5)	27.8 (5.3)	0.3419[b]
Race, n (%)			0.7318[c]
Caucasian	103 (81.8)	31 (79.5)	
Black	17 (13.5)	5 (12.8)	
Asian	1 (0.8)	1 (2.6)	
Hispanic/Latina	5 (4.0)	2 (5.1)	
Other	0 (0)	0 (0)	
Parity, n (%)			0.3671[c]
0-1	23 (18.3)	4 (10.3)	
2	60 (47.6)	16 (41.0)	
3	26 (20.6)	11 (28.2)	
≥ 4	17 (13.5)	8 (20.5)	
Prolapse Stage, n (%)			**0.0002**[c]
2	36 (28.6)	26 (66.7)	
3	43 (34.1)	9 (23.1)	
4	5 (4.0)	0 (0)	
Missing	42 (33.3)	4 (10.3)	
Bowel Movements Per Week, n (%)			0.1177[d]
< 3	9 (7.1)	6 (15.4)	
≥ 3	117 (92.9)	33 (84.6)	
Preoperative ODS, n (%)	15 (11.9)	21 (53.9)	**<0.0001**[b]
Past Medical History, n (%)			
Chronic Narcotic Use	3 (2.38)	0 (0)	1.0000[c]
IBS History	5 (3.97)	4 (10.26)	0.2175[c]
IBD History	6 (4.76)	1 (2.56)	1.0000[c]
Type of Surgery, n (%)			
Vaginal	113 (89.68)	35 (89.74)	0.9913[d]
Abdominal w/ Laparotomy	3 (2.38)	1 (2.56)	1.0000[c]
Abdominal w/ Laparoscopy or Robotic	23 (18.25)	11 (28.21)	0.1794[d]
Posterior Repairs, n (%)			
Posterior Colporrhaphy	22 (17.46)	13 (33.33)	**0.0341**[d]
Perineorrhaphy or Perineoplasty Alone	10 (7.94)	2 (5.13)	0.7334[c]
Length of Surgery (minutes), mean (SD)	178.5 (93.6)	216.3 (84.2)	**0.0259**[b]
EBL (mL), mean (SD)	83.5 (66.6)	95.3 (53.2)	0.0892[b]
Length of Hospital Stay, n (%)			0.0590[d]
≥ 24 hours	69 (54.76)	28 (71.79)	
< 24 hours	57 (45.24)	11 (28.21)	

EBL, Estimated Blood Loss; *IBS*, Irritable Bowel Syndrome; *IBD*, Inflammatory Bowel Disease; *ODS*, Obstructive Defecation Syndrome

[a]Student's T-test; [b]Wilcoxon rank-sum test; [c]Fisher's exact test; [d]Chi-square test

Table 2: Comparison of Postoperative Bowel Diary Results Between Participants with and without Postoperative Obstructive Defecation Syndrome

	Postoperative ODS Score < 9 (n=126)		Postoperative ODS Score ≥ 9 (n=39)		
Variable	**N**	**Median [IQR]**	**N**	**Median [IQR]**	**P value**
Day of First Bowel Movement	119	2 [2-3]	38	3 [2-4]	0.1039[a]
Maximum Strain Score	118	1 [0-3]	36	3 [1-5.5]	**0.0001**[a]
Maximum Pain Score	119	0 [0-2]	38	3 [1-5]	**0.0001**[a]
Maximum Sensation of Incomplete Bowel Emptying	118	1 [0-5]	38	7.5 [3-9]	**<0.0001**[a]
Bother Score	126	1 [0-3]	39	5 [4-8]	**<0.0001**[a]
Bristol Stool Scale Score, n (%)					**0.0192**[b]
1	7 (6.2)		7 (19.4)		
2	15 (13.3)		5 (13.9)		
3	17 (15.0)		1 (2.8)		
4	20 (17.7)		4 (11.1)		
5	26 (23.0)		4 (11.1)		
6	16 (14.2)		6 (16.7)		
7	12 (10.6)		9 (25)		
Vaginal Splinting, n (%)	3 (2.52)		8 (21.1)		**0.0006**[b]
Medications Used, n (%)					
Laxatives	55 (45.8)		32 (84.2)		**<0.0001**[c]
Enemas	2 (1.7)		7 (18.4)		**0.0007**[b]
Suppositories	7 (5.8)		6 (15.8)		0.0516[c]
Stool Softeners	93 (77.5)		36 (94.7)		**0.0160**[b]
Fiber Supplements	17 (14.2)		8 (21.1)		0.3108[c]
Narcotics	63 (52.5)		26 (68.4)		0.0846[c]

IQR, Interquartile Range; *ODS*, Obstructive Defecation Syndrome

[a]Wilcoxon rank-sum test; [b]Fisher's exact test; [c]Chi-square test

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Scientific Salon 71

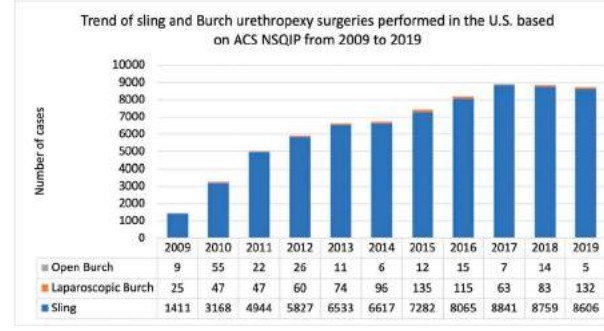
CAN FPMRS FELLOWS MEET THE MINIMUM NUMBER OF BURCH PROCEDURES TO GRADUATE? – A REVIEW OF THE NATIONAL TREND IN BURCH URETHROPEXY VERSUS MIDURETHRAL SLING USING THE NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE FROM 2009 TO 2019.

E. Kim[1], C. Hong[1], H. Harvie[2]. *University of Pennsylvania[1], PSOM[2]*

Objective: Midurethral sling has now become the standard of care for surgical intervention for female stress urinary incontinence (SUI). In recognition of this trend, the Accreditation Council for Graduate Medical Education (ACMGE) only requires 5 Burch urethropexy procedures to graduate from Female Pelvic Medicine and Reconstructive Surgery (FPMRS) fellowship. The primary aim of this study was to review the trend in sling vs Burch (laparoscopic and open). A secondary aim was to compare the pre-operative characteristics and post-operative complications between sling vs Burch using the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database from 2009 to 2019.

Methods: This was a retrospective cohort study using the NSQIP database. We identified patients who underwent sling, laparoscopic Burch or open Burch using Current Procedural Terminology (CPT) codes. We compared pre-operative characteristics [age, smoking, diabetes, chronic obstructive pulmonary disease, chronic steroid use, coagulopathy, hypertension, anemia, obesity, and American Society of Anesthesia class] and post-operative complications [surgical site infection, deep vein thrombosis, pulmonary embolism, urinary tract infection, myocardial infarction, cardiac arrest, and return to OR] using logistical regression analysis.

Results: 71,112 sling and Burch procedures were captured from 2009 to 2019. (Table 1) Of note, CPT codes do not distinguish between synthetic mesh and autologous fascial slings. Of these, 70,053 patients underwent sling, 877 laparoscopic Burch, and 182 open Burch. The proportion of slings performed was >98% for all years (Figure 1). Sling group was more likely to be older and have anemia. There was no difference between sling vs Burch in post-operative complications.



Sling versus Burch (Open and laparoscopic) from 2009 to 2019 (N = 71,112)		
Number of cases	n	%
Sling	70,053	98.51%
Laparoscopic Burch	877	1.23%
Open Burch	182	0.26%
Comparison of pre-op characteristics		
	Odds ratio	P value
Age (65+ age)	0.5992696	0.0001
Obesity (BMI>30)	0.1148994	0.136
Diabetes requiring medicine	0.2002412	0.151
Hypertension requiring medicine	0.0307663	0.722
Smoking	0.1814308	0.124
Chronic obstructive pulmonary disease	0.1767983	0.538
Chronic steroid use	0.1145358	0.697
Anemia (Hematocrit<33)	0.510137	0.0001
Coagulopathy	0.5169907	0.375
American Society of Anesthesia (ASA) Class 3+	0.0737942	0.455
Comparison of post-op complications		
	Odds ratio	P value
Urinary tract infection	0.1566893	0.404
Superficial surgical site infection	-0.129908	0.774
Deep surgical site infection	NA	NA
Organ surgical site infection	-0.3301251	0.519
Deep vein thrombosis	-0.7397674	0.467
Pulmonary embolism	NA	NA
Myocardial infarction	NA	NA
Cardiac arrest	NA	NA
Takeback to Operating room	-0.1490612	0.605

Conclusions: Our findings suggest that midurethral sling represents the vast majority of surgical interventions preformed for female SUI in the U.S. While NSQIP captures only 689 member institutions, this reasonably represents the national trend for teaching hospitals. A change in the educational approach may be necessary to train FPMRS fellows to perform Burch urethropexy.

Disclosures: Edward Kim: None, Christopher Hong: Cosm Medical: Consultant: Self , Heidi Harvie: None

Scientific Salon 72
PROMIS PAIN INTENSITY AND INTERFERENCE AFTER APICAL SUSPENSION FOR PELVIC ORGAN PROLAPSE

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Objective: Patient Reported Outcome Measurement Information System (PROMIS) questionnaires provide valid comparisons across disciplines. As limited PROMIS data exist in Urogynecology, we sought to use PROMIS Pain Intensity (PI) and Pain Interference (PIF) short forms to assess pain and recovery 1 week (wk) and 6 wks after apical suspension procedures for pelvic organ prolapse (POP).

Methods: PROMIS PI and PIF forms were given to patients having uterosacral ligament suspension (USLS), sacrospinous ligament fixation (SSLF) or minimally invasive sacrocolpopexy (MISC) at baseline, 1 wk and 6 wks postoperatively. The PROMIS PI form assesses current, worst and average pain in the last 7 days on a scale of "No pain" to "Very severe pain". The PROMIS PIF form assesses how pain affects daily activity, work at home, social activities and household chores in the last 7 days. PIF is rated from "Not at all" to "Very much". PROMIS raw scores are converted to T-scores, which reflect general population (GP) data. A mean GP T-score is 50. Clinical minimally important difference (MID) for PI is ≥5 points (pts), or a GP mean ≥ 55, and PIF MID is ≥2-3 pts, or a GP mean of ≥52-53. We compared mean PI and PIF T-scores across apical suspension groups at baseline, 1 wk and 6 wks with ANOVA. Multiple linear regression assessed variables associated with 1 wk scores and was adjusted for apical suspension type, advanced POP (stage 3 or 4), concurrent hysterectomy and concurrent sling.

Results: Eighty-three patients were evaluated: USLS = 23 (27.4%), SSLF = 48 (57.1%), MISC = 13 (15.5%). 83.5% were White, with mean age of 61 ± 11.9 years, with no differences between groups. USLS had a higher proportion of concurrent hysterectomy (100%) compared to SSLF (0%) and MISC (30.8%), $P = <0.01$. Baseline PI or PIF scores did not differ between groups. At 1 wk, all groups showed MID in PI and PIF T-scores compared to baseline, increasing 8.2-13.9 pts for PI and 8.8-17.4 pts for PIF. Between groups at 1 wk, PI scores did not differ, while PIF scores were higher in USLS (66.3 ± 6.6) and MISC (65.5 ± 5.9) compared to SSLF (59.2 ± 9.8), p = 0.01. At 6 wks, PI and PIF scores were similar to baseline, indicating that pain returns to preoperative levels. In addition, 6 wk PI or PIF scores did not differ between groups (Table 1). Multiple linear regression did not show association between apical suspension and 1 wk PI or PIF scores. Instead, hysterectomy was associated with a 5.9 pt increase in 1 wk PI scores and a 6.3 pt increase in 1 wk PIF scores.

Conclusions: PROMIS PI and PIF short forms are a feasible tool to assess pain and its effects after apical suspension. While all apical procedures result in increased pain scores at 1 wk, pain returns to baseline by 6 wks.

Table 1

	USLS	SSLF	MISC	USLS vs SSLF vs MISC
	Mean ± SD	Mean ± SD	Mean ± SD	p-value
PROMIS Pain Intensity				
Baseline	48.4± 9.2	48.5± 10.8	50.1± 13.6	0.89
1 week	62.3 ± 6.6	57.5 ± 9.5	58.3 ± 6.8	0.16
6 weeks	48.8 ± 8.9	43.3 ± 9.5	45.5 ± 11.6	0.12
PROMIS Pain Interference				
Baseline	48.9± 6.2	50.4± 9.2	51.9± 10.75	0.62
1 week	66.3 ± 6.6*	59.2 ± 9.8*	65.5 ± 5.9	0.01*
6 weeks	51.1 ± 8.9	46.1 ± 7.0	49.3 ± 9.8	0.07

*Tukey post hoc p= 0.02
PROMIS= Patient Reported Outcome Measurement Information System
USLS= Uterosacral ligament suspension
SSLF= Sacrospinous ligament fixation
MISC= Minimally invasive (laparoscopic or robotic) sacrocolpopexy

Disclosures: Michelle Schroeder: None, Jennifer Wu: None, Marcella Willis-Gray: None

Scientific Salon 73
TELEMEDICINE ALLOWS FOR ACCURATE PATIENT SELF-REPORTED STAGING AND SURGICAL PLANNING IN THE FPMRS POPULATION

E. Braxton[1], S. Vilasagar[2], M. Tarr[2], E. Myers[2]. *Carolinas Medical Center of Atrium Health[1], Atrium Health[2]*

Objective: To compare the treatment plan proposed at a new patient telemedicine consultation to a subsequent plan proposed after an in-office examination. Secondary objectives were to assess concordance of patient self-assessment of prolapse during telemedicine visit with provider assessment of prolapse via Pelvic Organ Prolapse-Quantification (POP-Q) examination during in-office visit and to calculate sensitivity and specificity of Pelvic Floor Distress Inventory-20 (PFDI-20) question number three responses with patient self-assessment of prolapse and POP-Q stage.

Methods: We conducted a retrospective cohort analysis of all patients presenting to a Female Pelvic Medicine and Reconstructive Surgery (FPMRS) practice who underwent new patient consultation via telemedicine visit and completed in-office follow up with examination. The primary outcome was concordance of treatment plans, either non-surgical or surgical, after telemedicine visit versus in-office follow-up examination. Secondary outcomes included patient demographics, comparison of patient self-assessment of prolapse stage to POP-Q stage noted on exam, and comparison of PFDI-20 question number three score to patient self-assessment of prolapse and provider assessment of prolapse.

Results: Between April and October of 2020, 100 patients completed a new patient virtual visit consultation and an in-office follow up examination. After telemedicine consultation, 43% versus 57% of women elected to have non-surgical versus surgical treatment respectively. After in-office follow-up, 42% versus 58% of women elected to have non-surgical versus surgical treatment. Concordance rates were 79% for non-surgical plans and 86% for surgical plans; overall 83% ($P < 0.001$). Ninety-three patients underwent POP-Q examination and self-assessment was accurate for 48/93 patients (51.7%, $P < 0.01$). The sensitivity and specificity for an affirmative response to vaginal bulge symptoms with Stage II prolapse or higher on patient self-assessment was 90.5% and 65.4% and on POP-Q examination 88.9% and 61.9%, respectively.

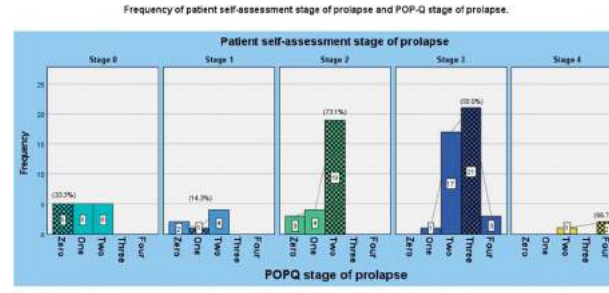
Conclusions: Telemedicine consultations offer a feasible modality for creation of non-surgical and surgical treatment plans for women with pelvic floor disorders.

Table 1. Concordance and discordance rates by treatment plan type

Telemedicine Treatment Plan	In-office Treatment Plan	p<0.001 n=100 (%)
Non-surgical →	Non-surgical	34 (79.1%)
Surgical→	Surgical	49 (86%)
Non-surgical→	Surgical	9 (20.9%)
Surgical→	Non-surgical	8 (14%)
Overall concordance rate		*83 (83%)*

Data are number of patients (%)

Figure 1. Frequency of patient self-assessment stage of prolapse and POP-Q stage of prolapse



- Checkered bars indicate number of patients who accurately reported prolapse stage at time of virtual visit as compared to POP-Q stage of prolapse at in-office exam

Disclosures: Elizabeth Braxton: None, Smitha Vilasagar: None, Megan Tarr: None, Erinn Myers: Boston scientific: Paid to the hospital not to me.: Self

Scientific Salon 74
UROGYNECOLOGY PATIENT SATISFACTION WITH TELEMEDICINE DURING THE COVID-19 PANDEMIC IN THE FIRST U.S. EPICENTER

S. Sansone, J. Lu[1], S. Drangsholt[2], T. Asfaw[3], S. Segal[1]. *Weill Cornell Medical College[1], Weill Cornell Medicine[2], Weill Cornell Medicine/New York Presbyterian Hospital[3]*

Objective: The COVID-19 pandemic changed the practice of medicine, requiring rapid reorganization and flexibility of healthcare delivery. Guidelines for urogynecologic patient care during the pandemic discuss deferring in-person visits, but little is known about patient satisfaction with telemedicine for a broad range of urogynecologic conditions.

Methods: We performed a cross-sectional survey study following a retrospective review of all urogynecologic telemedicine visits from 3/1/2020 to 3/31/2021 at a New York City (NYC) tertiary care center in Manhattan. Live, two-way synchronous video visits were performed unless there was an inadequate connection necessitating a telephone visit. Patients were then emailed a 19-question survey and electronic consent. The survey queried patient satisfaction with subcategories for scheduling, technology, provider interaction, fulfillment of personal needs, and overall satisfaction (Fig 1). For those who did not complete the survey electronically, phone interviews and consent were conducted. Responses were recorded using the Likert scale and grouped as either satisfied ("strongly agree" and "agree") versus dissatisfied ("strongly disagree," "disagree," and "neither agree or disagree"). Visits were categorized by chief complaint, including urinary tract infection (UTI), prolapse, incontinence, overactive bladder/lower urinary tract symptoms/bladder pain syndrome, surgical counseling, vulvovaginal symptoms, or other (e.g., postpartum consult). Chi-square analysis was performed to assess for differences in satisfaction among different demographic groups as well as by visit type.

Results: There were 256 telemedicine visits during the study period, and 88 patients completed the survey (34% unadjusted response rate). There were 77 video visits (87.5%) and 11 telephone visits (12.5%), with 65% of participants having prior experience with telemedicine. The average age of study participants was 55 years old (SD 18 yrs; 24–84 yrs). The majority of patients were white (69%), lived within the five boroughs of NYC (81%), and had higher levels of education (72% with a bachelor's or professional degree). There was a trend showing Manhattan residents having the greatest number of visits (39%) and higher overall satisfaction scores (98%) compared to other boroughs ($P < 0.05$). Patients aged 60-79 had lower satisfaction scores compared with other age groups (87% vs 97% for 20-39 yrs, 98% for 40-59 yrs, and 100% for 80+ yrs; $P < 0.05$). There were no differences in overall satisfaction among racial groups ($P = 0.599$), though those with advanced educational degrees trended towards higher satisfaction ($P < 0.05$). The most common reason for visits was for UTIs (31%), with overall satisfaction higher for visits regarding urinary complaints compared to those for prolapse or vulvovaginal complaints ($P < 0.05$). Altogether, high satisfaction rates were noted among the study population for scheduling (99%), technology (90%), provider interaction (96%), fulfillment of personal needs (91%), and overall satisfaction (94%).

Conclusions: We demonstrate high patient satisfaction for telemedicine visits in a tertiary urogynecology clinic during the COVID-19 pandemic for a variety of indications, with greater satisfaction observed for those visits which may not necessitate an in-person exam (e.g., UTI). Patients with a high education level and close proximity to the medical center trended towards higher utilization and satisfaction.

Figure 1. Patient Urogynecologic Telemedicine Survey

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Scheduling					
I was able to schedule my telehealth visit easily.					
My telehealth visit began on time.					
There were convenient visit times and dates to speak with my doctor.					
Technology					
I had no difficulty connecting for telehealth visits.					
The connection was of good quality for the telehealth visits.					
Provider					
My doctor introduced herself and her role in my care.					
My doctor was courteous.					
My doctor was skillful and knowledgeable.					
My doctor took time to listen to me.					
My prescriptions and orders were placed without delay.					
My questions and concerns were addressed during the visit.					
Personal Needs					
I do not have a concern for my privacy.					
The visit fulfilled my urogynecologic needs.					
My concerns were addressed during the visit.					
It was easy to access the telehealth doctor.					
Overall Satisfaction					
I was happy with the visit.					
I was satisfied with the telehealth urogynecologic care.					
I am likely to recommend my telehealth urogynecologist doctor.					
I am likely to continue to seek care at the urogynecology department.					

Disclosures: Stephanie Sansone: None, Jessica Lu: None, Siri Drangsholt: None, Tirsit Asfaw: None, Saya Segal: None

Scientific Salon 75
PATIENT ACCEPTANCE AND SATISFACTION WITH TELEMEDICINE IN FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY

H. Morsy[1], C. Scott[2], Z. Russell[3], R. Jairath[3], C. Ghetti[1], C. Chu[1], S. Sutcliffe[3], J. Lowder[1]. *Washington University in St. Louis[1], Washington University School of Medicine in St. Louis[2], Washington University School of Medicine[3]*

Objective: Objective: The COVID-19 pandemic sparked rapid and widespread implementation of telemedicine, the practice of delivering medical care remotely using two-way, real-time interactive communication. Our goal was to assess patients' acceptance, satisfaction, and desire for future use of telemedicine among women seeking care for pelvic floor disorders (PFDs).

Methods: We performed a structured telephone survey of new patients, who underwent video-only visits, and established patients who underwent a real-time video or audio-only telemedicine visit based on their preference when non-urgent, in-person visits were suspended. We designed two surveys (audio–only and real-time video) that included questions on demographics; level of comfort; overall satisfaction with the telemedicine visit; access and comfort with technology; desire to use telemedicine in the future; and perceived utility (Table 1). Student's t-tests and chi-squared tests were used to compare characteristics and survey responses between all three groups (Established audio-only, Established real-time video, and New real-time video participants) as well as Established audio-only vs real-time video participants.

Results: Results: Between April and June 2020, we conducted telemedicine visits with 233 patients, 132 (65%) of whom agreed to participate in our survey (63 (47.7%) audio-only, 69 (52.3%) video, including 35 Established, and 34 New patients). Mean age of participants was 62.6 ± 15.2 years. The majority identified as white (77.3%), married (65.9%), college educated or higher (62.1%), were insured by Medicare (56.8%), and resided a mean distance of 47 miles from in-person office locations. The most common chief complaints were POP and UI (48.8%). Overall, most participants (96.4%) described being "very" or "somewhat satisfied" with telemedicine in addressing their needs and "very" or "somewhat comfortable" sharing personal information with providers in a telemedicine visit (94.7%). Additionally, Established patient participants in both audio-only and video groups reported feeling "equal" or "much more comfortable" (83%) and "connected" (77.6%) to their provider during the telemedicine visit compared to in-person office visits. Though real-time video was

Table 1. Perceived utility of telemedicine, both audio-only and video, among established and new women with PFDs

Survey Question:	Real-time Video New[1] N=34	Real-time Video RTN[2] N=35	Audio only RTN[3] N=63	Total N=132	P-value[4]	P-value[5]
A. When an exam is not needed, the ability to have a telemedicine visit is:						
Of equal value with a face-to-face appointment	16 (18.5%)	24 (68.6%)	24 (38.7%)	64 (49.2%)	0.01	0.02
Of more value than a face-to-face appointment	14 (42.4%)	9 (25.7%)	23 (37.1%)	46 (35.4%)		
Of less value than a face-to-face appointment	3 (9.1%)	2 (5.7%)	15 (24.2%)	20 (15.4%)		
Missing	1 (2.9%)	0	1 (1.6%)	2 (1.5%)		
B. Considering my cost of travel, I still prefer to speak with my provider face-to-face.						
Agree/Strongly agree	16 (47.1%)	15 (42.9%)	32 (50.8%)	63 (47.7%)	0.76	0.92
Disagree/strongly disagree	10 (29.4%)	10 (28.6%)	13 (20.6%)	33 (25%)		
Neither agree nor disagree	10 (29.4%)	10 (28.6%)	17 (27%)	35(26.5%)		
No answer	0	0	1 (1.6%)	1 (0.8%)		
C. In my case, I believe the provider is able to do his or her job even if they aren't able to conduct a physical examination at every appointment						
Agree/Strongly agree	24 (70.6%)	25 (71.4%)	47 (74.6%)	96 (72.7%)	0.05	0.07
Disagree/strongly disagree	5 (14.7%)	4 (11.4%)	14 (22.2%)	10 (7.6%)		
Neither agree nor disagree	5 (14.7%)	4 (11.4%)	1 (1.6%)	23 (17.4%)		
No answer/missing	0	2	1 (1.6%)	3 (2.3%)		
D. I can communicate everything I need to my provider in a telemedicine appointment.						
Agree/Strongly agree	28 (82.4%)	28 (80%)	38 (60.3%)	94 (71.2%)	0.03	0.05
Disagree/strongly disagree	3 (8.8%)	2 (5.7%)	8 (12.7%)	13 (9.6%)		
Neither agree nor disagree	2 (5.8%)	5 (14.3%)	7 (11.1%)	14 (10.6%)		
No answer/Missing	1 (2.9%)	0	10 (15.9%)	11 (8.3%)		
E. I can get the same quality of care from a telephone appointment as from an in-person visit.						
Agree/Strongly agree	22 (64.7%)	22 (62.9%)	35 (55.6%)	79 (59.9%)	0.01	0.07
Disagree/strongly disagree	8 (23.5%)	4 (11.4%)	22 (34.9%)	34 (25.8%)		
Neither agree nor disagree	4 (11.8%)	8 (22.9%)	8 (9.5%)	18 (13.6%)		
No answer/Missing	0	1 (2.9%)	0	1 (0.8%)		
F. Did you feel like you had enough time with your doctor?						
Yes	33 (97.1)	35 (100%)	56 (88.9%)	124 (94%)	0.05	0.05
No	1 (2.9%)	0	7 (11.1%)	8 (6%)		

[1]Participants who were new to our practice and underwent a real-time video telemedicine visit.
[2]Participants who were established patients and choose to undergo a real-time video telemedicine visit.
[3]Participants who were established patients and choose to undergo an audio-only telemedicine visit.
[4]P-value comparing survey responses of established participants who underwent an audio-only vs real-time video visit using Fisher's exact.
[5]P-value comparing survey responses of all three groups, new video telemedicine participants, established video telemedicine, and established audio-only participants using Fisher's exact.

associated with greater perceived quality of care (Table 1), both groups expressed a desire to use telemedicine in the future (88.6%).

Conclusions: Conclusion: Women presenting with PFDs were satisfied with both real-time video and audio-only telemedicine visits. Both groups expressed interest in continuing to use telemedicine in the future. Telemedicine is a well-accepted option for providing care with the potential to reduce geographical barriers for women with PFDs and limited access to subspecialty care.

Disclosures: Haidy Morsy: None, Caroline Scott: None, Zoe Russell: None, Ruple Jairath: None, Chiara Ghetti: None, Christine Chu: None, Siobhan Sutcliffe: None, Jerry Lowder: None

Scientific Salon 76
FECAL INCONTINENCE ON YOUTUBE: A QUALITY ANALYSIS OF THE AVAILABLE HEALTH INFORMATION

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Objective: Patients commonly turn to YouTube for health information, yet the content of these videos is unregulated. Our aim was to evaluate the quality of information about fecal incontinence (FI) on YouTube.

Methods: Using the search terms "fecal incontinence," "accidental bowel leakage," "bowel control problem," and "leaking stool", the first 30 videos for each term were identified and independently assessed by three reviewers. Video source, video content, and number of views were recorded. Videos not in English or with non-medical content were excluded. We considered videos to be relevant if they were pertinent to adult women with non-neurogenic FI. We used three scoring tools to assess content quality. The modified DISCERN tool assessed video reliability (maximum score = 5). The Usefulness Score determined utility of video content for FI (maximum score = 10). The 16-item Patient Education Materials Assessment Tool (PEMAT) evaluated the level of understandability and actionability of videos (maximum score for each = 100%). Higher scores indicate better quality for all scoring tools. Interrater reliability was measured with intraclass correlation coefficient. To determine if one term or one source provided higher quality information, we compared scores using Kruskal-Wallis test.

Results: We evaluated 76 unique videos, of which 46 (60%) were relevant. Total number of views was 5,542,800. Majority of videos came from academic sources (24/76, 31.6%) and were intended for patient education (57/76, 75.0%). Median DISCERN score indicated moderate reliability (Table 1A). Median PEMAT Understandability score demonstrated a good level of coherency, whereas actionability was low. Actionability criteria of identifying actions the viewer could take and breaking action down into explicit steps were commonly missing, with 40/76 (52.6%) and 29/76 (38.2%) meeting criteria, respectively. Median Usefulness score reflected poor utility of video content. The terms "fecal incontinence" and "accidental bowel leakage" yielded significantly higher Usefulness scores than other terms (Table 1B). Academic sources had significantly higher DISCERN and PEMAT Understandability scores (Table 1B), and the term "fecal incontinence" more commonly generated videos from an academic source (P = 0.003). There was good correlation between reviewers for all tools (Table 1A).

Conclusions: YouTube videos discussing FI are of variable quality and are commonly irrelevant and lacking in useful information for women with FI. The paucity of clear actions women with FI can take to better their condition is problematic given these women often do not seek care. Searching with the terms "fecal incontinence" and "accidental bowel leakage" produces the most useful results.

Table 1A: Quality scores for all YouTube videos about fecal incontinence

All Videos (n=76)		
Assessment Tool	Total Score	Intraclass Correlation Coefficient, 95% CI
DISCERN	3.0 (2.7 - 3.7)	0.65 (0.53–0.75)
PEMAT Understandability	79.3 (72.6 - 88.1)	0.63 (0.52–0.74)
PEMAT Actionability	38.9 (0 - 94.4)	0.73 (0.63–0.81)
Usefulness	3.0 (1.0 - 5.5)	0.80 (0.73–0.86)

Table 1B: Quality scores for YouTube videos about fecal incontinence by search term and source of publication

Search Term					
Assessment Tool	Fecal Incontinence	Accidental Bowel Leakage	Bowel Control Problem	Leaking Stool	p
DISCERN	2.7 (0.7 - 3.0)	3.0 (2.3 - 3.3)	3.0 (2.0 - 3.3)	2.3 (0.3 - 3.0)	0.2
PEMAT Understandability	74.2 (44.4 - 78.5)	75.8 (27.3 - 81.5)	70.5 (58.6 - 78.8)	64.2 (44.8 - 69.6)	0.6
PEMAT Actionability	0 (0 - 33.3)	11.1 (0 - 44.4)	0 (0 - 44.4)	0 (0 - 33.3)	0.7
Usefulness	3.3 (1.7 - 5.3)	3.3 (0 - 4.5)	1.3 (0 - 3.3)	1.0 (0 - 3.7)	0.02
Source of Publication					
Assessment Tool	Academic	Private	Society	Advertisement/ Other	p
DISCERN	3.0 (1.7 - 3.5)	2.5 (0.7 - 3.0)	3.0 (2.3 - 3.3)	2.0 (0.3 - 2.3)	0.002
PEMAT Understandability	75.7 (44.4 - 84.9)	70.1 (27.3 - 74.9)	73.0 (55.6 - 81.0)	68.5 (44.8 - 75.7)	0.02
PEMAT Actionability	0 (0 - 38.9)	0 (0 - 27.8)	0 (0 - 44.4)	22.2 (0 - 50.0)	0.4
Usefulness	2.5 (0 - 4.5)	2.0 (0.3 - 3.3)	1.0 (0 - 2.8)	0 (0 - 2.2)	0.07

Data presented as median, IQR unless otherwise noted

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Scientific Salon 77
INSURANCE STATUS AND ACCESSIBILITY TO OBGYN SUBSPECIALIST APPOINTMENTS: RESULTS OF A FPMRS MYSTERY SHOPPER STUDY

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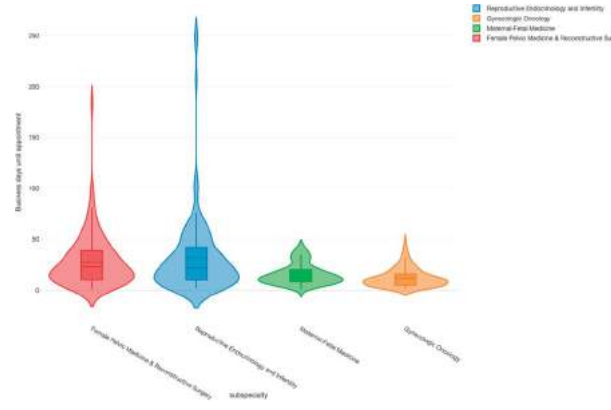
Objective: To evaluate the mean appointment wait time for a new patient visit with female pelvic medicine and reconstructive surgeons for US women compared to other OBGYN subspecialties. The study also examined the percentage of physicians willing or able to schedule Medicaid versus privately insured patients in these markets. Our intention is to gauge patient access to medical services and is one indicator of the current state of physician demand in select markets and in select medical specialties.

Methods: The audit study of OBGYN specialist appointment wait times by a "mystery shopper" determined the mean time new patients must wait before they can see a Female Pelvic Medicine and Reconstructive surgeon compared to all other ABOG-approved subspecialists. Boarded subspecialists from the four OBGYN subspecialties were examined from the National Provider Index to generate a list stratified by ACOG District and subspecialty. Each of the 500 physicians' offices was called. The caller asked for the soonest appointment available for stress urinary incontinence (FPMRS), a unilateral adnexal mass (GO), pre-conceptual counseling (MFM), or primary infertility (REI) respectively. Data for each physician were collected including date of soonest appointment, and physician demographics. Mean appointment wait time in business days was calculated.

Results: One hundred twenty-one FPMRS physician offices were called in 27 states plus the District of Columbia. Primary reasons for exclusion were phone went to voicemail (28%), phone number was to FPMRS physician's personal phone and correct number not obtained (17%) and closed medical system (e.g., Kaiser or military 7%). Fourteen percent (n = 21)of offices were excluded due to not accepting new and/or Medicare patients. The mean appointment wait time was 28.0 business days for a caller (standard deviation 25 business days). The appointment wait time was eleven days longer when calling with Blue Cross/Blue Shield compared to Medicaid (23 vs. 34, P = 0.01). There is a statistically significant difference when making appointments for FPMRS with private versus Medicaid insurance. All calls were fewer than ten minutes in length with a mean time of 2.3 minutes and a standard deviation of 1.7 minutes. Of the 121 FPMRS offices included in the analysis, 97% were located in areas classified by ZIP code as being urban by the United States Census Bureau. Female FPMRS physicians had a longer wait for a new patient visit than male FPMRS physicians (33.3 versus 25 business days, P = 0.09). There was no difference in wait times for American Congress of Obstetricians and Gynecologists (ACOG) regions.

Conclusions: Female Pelvic Medicine and Reconstructive Surgeons have a high rate of Medicaid acceptance and provide care to privately and publicly insured patients in a statistically different yet clinically similar wait time for non-emergent problems.



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Scientific Salon 78
BENIGN JOINT HYPERMOBILITY AND ITS ASSOCIATION WITH FEMALE PELVIC FLOOR DISORDERS

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Objective: Benign joint hypermobility (BJH) is a condition of generalized connective tissue laxity, distinct from mixed connective tissue diseases (MCTD) like Ehlers-Danlos and Marfan's syndrome. It is known that women with MCTD have a higher risk of pelvic floor disorders (PFDs), but studies focusing on BJH are few and show inconsistent results. The aims of this study were to assess the prevalence of BJH in patients presenting for urogynecologic evaluation and to compare rates of PFDs in patients with and without BJH.

Methods: This single-institution retrospective cohort study evaluated women presenting for an initial urogynecology visit between July 1, 2015 and December 31, 2017. Women 18 years and older who underwent assessment for hypermobility were included. Patients with a known diagnosis of MCTD were excluded. The Beighton score was used to assess for BJH; this consists of 5 joint hypermobility tests, 4 of which are bilateral, resulting in a score range of 0-9 with ≥4 qualifying as BJH. Chart review was performed to collect demographic and clinical data including age, race, body mass index (BMI), tobacco use, medical co-morbidities, obstetric history, and surgical history including prior prolapse or incontinence procedures. Patients were considered to have stress urinary incontinence (SUI) or overactive bladder (OAB)/urge urinary incontinence (UUI) based on diagnoses documented in the initial visit. Pelvic organ prolapse (POP) was defined as POPQ stage ≥2. The primary outcome was the prevalence of BJH. Secondary outcomes were the comparison of rates of POP, SUI, and UUI/OAB in patients with and without BJH. Separate Poisson regression models with robust error variance were used to calculate the relative risk of the outcomes by hypermobility status adjusted for covariates.

Results: 196 patients were included in this study. The majority of patients were white (84%) and 70% were > 50 years old. 8.16% of women met the criteria for BJH. Women with BJH had a 68% increased risk of POP (RR 1.68, 95% CI 1.11-2.53, $P = 0.01$) compared to those without BJH after adjusting for age, race, smoking status, history of prolapse surgery, and number of prior pregnancies and vaginal deliveries. There was no statistical correlation between BJH and SUI (RR 0.55, 95% CI 0.27-1.13, $P = 0.1$) or UUI/OAB (RR 0.59, 95% CI 0.32-1.08, $P = 0.09$).

Conclusions: In this cohort, women with BJH had a 68% increased risk of POP compared to those without BJH. Risks of SUI and OAB/UUI were not different, but this study may be underpowered for these outcomes. Further study of the relationship between BJH and PFDs and associated outcomes is warranted.

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Scientific Salon 80
EDUCATION AND INTEREST IN FEMALE SEXUAL FUNCTION AND DYSFUNCTION AMONG AMERICAN UROGYNECOLOGIC SOCIETY MEMBERS

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Objective: To describe education and interest in female sexual function (FSF) and dysfunction (FSD) within the Female Pelvic Medicine and Reconstructive Surgery (FPMRS) practice environment among American Urogynecologic Society (AUGS) members. This will help inform future educational initiatives.

Methods: This was a cross-sectional survey of AUGS members. Respondents were asked questions regarding their education and clinical experience with FSF and FSD. We used the chi-square test to compare proportions and log-binomial regression to estimate risk ratios (RR) and 95% confidence intervals (CI).

Results: Of 642 AUGS members who opened the survey, there were 123 (19%) complete responses. Most respondents were FPMRS- or female urology-trained (70%), associated with a training program (86%), and female (70%). Most respondents (74%) reported at least 10% of their patients had questions or concerns regarding FSF/FSD that were unrelated to prolapse or incontinence. Most respondents (71%) reported feeling comfortable evaluating and managing these patients. Seeing a higher percentage of patients (50% or more) with FSF concerns unrelated to prolapse or incontinence was associated with feeling more comfortable caring for them, compared to seeing fewer than 25% of patients with these concerns (RR: 1.4, CI: 1.1-1.8). There was no difference in comfort based on years since completing training ($P = 0.72$), gender ($P = 0.19$), or geographic region (P = 0.91). The percentage of patients with questions about FSF/FSD did not vary based on geographic region ($P = 0.25$). The majority of respondents reported 0 (28%) or 1 (54%) lectures on normal FSF in professional school, and 0 (52%) or 1 (33%) on FSD. Most respondents (67%) answered that they would expand their practice if they received additional education, and 51% would be likely to attend a CME course on FSF/FSD. The most frequently requested topics for additional education were disorders of desire (72%), orgasm (71%), or arousal (67%), and 40% of respondents chose more than 5 topics. The preferred formats of FSD education were pre-recorded lectures/videos (33%) or live online lectures/workshops (30%). The most frequently selected reasons for not expanding practice even if offered additional education were FSF/FSD not being of significant interest (33%), time and interruption of practice flow (30%), and FSF/FSD already being a part of the practice (28%).

Conclusions: Most AUGS survey respondents felt comfortable caring for patients with FSF concerns, and most would expand their practice if they received additional education. While FPMRS providers are seeing patients with questions about FSF/FSD unrelated to prolapse or incontinence, the vast majority of providers reported receiving only 0-1 lecture on FSF/FSD. This survey highlights a critical need and desire among AUGS members for more education in female sexual function and dysfunction and should inform future educational initiatives.

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Scientific Salon 81
THE EFFICACY OF FORCE OF STREAM ASSESSMENT FOR POST-OPERATIVE CATHETER MANAGEMENT FOLLOWING GYNECOLOGIC SURGERIES: A RETROSPECTIVE COHORT STUDY

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Objective: Post-operative urinary retention is common after gynecologic procedures. The cessation of Foley catheterization directly after surgery increases the risk of post-operative urinary retention to around 1 in 5. The objective of our study was to determine the efficacy of force of stream for post-operative catheter management following urogynecologic surgery.

Methods: Design and methods comply with the STROBE (strengthening the reporting of observational studies in epidemiology) guidelines. We conducted a retrospective cohort study of female patients undergoing an inpatient gynecologic procedure. Patients were asked to assess force of stream and if it was 50 % or better than usual pre-operative void, they were discharge home without a catheter. If flow of stream was less than 50%, the catheter was replaced and they were sent home and asked to follow up in 3 to 5 days for another void trial.

Results: 110 women were included with an average age of 56.9 +/- 10.2 years. 63.6% underwent surgery for pelvic organ prolapse, 23.6% underwent sling for urinary incontinence, and 12.7% underwent a combination of both. Force of stream was above 50% in 93.6% of the patients. Just 6.4% of the patients had FOS less than 50% and, hence, were discharged home with a foley catheter. Only 2 patients out of the 110 (1.8%) were discharged without a foley catheter and returned to the emergency department for signs of urinary retention. Sensitivity was 77.8% and specificity was 100%. Positive predictive value was 100% and negative predictive value was 98.1%.

Conclusions: The subjective assessment of FOS is a reliable and safe method to assess post-operative voiding. Given it's less invasive than backfilling the bladder and easier than using a bladder scan it should be the primary method to assess post-operative method even after complex pelvic floor surgery.

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Scientific Salon 82
ANALYSIS OF THE SECONDARY EFFICACY ENDPOINT OF A PROSPECTIVE, PARALLEL COHORT, MULTI-CENTER STUDY OF TRANSVAGINAL MESH VERSUS NATIVE TISSUE REPAIR OF ANTERIOR/APICAL PROLAPSE

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Objective: To investigate if transvaginal mesh (TVM) (Uphold LITE) repair of anterior/apical pelvic organ prolapse (POP) is superior to traditional native tissue (NTR) repair at 36 months.

Methods: A prospective, parallel cohort, multi-center study of TVM versus NTR repair of anterior/apical POP was conducted with two efficacy endpoints. Inclusion criteria included bothersome POP with a leading edge at or beyond the hymen. Primary surgical success was a composite outcome of subjective success, anatomic success with leading edge at or above the hymen, and no retreatment for POP. Secondary success was similarly defined but with no anterior POP at or beyond the hymen. All enrolled subjects were considered part of the Intent-to-Treat (ITT) population. All eligible subjects enrolled who underwent the assigned study procedure and had no inclusion/exclusion criteria violations were considered part of the Per Protocol analysis. Due to the observational study design, a propensity score methodology was planned and carried out to account for differences in baseline characteristics between treatment groups and to assess the balance between the treatment arms on relevant baseline characteristics.

Results: 225 women were enrolled in the TVM arm of the study and 485 in the NTR arm. Prior to stratification, the TVM patients were older (66.6 vs 62.4 years, $P < .001$), more likely to be white (93.3% vs 84.9%, $P = .001$) and post-menopausal (92.9% vs 83.3%, $P < .001$), more likely to have previously undergone POP repair (17.3% vs 10.3%, $P = .009$) and hysterectomy (65.3% vs 30.1%, $P < .001$), and had more severe anterior prolapse (Ba 2.5 cm vs 1.9 cm, $P < .001$). At 36 months, the secondary efficacy endpoint differed by approximately 10% between groups favoring the TVM cohort (Table 1). This difference was primarily driven by the objective success rate in the anterior compartment which was 12.4% higher in the TVM arm in the ITT and 12.5% higher in the Per Protocol analysis. The secondary safety endpoint of overall adverse events within 36 months was comparable between groups, affecting 35.1% of the TVM and 46.4% of NTR subjects (-15.7%, 95% CI [-24%, -7.5%]).

Conclusions: The secondary endpoint of composite anatomic and symptomatic success at 36 months was statistically higher in the TVM intent-to-treat groups. This along with comparable safety profile, suggests patients undergoing TVM repair for anterior and apical prolapse can expect higher success rates with an equal safety profile when compared to NTR.

Missing Data Handling Method and Analysis Population	Uphold LITE (TVM)	NTR	Unadjusted Treatment Difference (TVM - NTR) Estimate (90% CI)	Propensity Adjusted Treatment Difference (TVM - NTR)	
				Estimate (90% CI)	P-value of Inequality Test [b]
Multiple Imputation					
Intent-to-Treat [a]	83.6% (188/225)	72.7% (353/485)	10.9% (4.9%, 17.0%)	10.6% (3.3%, 17.9%)	0.009
Per Protocol	83.7% (185/221)	72.0% (346/480)	11.7% (6.1%, 17.2%)	10.0% (2.6%, 17.5%)	0.014
Available Case Analysis					
Intent-to-Treat	83.4% (141/169)	73.0% (289/396)	10.5% (4.5%, 16.4%)	8.2% (0.0%, 16.3%)	0.049
Per Protocol	83.7% (139/166)	73.3% (288/393)	10.5% (4.5%, 16.4%)	7.1% (-1.5%, 15.8%)	0.088

[a] If the lower bound of the propensity score adjusted CI is > -12%, non-inferiority of TVM to NTR is demonstrated
[b] An inequality test with 5% two sided type I error

Scientific Salon 83
SURGEON ATTITUDES TOWARDS CONCURRENT UROGYNECOLOGIC AND GYNECOLOGIC ONCOLOGY PROCEDURES

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Objective: Based on prior literature, ~44% of women with gynecologic malignancies have a concomitant urogynecologic issue and are thus candidates for a combined surgical approach. The primary objective of this study is to assess urogynecologic versus oncologic surgeon attitudes towards performing concurrent surgical procedures and to identify potential barriers to surgical collaboration.

Methods: This was an international, cross-sectional survey of gynecologic oncologists and urogynecologists. An anonymous, 23-question online survey was sent to members of the Society of Gynecologic Oncology (SGO) and the American Urogynecologic Society (AUGS) through their respective research survey services. Active members who identified as physicians or fellows were invited to participate in the survey between August 2020 to November 2020.

The authors designed a self-directed questionnaire as there is no validated survey querying surgeon attitudes. Questions were reviewed by our Urogynecology Division Research committee using a modified Delphi method. Feedback was incorporated into survey design, and the design was reviewed until a consensus opinion was reached. The questions were then pilot tested by a group of urogynecologists and gynecologic oncologists to confirm the readability and comprehension of the survey.

Demographic variables were collected. Data was analyzed using SPSS Statistics. Descriptive statistics were used to summarize surgeon characteristics and to explore obstacles to surgical collaboration. Responses were compared between urogynecologists and oncologists (Tables 1 and 2) and gender (results not shown).

Results: A total of 338 surveys were included in analysis with 158 urogynecologists and 226 gynecologic oncologists. Demographics are shown in Table 1. 330 (96.5%) of respondents perform concurrent surgery with another specialty, and 107 (31.3%) are performing ≥10 concurrent procedures annually (Table 2). In the absence of contraindications, 22.2% of those surveyed would recommend staging the procedures, and 77.8% would recommend performing a concomitant surgery. Oncologists were more likely to recommend a staged procedure (28% vs 10.1%, $P < 0.001$), as were male surgeons of both specialties (44% vs 31%, $P < 0.001$). 71.7% of all respondents listed logistics as their primary concern for doing a combined procedure. When comparing groups, urogynecologists reported greater concerns about use of mesh implants, chemotherapy/radiation effect on healing, and financial reimbursement. Oncologists were significantly more concerned about delays in treatment and future surveillance. Additional obstacles included concerns about exposing surgical sites to malignant cells, preference for maturation of scars prior to additional procedures, and concerns about large masses potentially masking or contributing to pelvic floor symptoms. While 38% of surgeons were concerned with the added risk of an additional procedure, when shown evidence that concurrent procedures did not have an increased risk, only 23.4% of surgeons would consider doing more combined cases.

Conclusions: Based on our results, 22.2% of urogynecologists and oncologists prefer staging surgeries. The most common barrier to a combined procedure was logistics. Urogynecologists were more concerned about the effects of cancer treatments on healing, the use of mesh implants, and financial reimbursements as compared to gynecologic oncologists. Delays in treatment was a significantly greater concern in the oncology group.

Table 1: Demographics

		Urogynecologists N=158	Gynecologic Oncologists N=226	p-value
Gender	Male	49 (33.3)	101 (47.2)	0.009
	Female	98 (66.7)	113 (52.8)	
Years in practice	0-5 years	55 (37.7)	66 (31.1)	0.527
	5-10 years	21 (14.4)	38 (17.9)	
	10-15 years	20 (13.7)	23 (10.8)	
	15-20 years	14 (9.6)	22 (10.4)	
	20+ years	36 (24.7)	63 (29.7)	
Continent	North America	144 (97.3)	207 (97.6)	0.696
	South America	1 (0.7)	1 (0.5)	
	Europe	1 (0.7)	1 (0.5)	
	Asia	0	2 (0.9)	
	Africa	1 (0.7)	0	
	Australia/Oceania	1 (0.7)	1 (0.5)	
Practice region	Northeast	41 (29.5)	48 (23.8)	0.080
	Midwest	37 (26.6)	39 (19.3)	
	South	36 (25.9)	77 (38.1)	
	West	25 (18)	38 (18.8)	
Practice setting	Private Practice	20 (13.5)	30 (14)	0.224
	Academic based practice	91 (61.5)	127 (59.3)	
	Community with university affiliation	20 (13.5)	43 (20.1)	
	Military/Government	4 (2.7)	1 (0.5)	
	Multispecialty	4 (2.7)	7 (3.3)	
	Managed Health Organization	6 (4.1)	3 (1.4)	
	Other	3 (2)	3 (1.4)	

Data reported as N(%)

Table 2: Surgeon Attitudes

		Total	Urogynecologists N=158	Gynecologic Oncologists N=226	p-value
Recommendation	Concurrent	263 (77.8)	120 (88.9)	143 (70.4)	<0.001
	Staged	75 (22.2)	15 (11.1)	60 (29.6)	
Frequency of concurrent procedures	1-3 per year	92 (26.9)	42 (31.1)	50 (24.2)	0.564
	4-6 per year	68 (19.9)	25 (18.5)	43 (20.8)	
	7-9 per year	63 (18.4)	23 (17)	40 (19.3)	
	10 or more	107 (31.3)	42 (31.1)	65 (31.4)	
	I do not perform concurrent procedures	12 (3.5)	3 (2.2)	9 (4.3)	
Referral pattern	I refer to others to coordinate joint cases	85 (25.8)	19 (14.4)	66 (33.3)	<0.001
	Others refer to me to coordinate joint cases	78 (23.6)	49 (37.1)	29 (14.6)	
	I refer as often as I receive referrals for joint cases	166 (50.3)	64 (48.5)	102 (51.5)	
Potential barriers	Logistics (Scheduling, coordinating, etc)	276 (71.7)	106 (71.6)	170 (79.4)	0.086
	Financial Reimbursement	34 (8.8)	24 (16.2)	10 (4.7)	<0.001
	Delay in treatment	147 (38.2)	33 (22.3)	114 (53.3)	<0.001
	Added risk	130 (33.8)	51 (34.5)	79 (36.9)	0.632
	Postoperative complications	74 (19.2)	29 (19.6)	45 (21)	0.740
	Chemotherapy or radiation effects on healing	161 (41.8)	79 (53.4)	82 (38.3)	0.005
	Concerns about mesh implants	158 (41)	75 (50.7)	83 (38.8)	0.025
	Concerns about surveillance	35 (9.1)	20 (13.5)	15 (70)	0.040
	None	11 (2.9)	8 (5.4)	3 (1.4)	0.029
	Other	17 (4.4)	3 (2)	14 (6.5)	0.046

Data reported as N(%)

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Scientific Salon 84

HOW MUCH TRENDELENBURG IS ENOUGH? ADEQUACY OF LAPAROSCOPIC PELVIC VISUALIZATION BY DEGREE OF REVERSE TILT

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Objective: The aim of this study is to correlate the minimum degree of Trendelenburg with adequacy of visualization of the three anatomic landmarks during gynecologic surgery: anterior cul-de-sac, posterior cul-de-sac, and sacral promontory during gynecologic surgery.

Methods: We recruited 20 female patients who underwent laparoscopic gynecologic procedure, with or without robotic assistance, from the Urogynecology clinic. They were place in Trendelenburg position starting from 0 to -30 degrees with an increment of -5 degrees. A smartphone application was used to measure the degree of the tilt of the bed or a bed with built in measurement function was used. The pelvic anatomic landmarks of the anterior cul-de-sac, posterior cul-de-sac, and sacral promontory were identified and photographed at each change in position of Trendelenburg. Two physicians reviewed and categorized visualization as: none (1), partial (2), and (3) complete.

Results: The baseline demographics show a mean age of 60 with an average body mass index (BMI) of 30.79. Sacrocolpopexy was performed in 80% of the cases and hysterectomy was completed in 40% of the cases. Complete visualization of the three landmarks were seen mostly at -30 degree. The anterior cul-de-sac was visualized completely at a lower bed tilt starting at 0 degree. Complete visualization of three landmarks was achieved at -20 degree with anterior cul-de-sac (65%), posterior cul-de-sac (25%), and sacral promontory (5%). Adhesions was found in 6 patients.

Conclusions: The study found that negative 30 degree tilt was needed to get complete visualization of the three landmarks for most subjects. At a reverse tilt of 20 degrees, all three landmarks were seen. The anterior cul-de-sac can be seen with the patient in less of a tilt compare to the posterior cul-de-sac and sacral promontory. Adhesions can obstruct the visualization of pelvic anatomy needed to complete certain gynecologic or urogynecologic procedures.

TABLE 1. Demographic and Clinical Characteristics

	% (n)
Age (mean)	60.0
Race	
American Indian or Alaska Native	10.0% (2)
Black or African American	5.0% (1)
Asian	14.3% (1)
White	80.0% (16)
BMI (mean)	30.79
Current smoker	11.1% (2)
Robotic-assisted	45.0% (9)
Sacrocolpopexy	80.0% (16)
Hysterectomy	40.0% (8)

TABLE 2. Complete visualization by degrees of Trendelenburg

	Angle (degrees)						
	0	-5	-10	-15	-20	-25	-30
Anatomic structure							
Anterior cul-de-sac	1 (5%)	2 (10%)	5 (25%)	11 (55%)	13 (65%)	15 (75%)	17 (85%)
Posterior cul-de-sac	0 (0%)	0 (0%)	0 (0%)	0 (0 %)	5 (25%)	7 (35%)	9 (45%)
Sacral promontory	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (5%)	4 (20%)	9 (45%)

Disclosures: Linh Do: None, Kyle Mock: None, Halei Wong: None, Trang Pham: None, Lieschen Quiroz: None, Edgar LeClaire: None

Scientific Salon 85
COST-EFFECTIVENESS OF MIDURETHRAL SLING TO REDUCE INCONTINENCE AFTER VAGINAL PROLAPSE REPAIR: RESULTS OF THE OPUS RANDOMIZED TRIAL

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Objective: A prophylactic midurethral sling placed at the time of prolapse surgery can lower the rate of subsequent urinary incontinence. We assessed the cost-effectiveness of prophylactic midurethral sling to reduce incontinence after vaginal prolapse repair.

Methods: Economic assessment was collected from the OPUS (Outcomes Following Vaginal Prolapse Repair and Midurethral Sling) randomized trial, in which 337 women without symptoms of stress urinary incontinence and with anterior prolapse were randomly assigned to receive either a midurethral sling or sham incisions during vaginal prolapse surgery. Cost-effectiveness analysis is from the societal perspective to include both patient and health care system costs. Primary within-trial analysis is generated for one year and secondary decision analysis is performed for 5 years. Costs are in 2020 U.S. dollars. Effectiveness was measured in quality adjusted life-years (QALYs) and presence of urinary incontinence (stress, urge, or mixed). We calculated incremental cost-effectiveness ratios and cost-effectiveness acceptability curves.

Results: One-year societal costs were higher for the midurethral sling group than for the sham incision group ($18,170 [95% CI $16,420-$19,920] vs. $15,700 [95% CI $14,110-$17300], P = 0.041). However, at 5 years, the societal costs were similar for the two groups ($9,910 [95% CI $7,130-$12,690] vs. $11,590 [95% CI $9,980-$13,200, P = 0.302). Five-year costs were lower due to reductions in personal care costs and productivity loss associated with incontinence, which offset healthcare costs. The change in QALY from baseline was similar for the sling group and sham group at 1 year (0.04 [95% CI 0.02-0.06 vs. 0.03 [95% CI 0.02-0.05], P = 0.54) and 5 years (0.21 [95% CI 0.11-0.31] vs. 0.18 [95% CI 0.08-0.27], P = 0.63). The incremental cost-effectiveness ratio for prophylactic midurethral sling was $309,620/QALY at 1 year, while 5 years, midurethral sling was the dominant strategy, with lower costs and higher QALY. At one year, urinary incontinence was more common in the sham group patients (43.0%) than in the sling group patients (27.3%) (P = 0.002). The cost to prevent one case of urinary incontinence at 1 year was $91. The probability that concurrent prophylactic midurethral sling is cost-effective relative to vaginal prolapse repair alone is 24% at one year and 73% at five years given a willingness-to-pay value of $150,000/QALY.

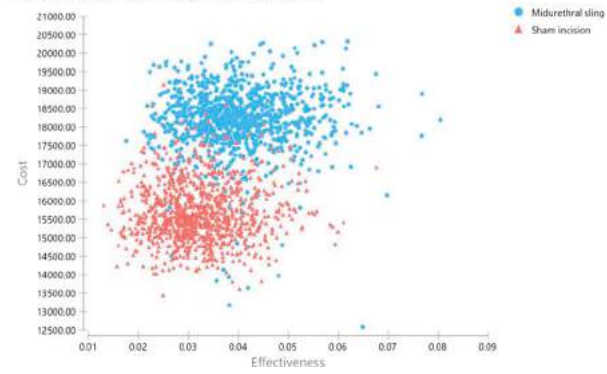
Conclusions: Prophylactic midurethral sling placed during vaginal prolapse surgery reduced the rate of urinary incontinence, and is cost effective at 5 years but not at 1 year.

Table 1. Effectiveness and costs by treatment group.

	Sling (N=165)	Sham (N=172)	Difference (95% confidence interval)	P value
Effectiveness measures				
Change in QALY (1-yr)*	0.040	0.032	0.008 (-0.016, 0.032)	0.536
Change in QALY (5-yr)*	0.210	0.177	0.033 (-0.104, 0.170)	0.632
UI treatment failure†	0.27	0.43	-0.16 (-0.26, -0.06)	0.002
1-year costs‡				
Healthcare costs	18,400	14,590	3,810 (2,180,5,440)	<0.001
Surgical costs	13,410	10,170	3,240	
Hospitalization**	4,510	4,110	400	
Clinic visits	150	140	10	
Adverse events	310	130	180	
Other††	20	50	-30	
Patient costs‡‡	-220	1,110	-1,330 (-3,050, 380)	0.128
Societal costs	18,170	15,700	2,470 (100, 4,840)	0.041
5-year costs				
Healthcare costs	19,040	15,270	3,770 (2,140, 5,410)	<0.001
Patient costs††	-9,130	-3,680	-5,450 (-8,230, -2,680)	<0.001
Societal costs	9,910	11,590	-1,680 (-4,900, 1,540)	0.302

*QALY: quality-adjusted life-years. Measured as change in QALY from baseline as described in Methods using HUI-3 from baseline, 3 months, and 12 months. Five-year QALY estimated by extrapolating from 1-year HUI-3 values. QALYs were discounted using 3% annual discount rate.
†UI: urinary incontinence. Rate of urinary incontinence failure in each group.
‡All costs are rounded to the nearest $10.
**Included additional hospitalization, procedures, and diagnostic testing.
††Included other treatments such as medications and physical therapy.
‡‡Includes days out of work following surgery, additional missed work days, missed hours of house chores, additional loads of laundry, additional items dry cleaned, number of paper towels used for urinary leakage, number of panty liners used for urinary leakage, number of menstrual pads used for urinary leakage, and number of incontinence pads used. Patient costs are calculated as change from baseline.

Figure 1. Cost-effectiveness scatterplot at 1 year: cost and effectiveness pairs for 1,000 Monte Carlo simulations evaluating the cost-effectiveness of prophylactic midurethral sling at the time of vaginal prolapse repair. Each round dot represents a set of cost and effectiveness for one simulated case of prophylactic midurethral sling. Each triangle represents a set of cost and effectiveness for one simulated case of sham incision. Simulations are based on mean and standard deviations of cost and effectiveness data collected during the randomized controlled trial.



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Scientific Salon 86
OASIS PIVOTAL TRIAL TO EVALUATE THE SAFETY AND EFFICACY OF THE RENOVA ISTIM SYSTEM™ FOR THE TREATMENT OF WOMEN WITH OAB

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Objective: Refractory Overactive Bladder (OAB) patients have traditionally been treated by both Sacral Nerve Stimulation (SNS) and Percutaneous Tibial Nerve Stimulation (PTNS). Although effective, SNS is invasive and laborious, whereas repetitive PTNS is burdensome. The BlueWind RENOVA iStim™ System is a novel miniature, leadless, battery-less, implantable tibial nerve stimulator, which provides a minimally invasive therapy focusing on a patient-centric home treatment. The pulse generator implant is wirelessly powered by a wearable unit that controls the therapeutic parameters and is worn by the patient during home treatment. A Clinician Programmer is used to remotely set individual stimulation parameters and assess compliance with therapy (figure 1).

A pivotal trial is being conducted to evaluate the safety and efficacy of the RENOVA iStim System for treating refractory OAB patients.

Methods: One hundred and nighty five (195) women suffering from wet OAB will be enrolled in this prospective, single arm, open-label study. The study is being conducted at ~30 centers in the United States, Europe and Israel. The device is implanted in the lower leg during a minimally invasive procedure in which it is secured superficial to the tibial neurovascular bundle, just below the fascia. Suturing to the fascia mitigates any risk of migration and permits patients to be mobile. The implant is activated ~4 weeks after implantation. The patient is instructed to apply the wearable unit (figure 1) and perform daily treatments at home for 30-120 minutes per day. Voiding diary data, quality of life questionnaires and patient satisfaction questionnaires are collected at 6 and 12 months after device activation and are compared to baseline.

Results: A total of 41 patients, mean age 60.15 (SD: 12.3, N = 39), have been implanted with the device in 7 centers in Europe, and 7 centers in the US. The 41 implanted patients demonstrated mean baseline of 5.88 UUI/day and 10.07 voids/day.

Out of the 41 implanted patients, 13 have reached 6 months post system activation and 10 have reached 12 months. To date, no Serious Adverse Events related to the device or procedure occurred. Overall, 2 device related

AEs and 4 procedure related AEs occurred. None of the procedure related AEs were related to the surgical wound.

Conclusions: The aim of the BlueWind RENOVA iStim System is to refine the currently available therapies for refractory OAB patients, by providing a treatment that is less invasive, more durable and patient-centric. Early results appear to be promising. This implantable tibial nerve technology with wireless energy potentially offers a long-term treatment option for this chronic medical condition, without the need for any battery changes in the implantable component. This patient-controlled home stimulation may also provide longer, more frequency stimulation sessions, customizable to a patient's needs, and perhaps eliciting more rapid clinical improvement.

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Scientific Salon 87
DOES VENTRAL MESH RECTOPEXY AT THE TIME OF SACROCOLPOPEXY PREVENT POSTERIOR WALL RECURRENCE?

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Objective: The objective of this investigation is to determine whether ventral mesh rectopexy during minimally-invasive (robotic-assisted) sacrocolpopexy (RASC) prevents future posterior wall recurrence in women with pelvic organ prolapse.

Methods: This retrospective cohort study investigated 150 women undergoing minimally-invasive sacrocolpopexy (robotic approach) with or without rectopexy from December 2015 to June 2019. Patients were divided into two groups based on if rectopexy was performed (n = 41) or not (n = 109). Success of rectopexy was defined as absence of posterior vaginal wall prolapse at subsequent follow up via POP-Q assessment tool. Failure was defined as either Ap or Bp greater than point 0, or recurrent surgery required for posterior vaginal prolapse. Demographics of subjects were included. Associations between categorical variables were analyzed via Chi-Squared or Fisher's Exact as appropriate. Differences between groups of continuous variables were analyzed via Student T-test with p value set at <0.05.

Results: Demographic variables, body-mass-index, smoking status, prevalence of diabetes mellitus, and hospital length of stay were not significantly different between groups ($P > 0.05$). Patients undergoing sacrocolpopexy without rectopexy were more likely to have higher stage (i.e., Stage 4) POP (23%) versus with rectopexy (2%) pre-surgically ($P < 0.0001$). Patients undergoing rectopexy had higher Ap and Bp values than RASC alone, respectively (Ap: 0.0 ± 1.8 cm versus -1.2 ± 1.7 cm, p 0.001; Bp: 0.3 ± 2.2 cm versus -1.2 ± 1.4 cm, $P < 0.0001$) (Table 1). Failure defined by POP-Q was less in the RASC + Rectopexy cohort, however did not reach statistical significance (RASC: n = 11 (10%); RASC + Rectopexy: n = 1 (3%), $P = 0.181$) (Table 2). Failure defined by recurrent surgery was less with rectopexy, but not to a level of statistical significance (RASC: n = 9 (8%); RASC + Rectopexy: n = 0 (0%), $P = 0.114$) (Table 2).

Conclusions: The aim of this investigation was to determine whether concomitant rectopexy during minimally-invasive sacrocolpopexy prevents posterior vaginal prolapse. To our knowledge, this is the first study to compare these techniques and outcomes in question. Our study demonstrated that concomitant rectopexy during robotic-assisted sacrocolpopexy showed a trend towards lower failure and repeat surgery, but did not reach statistical significance (Failure: p = 0.181; Surgery: $P = 0.114$). These results have helped us design an appropriately powered study which will be planned in the future.

Table 1: POP-Q Values Pre-and Post-Surgery

Preoperatively				Postoperatively			
	RASC[1] alone	RASC[1] + Rectopexy	P-Value		RASC[1] alone	RASC[1] + Rectopexy	P-Value
	Mean ± SD	Mean ± SD			Mean ± SD	Mean ± SD	
Aa*	2.7 ± 1.0	1.3 ± 1.6	<0.0001	Aa	-2.7 ± 0.5	-2.7 ± 0.4	0.706
Ba*	4.5 ± 2.3	1.8 ± 2.2		Ba	-2.7 ± 0.6	-2.7 ± 0.4	0.882
C*	2.6 ± 4.6	-2.1 ± 4.5		C*	-9.3 ± 1.5	-8.4 ± 3.3	0.036
Gh	5.1 ± 1.5	4.7 ± 1.4	0.197	Gh	3.4 ± 2.2	3.3 ± 2.3	0.829
Pb*	2.5 ± 1.0	3.1 ± 1.0	0.002	Pb	2.6 ± 0.7	2.8 ± 0.7	0.226
TVL	9.6 ± 1.4	9.1 ± 1.9	0.113	TVL	9.5 ± 1.2	9.3 ± 1.0	0.200
Ap*	-1.2 ± 1.7	0.0 ± 1.8	0.001	Ap	-2.1 ± 0.8	-2.3 ± 0.9	0.496
Bp*	-1.2 ± 1.4	0.3 ± 2.2	<0.0001	Bp	-2.2 ± 0.7	-2.3 ± 0.9	0.606
D	-4.6 ± 2.3	-5.3 ± 1.1	0.236	D	n/a	n/a	

* Indicates statistically significant difference
[1]*RASC – Robotic-Assisted Sacrocolpopexy*

Table 2: Outcomes and Failures Rates

	RASC (n = 109)	RASC + Rectopexy (n = 41)	P-Value
	n (%)		
Posterior Repair Postoperatively	9 (8)	0 (0)	0.114
Failure	11 (10)	1 (3)	0.181
Other Reoperation	3 (3)	4 (10)	0.088

* Indicates statistically significant difference

Disclosures: Casey Richardson: None, Kyle Mackey: None, Karen Hagglund: None, Muhammad Aslam: None

Scientific Salon 88
THE ROLE OF BREAST CANCER TREATMENT IN PELVIC FLOOR SYMPTOMS AND SEXUAL DYSFUNCTION IN BREAST CANCER SURVIVORS

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Objective: Breast cancer treatment involves a combination of surgical resection, radiation, chemotherapy, and endocrine therapy. There is little data

regarding the role that breast cancer treatment plays in pelvic floor symptoms and inconsistent data regarding its role in sexual dysfunction. The primary aim of this study was to evaluate the role of breast cancer treatment including surgical management, radiation, chemotherapy, and endocrine therapy have in pelvic floor symptoms and sexual dysfunction.

Methods: This is a retrospective chart review with a cross-sectional component. Women 18 years of age or older with a diagnosis of breast cancer and who were enrolled in the Georgetown Medstar Research Registry (GMR2) were invited to complete the Pelvic Floor Distress Inventory 20 (PFDI-20), the Female Sexual Function Index (FSFI), and the Short Form 12. Demographic, clinical, and breast cancer treatment data were abstracted from the electronic medical record (EMR). This is a secondary analysis of a previous study using the GMR2 database.

Results: 410 women agreed to participate in the original study of which 303 (74%) returned questionnaires.

Mean age was 60.2 years (SD 10.7). Most respondents were white (72%). Mean BMI was 27.0 (SD 6.0). Median parity was 2 (IQR 0 – 2). Most women had stage II or less breast cancer. The mean time since breast cancer diagnosis was 6.1 years (SD 1.8).

126 (41.6%) of the respondents had a lumpectomy, 154 (50.8%) had a mastectomy with reconstruction, and 23 (7.6%) had mastectomy without reconstruction. Approximately half of the women received chemotherapy, and approximately 75% of women had exposure to adjuvant endocrine therapy.

Women were stratified into groups based on surgical treatment of their breast cancer (i.e. lumpectomy, mastectomy with reconstruction, and mastectomy without reconstruction). Women who underwent mastectomy with reconstruction were younger, but otherwise the groups were similar. Women who underwent lumpectomy were more likely to undergo radiation and less likely to have received chemotherapy. There were no differences between the groups regarding exposue to adjuvant endocrine therapy, but women who underwent lumpectomy were more likely to take an aromatase inhibitor.

The median scores for the PFDI-20 and FSFI for the entire cohort was 21.9 (IQR 7.3 – 49.0), and 22.1 (IQR 14.2 – 26.1). There was no difference in the composite scores between the treatment groups. Women who underwent lumpectomy had lower FSFI scores. On regression analysis, women who underwent mastectomy with reconstruction had 42% higher UDI-6 scores than women who underwent lumpectomy ($p = 0.029$). There were no significant factors associated with POPDI-6 scores, CRADI-8 scores, or FSFI scores. Patients with stage IV breast cancer had lower SF-12 Physical Component Scores compared to those with Stage 0.

Conclusions: Breast cancr survivors experience pelvic floor symptoms and sexual dysfunction. Women who underwent mastectomy with reconstruction had more urinary symptoms while those who underwent lumpectomy had more sexual dysfunction. There were no differences between the groups in terms of composite FSFI scores, but all groups were at high risk of sexual dysfunction based on median score. Chemotherapy and endocrine therapy were not associated with higher PFDI-20 composite or subscores, lower FSFI scores, or lower SF-12 scores. Breast cancer care has improved survival necesitating a greater need for attention to the short and long-term quality of life of women during and after treatment.

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Scientific Salon 89

SURGICAL OUTCOMES FOR BREAST CANCER SURVIVORS UNDERGOING PROLAPSE AND ANTI-INCONTINENCE SURGERY

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Objective: There will be 4.9 million breast survivors in the United States by 2030. Adjuvant endocrine therapy (ET) with selective estrogen receptor modulators (SERM) or aromatase inhibitors (AI)have been associated with prolapse and urinary incontinence and may predispose breast cancer survivors to failure after surgery. The primary aim of this study was to calculate recurrence rate of breast cancer survivors undergoing prolapse and incontinence procedures and evaluate risk factors for recurrence. Secondary aims were to evaluate complications, 42-day readmissions, and 42-day re-operations for breast cancer survivors undergoing prolapse and incontinence.

Methods: This is a retrospective chart review with a cross-sectional component. Women with a diagnosis of breast cancer or carcinoma in situ by ICD-9 or ICD-10 between January 2008 and December 2019 were identified in the electronic medical record (EMR). Their medical records were then queried for CPT codes consistent with FPMRS surgery for prolapse and sling procedures. Women were excluded if they had FPMRS prior to their breast cancer diagnosis. The EMR was queried for demographic data, intraoperative complications, 42-day post-operative complications, and 42-day readmissions. Women were then contacted and asked to complete a PFDI-20, PISQ-IR, PGI-I, and PGI-S. Failure was defined a priori as a composite of patient complaint after treatment, retreatment for similar symptoms after surgery, and/or positive answer on follow-up questionnaire.

Results: 169 women were included in the final analysis. Mean age was 72.4 (SD 11.5). Most women were white. Mean BMI was 28.2 (SD 5.7).

141 (83%) women underwent prolapse repair, and 97 (57%) had a sling placed, 69 of which were performed with a concomitant prolapse procedure. 58 women (34%) were taking endocrine therapy at the time of surgery.

42 (29%) women underwent sacrocolpopexy, 40 (28%) underwent an obliterative procedure, 37 (26%) underwent USLS 6 (4%) patients underwent SSLF, and 16 (11%) underwent an isolated anterior and/or posterior repair without an apical suspension. Mean follow up time from index surgery was 14.6 months (SD 20.8).

22 women had a recurrent prolapse (15.6%). The failure rate was 16.7% (7) for sacrocolpopexy, 12.5% (5) for obliterative procedures, 16.2% (6) for USLS, 50% (3) for SSLF, and 6.25% (1) for isolated anterior/posterior repairs. There were no statistical differences in the failure rates for the procedures (P = Pearson 0.1472).

Of the 141 patients undergoing prolapse repair, 44 (31.21%) were on endocrine therapy were at the time of surgery. Of the 22 patients who had a POP recurrence, 7 (4.96%) were on ET at the time of surgery. ET was not found to be associated with POP recurrence ($P = 0.005$).

97 slings were performed, 69 of which were performed with a concomitant prolapse procedure. Seven patients (7.2%) had a recurrence of SUI. Of the 7 patients that had a recurrence of SUI, only 1 patient (1.03%) was on endocrine therapy at the time of surgery compared. ET was not associated with SUI recurrence in our analysis.

Women on endocrine therapy had 8.6% chance of complication compared to 13.5% for women not on endocrine therapy ($P = 0.3498$). Most complications were UTIs, and there were no differences in the Clavien-Dindo classification of complications between the two groups.

Endocrine therapy at the time of surgery was not associated with intraoperative complications ($P = 0.304$), 42-day post-operative complications ($P = 0.468$), or 42-day readmissions ($P = 0.083$).

Of the 169 women included in the final analysis, we were able to contact 95 of these women (56%), and 78 agreed to participate in the questionnaire portion of the study. We received 41 questionnaires for a response rate of 52%. The mean PFDI-20 score was 76.2 (SD 77.7). Mean POPDI, CRADI, and UDI scores were 14.3 (SD 17.9), 32.6 (SD 35.9), and 29.3 (SD 36.5), respectively. Over half of the respondents were not sexually active. The vast majority of respondents felt better or very much better and were satisfied or very satisfied after surgery.

Conclusions: Women with a history of breast cancer who underwent prolapse and sling procedures for incontinence had similar recurrence rates to those cited in the general population. Endocrine therapy in our study was not associated with recurrence of prolapse or incontinence after index surgery. Endocrine therapy was not associated with intraoperative complications, post-operative complications, 42-day post-operative complications, or 42-day readmissions.

Disclosures: Jon Pennycuff: None, Joanna Orzel: None, Lee Richter: None

Video 1
ROBOTIC BURCH COLPOSUSPENSION: ANATOMICAL AND TECHNICAL CONSIDERATIONS

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Objective: The objectives of this video are to review the history of the Burch procedure, to describe the anatomy of the retropubic space, and to discuss a robotic technique for colposuspension, including technical considerations aiming to reduce the risk of lower urinary tract and neurovascular injury.

Methods: This video includes three portions. First, the Burch procedure, along with its subsequent modifications, are discussed. Second, we review the anatomy of the retropubic space utilizing dissections from unembalmed cadavers. Third, we demonstrate a robotic colposuspension technique and highlight key procedural steps to optimize safe dissection in the retropubic space, adequate suture placement, and avoidance of surgical complications.

Results: In 1961 Dr. John Burch described his colposuspension technique. Modifications to this procedure have subsequently been described in 1976 by Dr. Emil Tanagho and in 2003 the Colpopexy and Urinary Reduction Efforts (CARE) trial described a standardized technique, which resembles the robotic technique we describe in this video. Key structures are highlighted in the retropubic space including the course of the obturator nerve and obturator vessels, the external iliac artery and vein, dorsal vein of the clitoris, vesical venous plexus and inferior hypogastric nerve fibers. Relevant distances of these critical structures to the placement of the Burch sutures are defined. Discussion of our surgical technique begins with a novel method of suture assembly, as well as needle management aimed to reduce needle loss in the abdominopelvic cavity. A retropubic dissection is performed again highlighting the location of the bladder, urethra and neurovascular structures. The colposuspension sutures are placed in a distal to proximal fashion at the levels of the midurethra and urethrovesical junction, respectively, lateral to the urethra and medial to the arcus tendineus fascia pelvis. A vaginal assistant ensures adequate depth of suture placement, and limits elevation of the vaginal wall during suture fixation to the pectineal ligament, ultimately preventing urethral compression and obstruction.

Conclusions: When performing a robotic modified-Burch colposuspension, thorough knowledge of the retropubic space and the application of standardized techniques aim to reduce the risk of injury, and optimize procedure efficiency and reproducibility.

Disclosures: Erryn Tappy: None, Marlene Corton: None

Video 2
MANAGEMENT OF ADVANCED PROLAPSE INCLUDING A BOWEL OBSTRUCTION: EXPANDING THE ROLE OF TRANSVAGINAL SURGERY

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Objective: (1) To review a case of concomitant advanced prolapse and partial small bowel obstruction, with intraoperative findings requiring a bowel resection; (2) Outline our surgical approach to the patient's prolapse repair and small bowel resection via a transvaginal approach.

Methods: The patient is an 82-year-old female who was transferred from an outside hospital for advanced prolapse, and a small bowel obstruction with possible transition point associated with the prolapse. Her history was notable for a history of muscle-invasive bladder cancer that was treated with a radical cystectomy and ileal conduit. She had previously tried pessaries for her prolapse, which were all expelled. She was not sexually active, with no desires for future vaginal coital activity. On exam, she had an 11 cm prolapse with chronic skin changes and bowel palpated within; the prolapse was all from the anterior vaginal wall. After conservative management of her bowel obstruction, she was taken to the operating room for reduction of the bowel obstruction and a colpocleisis. During the transvaginal procedure, we inspected what was contained in the prolapse with intraperitoneal entry. There was significant induration and a section of small bowel was adherent to the prolapse. Colorectal Surgery was consulted. Via the vaginal incision, they surveyed the bowel and deemed a transvaginal small bowel resection feasible given the bowel lesion was isolated. A 20 cm stapled small bowel resection and re-anastomosis was performed, and the bowel elevated into the peritoneal cavity. A modified LeFort colpocleisis was performed to address her prolapse, given she previously had a supracervical hysterectomy.

Results: Postoperatively, the patient developed an ileus which was managed conservatively with a nasogastric tube. She achieved return of bowel function by postoperative day 5 and was discharged on postoperative day 6. At 6 weeks she reported normal bowel function and had no evidence of prolapse recurrence on exam.

Conclusions: We present a case of incidental bowel pathology during vaginal prolapse surgery, requiring a small bowel resection transvaginally. This case demonstrates the feasibility of this procedure when working with a multi-disciplinary team and when bowel pathology is localized to the area of prolapse.

Disclosures: Cassandra Kisby: None, Scott Kelley: None, Brian Linder: None

Video 3
ROBOTIC REPAIR OF COMPLEX URETEROVAGINAL AND VESICOVAGINAL FISTULAS

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Objective: We present surgical considerations for the robotic repair of complex ureterovaginal and vesicovaginal fistulas.

Methods: A 49-year-old woman with history of an abdominal hysterectomy for a fibroid uterus presented with insensible urine leakage. On examination a defect was noted at the vaginal cuff. Preoperative imaging was indicative of a vesicovaginal fistula with possible ureteral involvement. In the operative room a catheter placed in the left ureter was seen to traverse the vaginal defect, indicating a ureterovaginal fistula. A robotic approach to repair was performed, with a vesicovaginal fistula repair, ureteroneocystotomy and a psoas hitch. First, the vaginal cuff and bladder were opened near the defect and the vesicovaginal plane was developed. The left ureter was dissected off the vaginal cuff, and the vaginal defect was closed with an absorbable suture. A ureteral catheter was placed in right ureter, and then the cystotomy closed with an absorbable suture. The left pelvic side wall was opened and left ureter mobilized, with end freshened and spatulated for attachment. An intentional cystotomy was made and a ureteral catheter passed through the cystotomy to the left ureter, which was then sutured through to the bladder dome. The left psoas muscle was exposed and silk suture used for a psoas hitch, to reduce the tension on the ureteral reimplantation.

Results: The patient recovered well after surgery and was discharged with a transurethral foley and ureteral catheters for four weeks, after which she underwent a CT urogram which demonstrated no evidence of fistula. She had her ureteral catheters removed during cystoscopy. She continues to recover and at eight weeks after surgery she has no evidence of recurrence.

Conclusions: In this case we review the patients pre-operative work up, and the literature and terminology regarding ureterovaginal and vesicovaginal fistulas. Surgical considerations for repair include the importance of a tension free reanastamosis, creation of a tunnel through the detrusor muscle to reduce reflex, and ensuring adequate revitalized tissue edges for closure.

Disclosures: Katherine McDonald: Caldera Medical Inc: Grant/Research Support: Self , Erica Lai: None, Benjamin Schwartz: None, Peter Finamore: None

Video 4
GIBSON INCISION: UNDER-UTILIZED IN UROGYNECOLOGY

K. HINES[1], A. El Haraki[2], G. Badlani[2]. *Wake Forest School of Medicine*[1], *Wake Forest Baptist Medical Center*[2]

Objective: The primary aim of this video is to highlight an under-utilized surgical approach in Urogynecology: the Gibson incision. This is an abdominal, extraperitoneal approach to surgery involving the distal ureter.

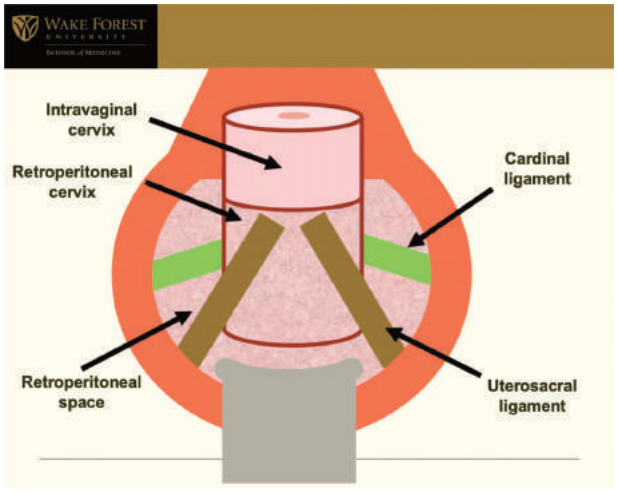
Methods: We performed a literature review to provide general information on the efficacy, risks, and comparative benefits of the Gibson incision. Our video demonstrates the key steps in performing this incision and elaborates on the technique including method of dissection, anatomy and applicability in Urogynecology. Live and cadaveric dissection are showcased.
Results: The Gibson incision is a well-known approach in renal transplantation and urologic surgery for disease of the distal ureter. This surgical video demonstrates the technique so it may be added to the urogynecologist's arsenal for planned open ureteral reimplantation. This incision allows for an extraperitoneal approach to familiar anatomy. The surgeon is able to use the psoas hitch and/or Boari flap if needed.
Conclusions: This video demonstrates the Gibson incision and elaborates on its use for planned abdominal ureteral reimplantation.

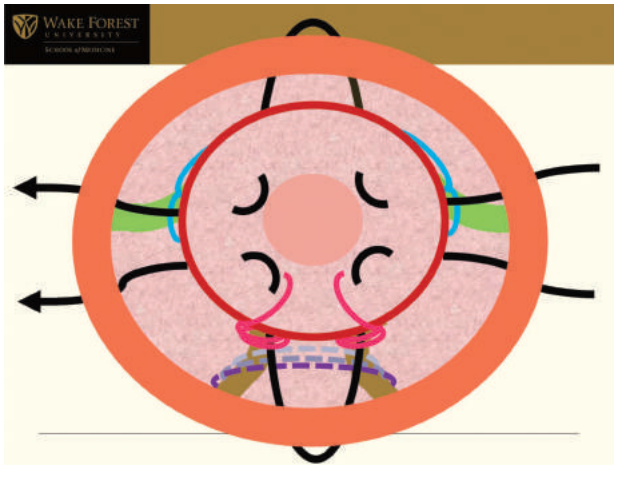
Disclosures: KATHERINE HINES: None, Amr El Haraki: None, Gopal Badlani: None

Video 5
THE MANCHESTER-FOTHERGILL PROCEDURE WITH MODIFIED STURMDORF CERVICAL SUTURING, A VIDEO ON AN EFFECTIVE SURGICAL OPTION FOR UTERINE PROLAPSE WITH CERVICAL ELONGATION

A. Plair[1], C. Matthews[2], K. Hines[3]. *Stony Brook University Hospital[1], Wake Forest Baptist Health[2], Wake Forest School of Medicine[3]*

Objective: The Manchester-Fothergill procedure is an established surgical option for uterovaginal prolapse repair with cervical elongation but it is underutilized in the United States from a lack of exposure and experience with the procedure. The primary objective of this video is to highlight the role that the Manchester-Fothergill procedure can have in prolapse repair and to demonstrate an effective technique for the procedure.





Methods: We conducted a literature review on the Manchester-Fothergill procedure to provide information on the techniques, risks, benefits, and efficacy of the procedure. Two cases of uterovaginal prolapse managed surgically via the Manchester-Fothergill procedure were recorded and placed into a video that was edited and narrated. The traditional Manchester-Fothergill procedure involves a partial trachelectomy in addition to the identification, transection, and re-fixation of the uterosacral and cardinal ligaments. Our technique is to perform this procedure along with modified Sturmdorf suturing to attach shortened uterosacral ligaments to the cervical remnant.
Results: The Manchester-Fothergill has comparable efficacy to hysterectomy-based native tissue repairs. The procedure has the advantage of being a quicker procedure with fewer intraoperative complications than hysterectomy-based repairs. As a uterine preservation surgery, there is the risk of postoperative uterine pathology developing. There are a few reports of pregnancies after this procedure.
Conclusions: The Manchester-Fothergill procedure is an effective surgical option for patients with uterine prolapse and cervical elongation. This technique can be utilized by pelvic surgeons to increase their ability to provide patients with uterine preservation surgical options.

Disclosures: Andre Plair: Neomedic: Grant/Research Support: Self , Catherine Matthews: None, KATHERINE HINES: None

Video 6
A SURGEON'S PERSPECTIVE ON VAGINAL WALL HISTOLOGY

T. Brueseke[1], E. Frisch[2], N. Sudol[3], M. Han[1]. *University of California, Irvine[1], UC Irvine School of Medicine[2], Kaiser Permanente Orange County and University of California, Irvine[3]*

Objective: A detailed understanding of vaginal wall histology is critical for the performance of gynecologic surgery. Medical school curricula expose students to the histology of the vaginal wall, however, a deeper exploration of benign histology is often absent from residency training. The objective of this video is to offer surgeons and residents a high yield, clinically orientated, educational aid to understanding vaginal wall histology.
Methods: We performed an in-depth review of the histology that is relevant to pelvic floor reconstructive procedures involving the vaginal wall. We studied the different layers of the vaginal wall and developed a script to effectively teach and demonstrate these layers to support medical student, resident, and fellow education. We obtained images of the different layers of the vaginal wall from patient specimens and open image sources. Patient-consented video clips were filmed during surgical cases by faculty.
Results: This video highlights the key histologic layers within the vaginal wall, which need to be known before they can be recognized intraoperatively. We discuss the relevance of the stratified squamous epithelium, lamina propria, muscularis, and adventitia in the vaginal wall and the clinically relevant structures found within each layer. Surgical clips from a colpocleiesis, mesh exposure resection, and sacrocolpoplexy are included to demonstrate different tissue planes. This video enables surgical learners to review vaginal wall histology and understand its relevance in a surgical setting, potentially assisting a surgeon to recognize more effectively these planes intraoperatively.
Conclusions: Video abstract

Disclosures: Taylor Brueseke: None, Emily Frisch: None, Neha Sudol: None, Min Han: None

Video 7
A LOW-COST, REUSABLE MODEL FOR JUST-IN-TIME SIMULATION OF OBSTETRIC ANAL SPHINCTER INJURY REPAIR

N. Roselli[1], M. Vega[2], R. Rolston[3]. *Albert Einstein College of Medicine[1], Montefiore Medical Center[2], Albert Einstein College-Montefiore Medical Center[3]*

Objective: The low incidence of obstetric anal sphincter injuries (OASIS) makes adequate training in their repair during residency challenging and

necessitates the use of high-quality simulation models. Many simulation models of OASIS repair are costly, require multiple materials, and may not be reusable. In the case of the admittedly high-quality beef-tongue model, materials sourcing may be challenging, and the materials also require refrigeration storage. These limitations make just-in-time review on Labor and Delivery (L&D) challenging if not impossible. Other authors have demonstrated that low-cost, low-tech simulation models perform as well as more resource-intensive models with respect to improving resident confidence and procedural ability in performing these repairs. Here we present a reusable, minimal resource, low-cost model designed for just-in-time teaching of both the end-to-end and overlapping techniques for external anal sphincter repair.

Methods: All materials for this model can be found on most L&D units. The construction of this model requires a blue surgical towel, silk tape, 0-vicryl suture on a CT-1 or CT-X needle, a needle driver, pick-ups with teeth, suture scissors, 3 hemostats, and multicolored permanent markers (if desired). The blue surgical towel is rolled lengthwise, and the ends are secured with silk tape. We have found it is useful to place a single suture at the midpoint to maintain the rolled shape. The relevant sections of tape on the ends of the blue towel may be color-coded with permanent markers to denote the anterior, posterior, superior, and inferior aspects of the external anal sphincter. The sphincter repair techniques are then carried out as demonstrated in the accompanying video. The model may be reused indefinitely by replacing the tape on the ends.

Results: N/A

Conclusions: The surgical towel model for OASIS repair is a low-cost, easily portable, and indefinitely reusable model designed for just-in-time procedural review. We believe this can be an unobtrusive addition to any L&D unit to enhance trainee comfort and proficiency in performing these crucial repairs.

Disclosures: Nicole Roselli: None, Marisa Vega: None, Renee Rolston: None

Video 8
IMPLEMENTING A NOVEL, PATIENT-TAILORED, PERI-OPERATIVE COUNSELING BUNDLE: AN FPMRS QUALITY IMPROVEMENT INITIATIVE

K. Falk[1], I. Joseph[1], J. Gao[1], J. Harroche[2], R. Kelley[3], N. Metcalfe[1], G. Northington[1]. *Emory University School of Medicine[1], Emory University Hospital[2], Emory University[3]*

Objective: Pelvic reconstructive surgical counseling is complex. A significant amount of information is squeezed into a short visit, including descriptions of multiple procedures, risks, benefits, and recovery expectations. One strategy to increase patient understanding is to utilize printed counseling leaflets. However, due to the multiple possible permutations of surgical options, it can be cumbersome to compile individualized counseling. Our FPMRS division developed a quality improvement (QI) initiative to address this issue. This led to the building of a customizable, electronic medical record (EMR)-based peri-operative printed counseling bundle for pelvic reconstructive surgery, with the goal to streamline and enhance our surgical counseling. The aim of this video abstract is to demonstrate the system and how it integrates into physician workflow, as well as assess patient and surgeon satisfaction.

Methods: A total of 35 interconnected documents were developed by our FPMRS division, referencing the most up-to-date literature, and emphasizing functional outcome expectations. Documents were edited professionally to a fifth grade reading level, and integrated into both Cerner and Epic EMR systems used by our institutions.

Building an individualized printed counseling packet entails selecting from each of four categories: (1) "Pre-operative counseling" outlines goals of surgery, functional outcome expectations and general risks of surgery; (2) "Main procedure" describes the central surgical procedure and its specific risks and benefits; (3) "Possible procedures," describes the procedures that might be performed based on intra-operative findings; (4) "Post-operative counseling" reviews recovery expectations. Documents encompass the full breadth of FPMRS practice, including vaginal, laparoscopic, obliterative, native tissue, and mesh-augmented surgery.

Surveys were administered to gauge surgeon and patient satisfaction. FPMRS faculty and fellows (n = 8) completed an e-survey about their satisfaction with printed counseling workflow before and after QI initiative implementation. Patients who received the new counseling packets (n = 15) completed a survey assessing understanding and satisfaction with written counseling. Institutional IRB approval was obtained for chart review and survey implementation.

Results: Prior to our intervention, 71% of surgeons were dissatisfied with the current printed counseling resources and workflow. 71% responded that counseling was too generic and did not specifically match personal counseling style, and 57% of responded that the current written counseling inadequately addressed goals of surgery and functional outcomes. After QI implementation, 89% "agreed or strongly agreed" that they were satisfied with the new system. They reported that the new bundle improved patient care, that forms are up-to-date with current literature, and that the system fits efficiently into clinic workflow.

Patients were overall satisfied with the new printed counseling (mean of 9.2 on a 10 point linear Scale). Patients reported that after reading the counseling that they understood of the rationale for surgery, procedures to be performed, and how surgery would affect bladder, bowel, and sexual function.

Conclusions: In conclusion, this customizable peri-operative counseling bundle has overall improved both patient counseling and surgeon workflow within our practice. It is easily integrated into different EMR systems.

Disclosures: Kerac Falk: None, Ivrose Joseph: None, Joanna Gao: None, Jessica Harroche: None, Robert Kelley: None, Nina Metcalfe: None, Gina Northington: Boston Scientific: Grant/Research Support: Self

Video 9
EXCISION OF ERODED MESH FROM URETHRA WITH URETHRAL CONSTRUCTION USING A GRAFT AND A MARTIUS FLAP

A. Abdelaziz[1], M. Karram[1]. *The Christ Hospital[1]*

Objective: The objective of this video is to demonstrate the technique for excision of eroded mesh in the urethra with reconstructing the urethra using a graft and a Martius flap

Methods: Case

-70 year old with complaints of rUTI and refractory OAB
-H/O of retropubic sling in 2015
-H/O of intravesical Botox injection for OAB in 2017/2018
-Patient presented to address rUTI and OAB
-Office cystoscopy revealed mesh erosion into urethral lumen

Results: Managment of urethral erosion

1-Observation
2-Endoscopic
cystoscopic excision with endoscopic scissors, holmium laser, and transurethral resection using diathermy
3- Surgical excision
a) Partial excision: limited area of erosion with mild symptoms
b) Complete excision: in the setting of pain, larg areas of exposure, involvement of the bladder or bowel, infection

Conclusions: Key to successful outcome of urethral reconstruction

1- Complete removal of foriegn body/mesh from urethral lumen and wall
2- Tension free closure of urethral defect
3- Provide appropriate blood supply to allow for adequate healing

Disclosures: Ahmed Abdelaziz: None, Mickey Karram: None

Video 10
PREVENTIVE EXERCISES TO REDUCE WORK-RELATED MUSCULOSKELETAL DISORDERS FOR VAGINAL SURGEONS

E. Sappenfield[1], K. Renner, S. Bourassa[2], C. LaSala, E. Tunitsky-Bitton[1]. *Hartford Hospital[1], Hartford HealthCare[2]*

Objective: To develop an exercise program aimed to reduce work related musculoskeletal disorders (WMSDs) and mitigate injury risk for vaginal surgeons

with exercises that can be performed during intraoperative microbreaks, in between operative cases, and at home.

Methods: High volume vaginal surgeons were evaluated at a single academic institution. Surgeons completed baseline questionnaires including the Global Physical Activity questionnaire, Body Part Discomfort Scale and Questionnaire prior to and after the first vaginal operative case of the day, and the Cornell Musculoskeletal Discomfort Questionnaire. Each surgeon was evaluated by a physical therapist and biomechanist with the Selective Functional Movement Assessment, a Modified Functional Movement screen, and Kent Postural Analysis. Vaginal surgery cases were observed by the physical therapist to identify high risk positions that surgeons and assistants hold in the operating room. Based on these evaluations and observations, an exercise program was developed for intraoperative microbreaks, in between operative cases, and at home.

Results: Seven high-volume vaginal surgeons were evaluated including four attendings and three fellows. Of the participants, six were female and one was male. All surgeons operate vaginally in the standing position. All surgeons reported body discomfort following a vaginal operative case and at the end of a work week. Exercise suitable for intraoperative microbreaks include standing scapular retractions, standing deadlifts, chin tucks, and body weight squats. Exercises suitable for in between operative cases include the pelvic tilt, FABER stretch, piriformis stretch, kneeling hip flexor stretch, and seated heel and toe raises. Twenty different exercises that focus on core strength and range of motion were provided to participants for an at home maintenance program. This video presents exercises to reduce WMSDs and mitigate injury risk from vaginal surgery.

Conclusions: Work-related musculoskeletal disorders are common among high volume vaginal surgeons. Ultimately, 12% of surgeons require a leave of absence, practice modification, or early retirement due to WMSDs. Ergonomic programs and interventions are necessary to reduce WMSDs. Intraoperative microbreaks and exercises have been shown to decrease pain related to performing surgery. Specific exercises presented in this video designed by a physical therapist and trained motion specialist are easy, feasible and may reduce WMSDs.

Disclosures: Elisabeth Sappenfield: None, Kristen Renner: None, Stefanie Bourassa: None, Christine LaSala: None, Elena Tunitsky-Bitton: None

Video 11
RECURRENT PARAVAGINAL ABSCESS: AN UNUSUAL PRESENTATION OF A DISTAL ECTOPIC URETERAL REMNANT AFTER PRIOR NEPHRECTOMY

A. Merriman[1], D. Lovell[2], B. Taylor[1], K. Benjamin[3]. *Atrium Health[1], Atrium Health at Carolina Medical Center[2], Atrium Health-Cabarrus[3]*

Objective: To describe a patient with obstructed hemivagina and ipsilateral renal anomaly, or OHVIRA syndrome, and to demonstrate the surgical technique used to treat her paravaginal abscess in the setting of a distal ectopic ureter remnant.

Methods: A video case report of a single surgical patient at an academic hospital.

Results: We describe a patient who initially presented at the onset of menarche with cyclic abdominopelvic pain. She was diagnosed with uterine didelphys with an obstructed right hemivagina. She underwent a vaginoplasty, which was followed by postoperative urinary incontinence. Further work-up indicated a dysplastic right kidney with an ectopic ureter to the right vaginal sidewall, correlating with a diagnosis of OHVIRA syndrome. At age 21, She represented with chronic vaginal drainage. She underwent an extensive evaluation, including imaging as well as several diagnostic procedures: cystovaginoscopy, hysteroscopy, and laparoscopy. She was tested for sexually transmitted diseases, put on multiple courses of antibiotics, and had two drains placed due to her recurrence of drainage. When she presented to our facility, her history and imaging were concerning for an abscess secondary to a remnant distal ectopic ureter to the vagina. She underwent an office examination and vaginoscopy, confirming drainage from a right vaginal ostium. She was counseled and ultimately underwent a robot-assisted laparoscopic excision of her paravaginal abscess and right distal ectopic ureter remnant. She did well postoperatively; however, interval CT scan on post-operative day 15 demonstrated a peritoneal fluid collection, which was drained by interventional radiology. The fluid collection resolved and the drain was removed two weeks later. She has continued to do well with no recurrence of abscess or drainage.

Conclusions: In this video case report, we describe the unusual presentation of a recurrent paravaginal abscess in the setting of prior nephrectomy with partial right ectopic ureterectomy. This presentation has yet to be described in the literature. We also demonstrate the innovative and successful surgical technique used to identify and excise the paravaginal abscess and distal ectopic ureter. This presentation describes this patient's unique anatomy and highlights the importance of complete resection of an ectopic ureter to the vagina at the time of nephrectomy due to potential risk of ascending chronic infection and abscess formation.

Disclosures: Amanda Merriman: None, Danny Lovell: None, Bernard Taylor: None, Kristi Benjamin: None

Video 12
ROBOTIC EXCISION OF TRANSOBTURATOR MIDURETHRAL SLING

D. McKee[1], H. Chapman[2], J. Yi[1], P. Magtibay[3]. *Mayo Clinic Arizona[1], Creighton University School of Medicine - Phoenix[2], Mayo Clinic[3]*

Objective: The objectives of this video are to identify indications for full transobturator (TOT) sling excision, illustrate relevant anatomy for dissection, and demonstrate techniques for full TOT sling excision in a patient with vaginal cutaneous fistula.

Methods: This video presents a case of a 65-year-old female who developed persistent, chronic mesh-related infection with formation of a sinus tract and vaginal cutaneous fistula following TOT sling insertion 15 years prior.

Long-term complications of TOT slings may necessitate complete excision or removal of the device. Persistent pain, such as groin pain, occurs in approximately 12-16% of women following TOT sling insertion with most cases resolving within a few days to weeks. If groin pain is persistent, full sling excision may be required. This may also present as dyspareunia or dysuria. Of note, it is important to rule out other causes of persistent pain including myofascial pelvic pain, chronic infection, obturator neuropathy, or bladder perforation. Mesh erosion, such as bladder perforation, requires sling excision. Although rare, mesh related infections such as sinus tract or abscess formation, as well as myositis, are also indications for sling excision.

Results: N/A

Conclusions: In conclusion, full TOT sling excision may be required for persistent pain, mesh erosion, or mesh-related infections. Thorough understanding of pelvic anatomy, avascular spaces, and the TOT sling trajectory is required for safe and efficient sling removal. Finally, approaching the sling excision through a minimally invasive abdominal route allows for excellent visualization and the ability to work in harder-to-reach places.

Disclosures: Dana McKee: None, Hannah Chapman: None, Johnny Yi: None, Paul Magtibay: None

Video Poster 1
ROBOTIC EXCISION OF RETROPUBIC MID-URETHRAL SLING ERODED INTO BLADDER WITH ASSOCIATED CALCULUS

V. Chopra[1], W. Lee[1], H. Winkler[1]. *Northwell Health*[1]

Objective: Midurethral slings are the gold standard for stress urinary incontinence. Complications after a retropubic midurethral sling are rare, and mesh erosion into the bladder or urethra occur in less than 1% of cases. Our case presents a robotic technique used to excise eroded midurethral sling mesh into the bladder and extract the associated bladder calculus.

Methods: A 65-year old female presented with complaints of gross hematuria, dysuria, incomplete bladder emptying and history of recurrent urinary tract infections for the last 2 years. She had a history of a total vaginal hysterectomy, uterosacral ligament fixation, retropubic midurethral sling and cystoscopy performed approximately 2 years ago. On examination, she was found to have a 3 mm area of vaginal mesh erosion. CT scan showed that she had a large bladder calculus and an office cystoscopy was performed preoperatively. During cystoscopy, an eroded segment of mesh was encountered at the left lateral bladder wall with associated calculus. Decision was made to proceed as a combined case with FPMRS Urology to excise the bladder mesh and stone via a robotic approach.

Results: Robotic dissection of the space of Retzius exposed the left lateral dome of the bladder. With simultaneous cystoscopic guidance, the eroded left arm of the retropubic midurethral sling was identified and excised. Associated bladder stone was extracted through a left lateral bladder dome cystotomy. The cystotomy and surrounding peritoneum were closed and the bladder calculus was removed through an extended umbilical trocar site. The patient was discharged home with foley catheter in place for 13 days and returned for removal after cystogram performed, which was negative for leak.

Conclusions: In conclusion, we found that a complex complication of midurethral sling can be managed safely via a robotic approach. This method allowed for faster recovery time, better visualization and more mesh removal. We found that concurrent cystoscopy throughout the robotic portion of procedure can help identify precise location for cystotomy creation and for faster identification of the eroded mesh. We found that using a robotic technique to remove mesh erosions even with associated large calculus can be performed and lead to successful outcomes for patients.

Disclosures: Vini Chopra: None, Wai Lee: None, Harvey Winkler: Johnson and Johnson: Expert Witness: Self, Boston Scientific: Consultant: Self, Tepha: Consultant: Self, ConTipi: Consultant: Self, Boston Scientific: Grant/Research Support: Self

Video Poster 2
SINGLE PORT ROBOTIC ASSISTED SACROCOLPOPEXY: TECHNIQUE AND TIPS

L. Griebel[1], M. Misal[2], J. Cornella[2], A. Khan[2], C. Wolter[2], J. Yi[2]. *Mayo Clinic*[1], *Mayo Clinic Arizona*[2]

Objective: Sacrocolpopexy is the most durable surgical procedure for the treatment of symptomatic pelvic organ prolapse. The single port robotic platform has recently been approved in the US for use in Urologic surgery. Innovation in robotic surgery continues to evolve, minimizing abdominal wall trauma while improving on instrumentation and technical feasibility. Identifying the appropriate procedures to utilize novel technology is important to understand the role of new surgical tools. Sacrocolpopexy procedure, when performed with supracervical hysterectomy requires extension of an incision for specimen retrieval, making it ideal for single port surgery. The technique and adaptation to new instrumentation is demonstrated in this video.

Methods: Surgical demonstration of single port robotic sacrocolpopexy.

Results: Safe and efficient completion of a complex procedure using novel surgical approach.

Conclusions: Single port robotic assisted sacrocolpopexy is a safe and effective approach to management of prolapse, and effectively reduces the required number of incisions for the patient.

Disclosures: Lauren Griebel: None, Meenal Misal: None, Jeffrey Cornella: None, Aqsa Khan: None, Christopher Wolter: None, Johnny Yi: None

Video Poster 3
REPAIR OF URETHRAL EROSION FROM AN INDWELLING CATHETER WITH PELVIC ORGAN PROLAPSE

E. Rutledge[1], A. Hsiao[1], J. Stewart[1], K. Williams[1]. *Houston Methodist Hospital*[1]

Objective: This video presents a case of female urethral erosion from a foley catheter in the setting of advanced pelvic organ prolapse. The objective of the video is to illustrate an approach for urethral reconstruction at the time of pelvic organ prolapse repair.

Methods: Surgical footage was obtained with the patient's informed consent. Video footage and educational content was edited using iMovie® software.

Results: The patient was initially managed with a pessary but the prolapse continued to progress necessitating surgical management. Surgical management was initially delayed to medically optimize the patient for multiple medical comorbidities. Short courses of foley catheter use led to an erosion of the ventral surface of the urethra. Pre-operative evaluation included cystoscopy to evaluate the extent of the defect and to determine whether the bladder neck was affected. A combined urologic and urogynecologic surgical team performed a urethral repair with local vaginal flaps, autologous fascial sling insertion, suprapubic catheter insertion, and LeFort colpocleisis.

Conclusions: Primary urethral repair of a urethral erosion injury from a foley catheter can be performed at the time of prolapse repair. The first step in evaluation was a pre-operative cystoscopy to determine the proximity of the defect to the bladder neck and evaluate the urethral sphincters. Local vaginal flap mobilization was performed to complete the repair and provided adequate vascular supply. Autologous fascial sling insertion provided an additional interposition graft to aid with integrity of the repair and treat her stress urinary incontinence. A suprapubic catheter can be used to allow for urinary diversion and aid with healing. Potential sequelae from this injury and repair include urethral stricture, vesicovaginal fistula, continued incontinence, and vaginal stenosis.

Disclosures: Emily Rutledge: None, Annie Hsiao: None, Julie Stewart: None, Kathryn Williams: None

Video Poster 4
CAN ROBOTIC SURGERY GET ANY COOLER? A SIMULATION MODEL FOR ROBOTIC CUFF CLOSURE AND SACROCOLPOPEXY

D. Vargas-Maldonado[1], J. Occhino[1], B. Linder[1]. *Mayo Clinic*[1]

Objective: Sacrocolpopexy has been shown to be an effective treatment for pelvic organ prolapse. However, mesh-related complications, including mesh exposure, occur with a frequency ranging from 2-10%. A risk factor linked to this complication includes concomitant hysterectomy. A 2-layer vaginal cuff closure at the time of concomitant hysterectomy and sacrocolpopexy may reduce the risk of subsequent mesh exposure. A simulation model was created to improve surgical skills and augment operating room experience. Our objective was to demonstrate a surgical simulation model for a robotic 2-layer vaginal cuff closure and sacrocolpopexy vaginal mesh attachment.

Methods: To create our robotic simulation model, we utilized the Advincula arch manipulator handle with a sacrocolpopexy tip attached to the ALLY Uterine Positioning System. To simulate our vagina, we used a pink, slim can cooler/coozie attached to the sacrocolpopexy tip with Velcro for stability. The uterine manipulator attached to the positioning system was placed through the pelvic inlet of a pelvic model and secured to the operating table with tape. The edges of the coozie represented the vaginal cuff following a hysterectomy. Mesh attachment was demonstrated using a precut Y-shaped polypropylene mesh. The Da Vinci Xi surgical system was used including 2 large needle drivers and a prograsp forcep.

Results: Illustrations and intra-operative footage was used to supplement the surgical steps represented in our model. The first layer of the cuff closure begins at the right vaginal apex and continues toward the left with each bite placed in a submucosal fashion resulting in the squamous edges accurately approximated and everted into the vagina. The suture does not enter the vagina, therefore minimizing exposure to vaginal contaminants. The second layer allows imbrication of the vaginal cuff to restore the continuity of the endopelvic fascia and pubocervical fascia anteriorly, the posterior peritoneum, and uterosacral ligaments. After vaginal cuff closure, a synthetic polypropylene mesh was used to simulate vaginal mesh attachment to the anterior and posterior vaginal walls. This model enables the trainee to practice these steps several times since the same mesh can be reused several times.

Conclusions: A two-layer vaginal cuff closure can reduce the risk of cuff dehiscence following robotic hysterectomy, and may reduce the risk of mesh exposure at the time of concomitant robotic hysterectomy and sacrocolpopexy. We present a single model that can be used to simulate a 2-layer vaginal cuff closure and vaginal mesh attachment. Simulation has become a critical part of education in surgical training programs as it enhances learner knowledge and improves surgical confidence and preparedness in the operative setting.

Disclosures: Darlene Vargas-Maldonado: None, John Occhino: None, Brian Linder: None

Video Poster 5
REVISION SACROCOLPOPEXY: TIPS AND TRICKS FOR OPTIMAL OUTCOMES

O. Chang[1], U. Omosigho[2], M. Fidela Paraiso[3]. *University of Washington*[1], *Cleveland Clinic Foundation*[2], *Cleveland Clinic*[3]

Objective: To review important considerations and techniques for revision sacrocolpopexy in women with recurrent pelvic organ prolapse after sacrocolpopexy

Methods: In this video, we present 5 patients with a mean age of 65 years old (range 50-74 yrs) who presented with symptomatic pelvic organ prolapse recurrence after SCP. Patients presented with recurrent prolapse at a range of 1-13 years after index SCP with multicompartment prolapse (4 apical/anterior, 1 enterocele/posterior). All 5 patients underwent revision SCP. Intraoperatively, four patients were found to have displacement of the existing mesh, while 1 patient developed had a stage 3 enterocele/rectocele that developed distal to the existing posterior mesh attachment. One patient underwent a vaginal trachelectomy at the time of revision SCP, and the mesh was attached vaginally as part of the SCP revision. The patient with the stage 3 enterocele underwent concurrent ventral rectopexy. Modification to the existing mesh was performed if indicated.

Results: Sacrocolpopexy has long-term success rates up to 78–100 %. The rate of reoperation due to recurrent prolapse is reported as 0.8 to 3% in systematic reviews. Given these low rates, there is a paucity of data specifically addressing surgical revision after SCP due to recurrent pelvic organ prolapse.

In our practice, we will consider revision sacrocolpopexy when there is a suspicion that the prior sacrocolpopexy mesh has detached from its original attachment. This may present as multicompartment prolapse, or complete prolapse recurrence. Unless the patient presents with pelvic pain or mesh complications, we do not routinely remove the existing mesh at the time of sacrocolpopexy revision. These surgeries are often challenging because of adhesions and altered anatomy from the previous sacrocolpopexy. The previous sacral arm, which can usually be palpated as a taut, "string-like" band by the assistant, can be useful for tracing towards the sacrum or towards the vagina to restore anatomy. An end-to-end anastomosis (EEA) sizer can be placed in the vagina to identify the vaginal cuff and for counter-traction. In addition, the bladder can often be draped over the vaginal cuff or tethered to the existing sacral arm. In this case, the bladder can be backfilled to facilitate dissection. All of the considerations above can be helpful to restore anatomy. If the existing sacral attachment is suboptimal, then a new sacral dissection should be made at the level of S1 of the anterior longitudinal ligament. If the existing sacral mesh is confirmed to be well attached, but there is concern for an elongated sacral arm resulting in poor tension, then the arm can be plicated with permanent sutures to shorten the sacral arm. Furthermore, in this video, we discuss two unique situations where a concurrent ventral rectopexy and a vaginal trachelectomy with vaginal mesh attachment were indicated at the time of revision sacrocolpopexy.

Conclusions: Overall, revision sacrocolpopexy requires an individualized approach. The reviewed considerations and techniques can be useful for ensuring a safe and effective outcome.

Disclosures: Olivia Chang: None, Ukpebo Omosigho: None, Marie Fidela Paraiso: None

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Video Poster 6
TENSIONING THE SACROCOLPOPEXY MESH: HOW TIGHT IS JUST RIGHT?

D. Volkin[1], C. Tarnay[2]. *University of California - Los Angeles[1], David Geffen School of Medicine at UCLA[2]*

Objective: Sacrocolpopexy is a commonly performed procedure for pelvic organ prolapse. One of the critical steps during the procedure involves setting the tension of the mesh prior to placing the anchoring sutures at the sacrum. Setting the appropriate tension involves reducing the prolapse and restoring the normal anatomy of the vagina while avoiding excessive tension, which may result in tissue ischemia or pain. Little is known about the optimal way to tension the mesh or even what "appropriate" tension is. The objective of this video is to start a thoughtful discussion surrounding mesh tensioning.

Methods: In this video, we incorporate surgical principles, existing literature, and short operative video clips in order to illustrate concepts surrounding mesh tensioning. We discuss implications of the mesh being too loose and demonstrate a technique for mesh plication. We also discuss implications of the mesh being too tight and highlight two articles pertaining to this. We review different techniques for mesh tensioning and illustrate them through video examples. Lastly, we touch on a few other patient and operative parameters as they pertain to mesh tensioning.

Results: Despite mesh tensioning being a critical step in sacrocolpopexy, little attention has been given to studying the effect of different mesh tensions on surgical outcomes. One reason for this is that it is a difficult parameter to measure objectively and therefore has not been standardized. We hope that our video helps to highlight the high clinical relevance of this step in the procedure as well as the importance of trying to study it in more depth.

Conclusions: Tensioning of the mesh is an important but poorly studied step during sacrocolpopexy. As a community, we should continue to bring this discussion forward, with the ultimate goal of perhaps having a standardized approach or at least a better understanding of what "appropriate" tension is.

Disclosures: Dmitry Volkin: None, Christopher Tarnay: None

Video Poster 7
SACRAL COLPOPEXY OR SACRAL COLPOPERINEOPEXY? A PROPOSAL FOR A CONTEMPORARY SURGICAL CLASSIFICATION SYSTEM

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Objective: Various surgeries exist to repair multicompartmental pelvic organ prolapse in the aging female population. To date, transabdominal mesh remains the most common and durable means in order to repair advanced stage apical prolapse. This has been due in part to the FDA bans on transvaginal mesh in 2019 and the growth in adaptation of robotic surgery. Transabdominal mesh has been traditionally used for apical suspension procedures, and these have been historically named as a sacrocolpopexy, sacrocolpoperineopexy, and perineopexy. However, due to the heterogeneity of surgical technique, the definition and classification of the procedure has not been formally standardized. This has made interpreting study results and outcomes in the literature challenging.

Methods: In this video we describe a proposed classification system for a sacrocolpopexy and sacrocolpoperineopexy (refer to table). A sacrocolpopexy involves dissection of the vesico-vaginal space and recto-vaginal space that either attaches mesh to the proximal or distal half of the anterior and posterior vaginal wall. A sacrocolpoperineopexy can be defined as a full anterior vaginal wall dissection with mesh attachment to the level of the urethrovesical junction, and a full posterior vaginal wall dissection with mesh attachment to the perineal body, with various methods of incorporation. This variety includes attachment of the mesh to the dorsal perineal membrane, or transvaginal attachment to the perineal body by either suture anchors or the passage of the lower edge of the posterior mesh arm.

Results: Please refer to the table.

Conclusions: Sacrocolpopexy and sacrocolpoperineopexy, is a widespread surgical procedure that currently has no standardized definition. As such, this video proposes a classification system to not only better communicate amongst pelvic reconstructive surgeons but also to better assess the clinical outcomes that occur from specific variances in repair. Ultimately, this will allow better counseling of patients on the clinical indications for each repair type, as well as the postoperative anticipated outcomes from each type of surgery. We expect this classification system will help us better understand the difference in outcomes among these different repair techniques through standardization of technique which allows more accurate interpretation of studies. Further studies should be done to assess the validity and feasibility of this classification system as well as clinical significance for patients undergoing pelvic reconstructive surgery.

Sacrocolpopexy Classification Scheme

Type	Depth of Mesh Attachment	
	Anterior Compartment (Vesico-Vaginal Space)	Posterior Compartment (Recto-Vaginal Space)
Sacral Colpopexy I	Proximal 1/2 of the Vagina	Proximal 1/2 of the Vagina; Above the peritoneal reflection
II	Down to the Urethrovesical Junction	Distal 1/2 of the Vagina; Below the peritoneal reflection
Sacral Colpoperineopexy IIIA: Abdominal	Down to the Urethrovesical Junction	Full Length of the Vagina (FLoV); To the level of the dorsal perineal membrane (DPM) (Perineal Body)
IIIB: Abdominal	Down to the Urethrovesical Junction	FLoV; To the level of the DPM with levator ani musculature incorporation
IIIC: Abdomino-Vaginal	Down to the Urethrovesical Junction	FLoV; Transvaginal suture through the perineal body (PB)
IIID: Abdomino-Vaginal	Down to the Urethrovesical Junction	FLoV; Transvaginal mesh attachment to the PB through a vaginal incision

Disclosures: Michael Shu: None, Ji Young Lee: None, Ruthia Chen: None, Abeer Eddib: None

Video Poster 8
URINARY BASEMENT MEMBRANE GRAFT AUGMENTED SACROSPINOUS LIGAMENT FIXATION

D. Luchristt[1], A. Weidner[2], N. Siddiqui[3]. *Duke University School of Medicine[1], Duke University[2], Duke University Medical Center[3]*

Objective: Since the FDA and other international governing organizations ordered discontinuation of manufacturing and distribution of surgical mesh for transvaginal pelvic organ prolapse repair, providers have limited options to offer a patient with advanced stage prolapse for whom an abdominal sacralcolpopexy is not feasible or preferred and a native tissue repair is thought to have a high risk of failure. This has prompted consideration of absorbable biologic grafts to augment transvaginal prolapse repair, but there is minimal published data to describe the technique and its outcomes. Furthermore, there is currently no FDA-approved product marketed for this application, requiring surgeons to create customized grafts as an off-label utilization of abdominal hernia graft material. The objective of this video is to describe a technique and present limited short-term outcomes utilizing a porcine urinary basement membrane (UBM) graft to perform an augmented bilateral sacrospinous ligament fixation (SSLF).

Methods: In this video, we present a step-by-step overview of our technique to perform an augmented SSLF with off-label utilization of a 7x10cm porcine UBM absorbable biologic graft. We provide instructions for graft shaping and application during transvaginal repair, utilizing the case of a woman presenting to our clinic with recurrent, stage 3 vaginal vault prolapse. We also provide data describing perioperative outcomes associated with a series of 25 cases performed at our institution utilizing the described technique.

Results: Utilization of a biologic graft augmented apical suspension procedure allows for reinforced transvaginal apical suspension without utilization of permanent mesh material. At our institution, we have observed good clinical success with no serious adverse outcomes (Table 1). Limited animal data suggests that UBM graft utilization promotes superior neovascularization and recruitment of fibro- and myoblasts, when compared to other extracellular matrix grafts, but further dedicated research assessing clinical objective and patient reported outcomes following this procedure is needed.

Conclusions: n/a

Table 1

Outcome	N (%)
Intraoperative complications	0 (0)
Same day discharge	19 (76)
Temporary* buttocks pain	6 (24)
Temporary^ voiding dysfunction	12 (48)
Complication within 6 weeks of surgery	0 (0)
Graft exposures	0 (0)
Recurrent prolapse~ at 1 year	2 (8)

*resolved within 6 months of surgery

^resolved within 1 week of surgery

~defined as stage 2 or greater prolapse OR report of a bothersome recurrent vaginal bulge

Disclosures: Douglas Luchristt: None, Alison Weidner: None, Nazema Siddiqui: Medtronic Inc: Grant/Research Support: Self, Ethicon: Grant/Research Support: Self, UpToDate: Other Financial or Material Support: Self

Video Poster 9
ALLOGRAFT PUBOVAGINAL SLING AT THE TIME OF LEFORT COLPOCLEISIS IN A PATIENT WITH PRIOR PELVIC RADIATION.

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Objective: History of pelvic radiation predisposes to poor tissue healing and poses a concern for use of mesh in a patient with stress urinary incontinence and pelvic organ prolapse. In this video, we present the concurrent repair of stage 4 pelvic organ prolapse and stress urinary incontinence with LeFort colpocleisis and allograft pubovaginal sling.

Methods: We present a case of an 84-year-old G1P1 post-menopausal woman with stage 4 pelvic organ prolapse and stress urinary incontinence. She had attempted management of her prolapse with pessaries but failed various sizes of ring with support and Gellhorn pessaries due to either expulsion or discomfort. She also reported urinary incontinence with a positive simple cough stress test. Her medical history included history of anal cancer treated with external beam radiation therapy. She was on vaginal estrogen for genitourinary syndrome of menopause. She reported post-menopausal spotting and had a pelvic ultrasound which showed a 4 mm endometrial stripe and an endometrial biopsy which was benign. The patient desired a durable surgical option with the shortest operative time and was not sexually active. LeFort colpocleisis and allograft fascial sling placement were selected based on patient preference and history of pelvic radiation which is a relative contraindication to mesh placement.

Results: The patient underwent an uncomplicated allograft pubovaginal sling placement with laparoscopic trocar closure device used for suture passage through the retropubic space. She also underwent a concomitant LeFort colpocleisis, perineorrhaphy and cystoscopy. She tolerated the procedure well and was discharged home on post-op day 0 with foley catheter due to failed spontaneous trial of void. She passed the retrograde voiding trial in the office on post-op day 3. At her 6-week follow-up appointment, she was doing well with improved voiding and no incontinence episodes.

Conclusions: Allograft fascial sling is an effective option in women with history of pelvic radiation and can be placed at the time of LeFort colpocleisis. Laparoscopic trocar incision closure device may be used for passage of suspension sutures through the retropubic space. Voiding dysfunction is common after pubovaginal slings but is usually transient.

Disclosures: Anna Romanova: None, Bertille Gaigbe-Togbe: None, Liza Karotkin: None, Kimia Menhaji: None, Anne Hardart: None

Abstracts

Video Poster 10
SPONDYLODISCITIS FOLLOWING SACRAL COLPOPEXY: OPEN MESH EXCISION

K. Laus[1], T. Yazdany[2], C. Tenggardjaja[3]. *Harbor UCLA[1], My Health LA[2], Kaiser Permanente Los Angeles Medical Center[3]*

Objective: The objective of this video is to review the presentation and clinical findings of lumbar spondylodiscitis following sacral colpopexy and to demonstrate our technique for mesh excision and removal. Given its rare occurrence with most cases responding to medical management, surgical intervention with mesh removal is relatively uncommon. In this case, a 70-year-old patient, who had previously undergone an open abdominal sacral colpopexy with synthetic mesh for recurrent pelvic organ prolapse, is presented. Her clinical presentation of worsening lower back pain three weeks after her sacral colpopexy with associated neurological symptoms was concerning for lumbar osteomyelitis and MRI findings confirmed this suspicion. After failed medical management with multiple admissions for intravenous antibiotics with continued worsening lower back pain, she underwent a CT-guided needle biopsy of the L5 disc. Culture results of this biopsy resulted with sterile cultures and her blood cultures were negative. She continued to report worsening lower back pain and ultimately the recommendation was to proceed with an exploratory laparotomy with sacral mesh removal. This video demonstrates a difficult case of an open technique for sacral colpopexy mesh removal and reviews the surgical risks for discitis. While rare, it is imperative FPMRS providers be familiar with the signs and symptoms of discitis, conservative treatment options, and when to consider surgical removal of mesh.

Methods: x

Results: x

Conclusions: x

Disclosures: Katharina Laus: None, Tajnoos Yazdany: None, Christopher Tenggardjaja: None

Video Poster 11
MODIFIED MANCHESTER HYSTEROPEXY WITH HIGH UTEROSACRAL LIGAMENT SUSPENSION FOR UTEROVAGINAL PROLAPSE WITH CERVICAL HYPERTROPHY

C. Woodbury[1], K. Menhaji[1], B. Taigbe-Gogbe[1], A. Tran[2]. *The Mount Sinai Hospital[1], Mount Sinai Icahn School of Medicine[2]*

Objective: To demonstrate on video the historical Manchester procedure for partial trachelectomy and cardinal ligament fixation for uterine-preserving repair of uterovaginal prolapse with hypertrophy of the cervix.

Methods: A 70 year-old para 3-0-2-3 with stage 3 pelvic organ prolapse and 10 cm long cervix desired surgical management. She was a candidate for uterine preservation having no personal history of cervical dysplasia or postmenopausal bleeding and no family history of gynecologic or colon cancer. She was counselled on her options and elected for uterine preserving hysteropexy. The procedure was filmed.

Results: Postoperative anatomic results were excellent.

Conclusions: The video demonstrates good anatomic cure of stage 3 pelvic organ prolapse with trachelectomy and fixation of the cardinal ligaments to the residual cervix. This procedure continues to have a role in treating pelvic organ prolapse in women who wish to avoid hysterectomy.

Disclosures: Carson Woodbury: None, Kimia Menhaji: None, Bertille Taigbe-Gogbe: None, Ann Tran: None

Video Poster 12
COMBINED ROBOTIC VENTRAL RECTOPEXY AND SACROCOLPOPEXY- A SINGLE INSTITUTION APPROACH

J. Ross[1], S. Vogler[2], M. Paraiso[2]. *Cleveland Clinic Foundation[1], Cleveland Clinic[2]*

Objective: Combined pelvic organ and rectal prolapse can be challenging to treat. Current literature suggests that an approach to repair both disorders in a concomitant procedure can benefit the patient. The objectives of this video are to not only describe the multidisciplinary workup of pelvic organ prolapse and rectal prolapse or intussusception but to also describe our technique of robotic ventral rectopexy and sacrocolpopexy.

Methods: An initial workup of a patient with combined prolapse is best performed in an office where she can be seen by both urogynecology and colorectal surgery. Along with a thorough history and physical exam, we recommend performing defecography and anal manometry on all patients for further evaluation for intussusception, sphincter tone, and rectal sensation. Indications for combined robotic ventral rectopexy and sacrocolpopexy includes both bothersome pelvic organ prolapse and external rectal prolapse, which usually requires surgery to correct, or rectal intussusception with a weak pelvic floor.

The surgery is begun with the sacral dissection as with any sacrocolpopexy. The peritoneum is then opened in continuation along the right side of the rectum within the avascular plane. Once the peritoneal reflection has been opened, it is carried down in the avascular plane and is further dissected from the posterior vagina. The deep pelvic dissection is then performed in the rectovaginal septum. Importantly, the pelvic dissection is performed down to the levator ani muscles, about five to six centimeters deep. Once the levator ani muscles are exposed, a ruler is introduced into the pelvis and the rectal width is measured. The anterior bladder dissection is then performed with the standard technique for a traditional sacrocolpopexy. A single sheet of flat, type 1, large pore, polypropylene mesh is then introduced and first secured to the levators bilaterally with 2-0 nonabsorbable suture. Next, 2-0 delayed-absorbable sutures are used to secure the mesh to the anterior rectum, sewing distal to proximal. This single sheet of flat mesh is then also used for the entire sacrocolpopexy by next securing the mesh to the posterior vagina. The mesh is then folded over the vaginal apex to the anterior vagina and before it is secured, the sacral tail is created by using the midportion of the mesh pulled out over the apex, creating a Y shape. The remaining steps of the procedure are completed in the same fashion as a standard sacrocolpopexy.

Results: At the conclusion of the procedure, the patient had excellent anterior, apical, and posterior support with the use of a single flat sheet of lightweight mesh. The surgery had no complications with a minimal EBL.

Conclusions: Multidisciplinary treatment of concomitant pelvic organ and rectal prolapse by urogynecology and colorectal surgery allows for a safe and effective treatment of both conditions concurrently. This can be performed successfully via a robotic ventral rectopexy and sacrocolpopexy with a single lightweight flat mesh sheet.

Disclosures: James Ross: None, Sarah Vogler: None, Marie Fidela Paraiso: None

Video Poster 13
A COLLABORATIVE APPROACH TO REMOVING SACROCOLPOPEXY MESH WITH COLORECTAL SURGERY AND UROGYNECOLOGY

K. McDonald[1], A. Goodwin[2], D. Rivadeneira[1], P. Finamore[2]. *Northwell Health[1], Northwell Health, South Shore University Hospital[2]*

Objective: We present two cases of vaginal mesh exposure following sacrocolpopexy, and a robotic approach to their management. This video describes the risk factors and symptoms of mesh exposure and highlights the benefit of co-management with Colorectal Surgery in patients with suspected bowel adhesions to mesh or potential for fistula.

Methods: The first patient is a 77-year-old woman with a history of total abdominal hysterectomy, sacrocolpopexy and Burch procedure who presented to the office with post-menopausal bleeding. On exam she was found to have mesh exposure at her vaginal apex, and results of her computerized tomography scan suggested a colovaginal fistula. She was referred to a colorectal surgeon for co-management due to the potential for large bowel fistula. She underwent a robotic assisted lysis of adhesions, vaginal mesh removal and closure of the vaginal mucosa by Urogynecology, with lysis of adhesions and a rigid proctosigmoidoscopy by Colorectal Surgery. She was found to not have a colovaginal fistula during her surgery, and this was further confirmed by intraoperative proctosigmoidoscopy and sigmoid leak test. The second patient is a 64-year-old woman who presented to the office with post-menopausal bleeding and was found to have a vaginal mesh exposure. She had previously had a robot-assisted supracervical hysterectomy and sacrocolpopexy, followed by abdominal mesh removal, lysis of adhesions, repeat sacrocolpopexy, rectopexy, and posterior repair for recurrent prolapse and pain. Colorectal Surgery was consulted due to suspicion for significant pelvic and abdominal adhesions. She underwent a robotic lysis of adhesions, removal of sacrocolpopexy mesh, partial removal of cervical stump, closure of the vaginal mucosa, and anterior colporrhaphy by Urogynecology, with lysis of adhesions, rigid proctosigmoidoscopy, and sigmoid leak test by Colorectal Surgery.

Results: Both patients were managed by a robotic surgical approach in collaboration with a colorectal surgeon, who aided in the dissection of mesh from bowel and tested the integrity of the bowel by intraoperative proctosigmoidoscopy and sigmoid leak tests. They each had an uncomplicated postoperative course with resolution of their symptoms and no recurrent apical prolapse.

Conclusions: This video reviews two cases of robotic repair of complications related to sacrocolpopexy mesh. Modifiable and non-modifiable risk factors for mesh exposure are reviewed. We demonstrate the benefit of a collaborative approach with Colorectal Surgery when there is concern for significant mesh adhesions to large bowel and or the potential for fistula.

Disclosures: Katherine McDonald: Caldera Medical Inc: Grant/Research Support: Self , Alexandra Goodwin: None, David Rivadeneira: None, Peter Finamore: None

Video Poster 14
PATIENT VIDEO EDUCATION ON PELVIC ORGAN PROLAPSE

C. Santayana[1], E. Robison[2], R. Ghenbot[2], S. Nekkanti[2], A. Hundley[3], L. Hickman[3]. *Ohio State University Medical Center[1], The Ohio State University[2], The Ohio State University Wexner Medical Center[3]*

Objective: With continuously advancing new technologies, it is important to look for innovative ways to improve health literacy and empower patient autonomy. Educational videos have been shown to be effective at increasing patient comprehension and satisfaction. The objective of this video is to share our patient education on pelvic organ prolapse (POP) administered prior to a patient's initial Female Pelvic Medicine and Reconstructive Surgery (FPMRS) consultation.

Methods: A video was created to educate patients on the following key components of POP: the clinical condition, associated symptoms, common risk factors, evaluation and diagnosis, non-surgical treatment options, and surgical treatment options. Important factors considered when creating this video included consideration of digital accessibility and an audience with a broad education and reading level. Efforts were made to keep the content and design simple and clear. The narration is closely matched with the text in the video. The video prose is at a Flesch-Kincaid 6th grade reading level. Simple drawings and animations are also included as visual aids to enhance the ability to

conceptualize prolapse and its management options. The video is administered prior to a patient's initial FPMRS consultation in order to provide early access to information.

Results: This patient video is being administered as part of an IRB-approved study protocol. Data collection on patient management decision satisfaction and prolapse knowledge with video education is ongoing as part of this research.

Conclusions: Patient education on POP can be provided with a short educational video discussing the condition, symptoms, risk factors, process for diagnosis, and treatment options. Patient satisfaction data on pre-consultation video education are necessary.

Disclosures: Christine Santayana: None, Elizabeth Robison: None, Rahel Ghenbot: None, Silpa Nekkanti: None, Andrew Hundley: None, Lisa Hickman: None

Video Poster 15
SURGICAL EXCISION OF RECURRENT VAGINAL CYST

A. Abdelaziz[1], M. Karram[1]. *The Christ Hospital*[1]

Objective: The objective of this video is to present different types of vaginal cyst and the surgical management of complicated recurrent cases

Methods: •40 y old presented with right recurrent vaginal cyst

•H/O of excision and drainage 2 times before with recurrence with presumptive diagnosis of Bartholin cyst

•Symptoms include feeling bulge, discomfort during intercourse and infection

•Examination revealed right anterolateral mid vaginal mass measuring about 5x5cm

•The mass was non tender, cystic, mobile

•Due to recurrence, decision was to proceed with excision of mass

Results: •Pathology showed mucinous cyst wall which is consistent with mullerian cyst

Conclusions: Vaginal cyst are mainly asymptomatic but surgical excision can be offered in symptomatic, recurrent cases

Disclosures: Ahmed Abdelaziz: None, Mickey Karram: None

Video Poster 16
MODIFIED ROBOTIC-ASSISTED SACROCOLPOHYSTEROPEXY

C. Payá Ten[1], J. To[2], A. Mishail[2]. *Flushing Hospital Medical Center*[1], *Flushing Hospital*[2]

Objective: To illustrate a modified method of conducting a uterine-sparing robotic-assisted sacrocolpohysteropexy.

Methods: Intra-operative recordings of this technique are presented, outlining the steps and accompanied with narration. Contrary to a traditional laparoscopic uterine-sparing sacrocolpopexy, our surgeon creates a "window" in the right broad ligament in order to attach the anterior mesh leaf to the anterior vagina. The posterior mesh is then attached to the posterior vagina, and the remaining arm is attached to the sacral promontory. All the mesh is then reperitonealized.

Results: See "Clinical Relevance" below.

Conclusions: Clinical Relevance: This uterine-sparing sacrocolpopexy technique allows for excellent anatomic results and resolution of pelvic organ prolapse, while avoiding some of the morbidity and increased operating time of a hysterectomy. It is clinically relevant to be able to offer different surgical approaches to manage pelvic organ prolapse for women who are appropriate candidates for a uterine-sparing prolapse procedure.

Disclosures: Claudia Payá Ten: None, Justin To: None, Alek Mishail: None

Video Poster 17
TRANSVAGINAL RECTOVAGINAL FISTULA REPAIR WITH LEVATORPLASTY

K. Christensen[1], K. Menhaji[2], C. Ascher-Walsh. *Mount Sinai Hospital*[1], *Icahn School of Medicine at Mount Sinai*[2]

Objective: To demonstrate a transvaginal rectovaginal fistula repair with levatorplasty.

Methods: We present the case of a 46- year-old para 2 with a one year history of gas and stool leaking from her vagina. Her symptoms began three months following her second normal spontaneous vaginal delivery that was complicated by a fourth degree perineal laceration. She denied anal stool incontinence. Her exam findings were notable for a pinpoint rectovaginal fistula 2 cm proximal to the introitus in the midline. This video was edited and narrated to demonstrate the surgical steps of completing this rectovaginal fistula repair with levatorplasty by transvaginal approach.

Results: The rectovaginal fistula tract was identified using a lacrimal dilator at start of procedure. The vaginal epithelium was dissected from the rectovaginal tissue and the rectovaginal fistula tract was identified and removed into its entirety. The rectal mucosa was closed and the rectovaginal tissue was imbricated over the rectal mucosa layer. Interrupted stitches were placed individually on the levator ani, bulbocavernosus and transverse perineal muscles and subsequently tied sequentially to create extra layering between the rectal mucosa and vaginal epithelium. The anal sphincter was assessed and positive dove tail sign was present indicating a defect in the anal sphincter. The patient did well postoperatively and was discharged on postoperative day zero after vaginal packing was removed and she passed her trial of void. Telephone follow up with patient on postoperative day two revealed she continued to meet all postoperative milestones without complication.

Conclusions: This surgical video demonstrates that a transvaginal approach is a safe and effective method to repair a rectovaginal fistula. In an asymptomatic patient with a disrupted anal sphincter, we do not think it is best to repair the sphincter as it adds too much tension to the rectovaginal fistula repair and likely increases the failure rate.

Disclosures: Kyrstin Christensen: None, Kimia Menhaji: None, Charles Ascher-Walsh: None

Video Poster 18
WHEN PROLAPSE CANNOT BE REDUCED: INCARCERATED PROCIDENTIA DUE TO PELVIC MASS

J. Warehime[1], S. Lenger[1], D. Metzinger[1]. *University of Louisville*[1]

Objective: Demonstrate a surgical approach to treatment of incarcerated procidentia with obstructed ureters due to a pelvic mass.

Methods: A 61 year-old female presented with complaints of constipation for 4-5 days and vaginal swelling. On exam she had complete procidentia, which was unable to be reduced with gentle pressure. She was also unable to void. A foley catheter was passed with significant difficulty. On imaging the prolapse appeared to contain a large pelvic mass measuring 11.5 cm in greatest diameter; with features consistent with a mature teratoma. She was also noted to have prolapse of the inferior aspect of the bladder resulting in bilateral ureter obstruction and prominent bilateral hydronephrosis. She was diagnosed with acute kidney injury (AKI) as her creatinine rose to 1.95. Gynecologic Oncology was consulted due to a > 10 cm pelvic mass in a post-menopausal female with plans for removal of pelvic mass, hysterectomy, bilateral salpingo-oophorectomy, possible apical support procedure, cystoscopy and ureteral stent placement.

The surgery began with several unsuccessful attempts to reduce the prolapse under anesthesia. Bovie electrocautery was used to perform a vertical posterior colpotomy. The obstructing mass was located and dissected away from the uterus before its connecting pedicle was transected, freeing the mass. This decreased the size of the prolapse so that it was able to be reduced. A robotic hysterectomy was performed in the usual fashion with the help of an EEA sizer holding cephalad pressure at the cervix. Concurrent support procedure was not performed due to lack of tissue integrity, abundance of edema, and preoperative bilateral ureteral injury with absent efflux requiring post-operative percutaneous nephrostomy tubes.

Results: Pathology showed multiple pelvic masses including an 8 cm necrotic cystic nodule most consistent with uterine fibroid, 8 cm right ovary that was purple in appearance and congested with dark red blood, and a benign mature cystic teratoma and associated seromucinous cystadenoma of the left ovary measuring 4.5 cm. Ureteral stents were unable to be placed at the time of surgery so bilateral nephrostomy tubes were placed post-operatively with the plan to change to indwelling ureteral stents after tissue edema decreased.

Conclusions: Incarcerated procidentia is an uncommon occurrence. In rare cases, incarcerated procidentia may be due to a pelvic mass such as a pedunculated fibroid or adnexal mass that is trapped within the prolapse. Surgical management may be required with colpotomy for removal of the pelvic mass in order to reduce the prolapse and complete the case. Concurrent support procedures may not be feasible depending on tissue integrity and edema.

Disclosures: Jenna Warehime: None, Stacy Lenger: None, Daniel Metzinger: Nonex

Poster 1

THE RISK OF SHORT TERM URINARY RETENTION AFTER RETROPUBIC MIDURETHRAL SLING DONE ALONE OR AS A CONCOMITANT PROCEDURE

G. Rustia[1], F. Awan[1], M. Aslam[2]. *Ascension St. John[1], Ascension St John[2]*

Objective: The purpose of this study is to identify differences in short term urinary retention following retropubic midurethral sling (TVT) placement when performed alone or with a concomitant prolapse procedure.

Methods: This is a single-center retrospective cohort study. We compare TVT procedures done alone (group 1) to TVT procedures done concomitantly with a prolapse procedure (group 2). All patients routinely had a post-operative voiding trial within 24 hours. The primary outcome is discharge with an indwelling Foley catheter.

Results: There were 100 women in group 1 and 267 women in group 2. Concomitant procedures in group 2 included vaginal colporrhaphy, colpocleisis, uterosacral ligament fixation, and robotic sacrocolpopexy. Compared to group 1, women in group 2 were more likely to be older (55 versus 62 years, $P < 0.0001$), white (69 versus 85%, $P < 0.0001$), and had a lower BMI (32.1 versus 29.2, $P < 0.0001$). In total, forty-nine patients (13.3%) failed the initial voiding trial and twenty-one patients (5.7%) were discharged with an indwelling Foley catheter. The rate of short term urinary retention requiring discharge with indwelling catheter was not significantly different between group 1 compared to 2 [9 (9.0%) versus 12 (4.5%), $P = 0.1$]. Duration of catheterization after discharge was shorter in group 1 compared to group 2 (2.1 ± 1.1 days versus 4.3 ± 2.0 days, $P = 0.008$). In multivariate analysis, patients discharged with a catheter were more likely to have diabetes with an odds ratio of 2.8 (95th confidence interval, 1.0-7.6).

Conclusions: The overall rate of short term urinary retention requiring discharge with indwelling catheter following all TVT procedures is 5.7%. This does not significantly differ if TVT is done alone (group 1) or with a concomitant prolapse procedure (group 2) (9 vs 4.5 %, $P = 0.1$). The overall rate of short term urinary retention was lower than prior published literature (5.7% versus 7.2-19.7%)[1]-[2]. It is possible that as techniques have evolved over time, short term urinary retention requiring catheterization is lower than shown by earlier studies. Catheterization duration is brief overall and significantly shorter in group 1 compared to group 2. The rate of short term urinary retention after TVT is, however, significantly associated with a history of diabetes.

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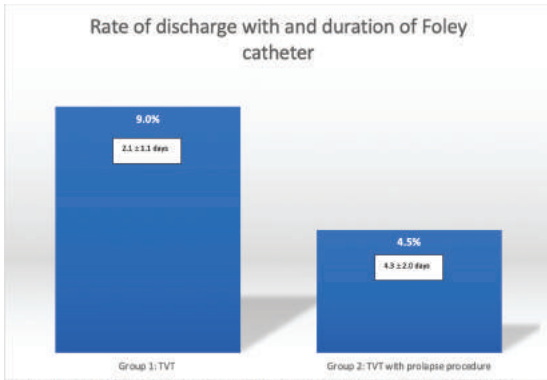

Figure 1: Rate (p=0.1) and duration (p=0.008) of postoperative urinary retention requiring discharge with a urinary catheter based on procedure. Prolapse procedures include vaginal and robotic procedures.

Disclosures: Gabriella Rustia: None, Fatima Awan: None, Muhammad Aslam: None

Poster 2

TREATMENT OF ACUTE SIMPLE CYSTITIS AND ANTIBIOTIC STEWARDSHIP WITHIN A UNIVERSITY BASED PRACTICE

A. Baffo[1], R. Vasa[1], J. Hutchinson-Colas[1]. *Rutgers Robert Wood Johnson Medical School[1]*

Objective: Within our multidisciplinary university-based practice, there are no established treatment guidelines for acute simple cystitis, a subset of urinary tract infections (UTIs). We aim to evaluate the treatment of simple cystitis within our faculty practice and compare prescribing practice with published recommendations.

Methods: This is a retrospective chart review of patients seen within a university-based practice from January 1, 2016 through December 31, 2017. During the allotted time frame, 626 patients were seen within the OBGYN practice and 412 patients were seen by non-OBGYN providers: Family Medicine, Nephrology, Internal Medicine, and Rheumatology. Patients were then identified using the ICD-10 diagnosis code "urinary tract infection (UTI)" (39.0). Patients included were non-pregnant, female, greater than 17 years old, and with acute simple cystitis. Those excluded were males, pregnant women, children under the age of 18, patients with recurrent UTI's, those immunocompromised, those with functional urinary tract abnormalities, and those with complicated UTI's. The preceding urinary symptoms, point of care urinalysis (UA) results, urine culture (UC) results and subsequent antibiotic type and course were assessed and analyzed. Our study obtained Institutional Review Board approval prior to data collection.

Results: Of the 626 patients seen by an OBGYN, 40% (219/626) were coded for UTI and 66.7% (146/219) were diagnosed with acute simple cystitis. 25.3% (37/146) were treated with first-line antibiotics, 12.3% (18/146) with alternative antibiotics and 62.3% (91/146) were not treated with any antibiotics at the time of the visit. Patients with acute simple cystitis were given first-line antibiotics as follows: 35.1% (13/37) prescribed TMP-SMX, 62.6% (23/37) prescribed Nitrofurantoin and 2.7% (1/37) prescribed Fosfomycin. Among those treated with alternatives, 61% (11/18) had no documented allergies. Of the 412 patients seen by Non-OBGYN providers, 11.2% (46/412) were coded for UTI. 67.4% (31/46) had a diagnosis of acute simple cystitis. 22.5% (7/31) patients were treated with first-line antibiotics, 22.5% (7/31) with alternative antibiotics, and 54.8% (17/31) were not treated with antibiotics at the time of the visit. Patients with acute simple cystitis given first-line antibiotics as follows: 28.6% (2/7) prescribed TMP-SMX and 71.4% (5/7) prescribed Nitrofurantoin. Among those treated with alternatives, 86% (6/7) did not have documented allergies.

Conclusions: There was a substantial percentage of patients in both OBGYN (62.3%) and non-OBGYN (54.8%) practice who were coded with uncomplicated UTI that did not receive treatment. There was also a notable number of patients who received alternative treatment, even though 61% of patients within the OBGYN practice and 86% of patients in Non-OBGYN practice given alternative treatments did not have documented allergies. Future studies can be directed at comparing antibiotic treatment for acute simple cystitis across a wider span of departments and institutions. We plan to provide information regarding first line treatment for acute simple cystitis to all faculty practice providers and perform a subsequent observational analysis for changes to the use of recommended first line antibiotics.

Disclosures: Aileen Baffo: None, Ranjitha Vasa: None, Juana Hutchinson-Colas: None

Poster 3

A COST ANALYSIS OF DIFFERENT FORMS OF BLADDER CATHETERIZATION METHODS USED AFTER PELVIC ORGAN PROLAPSE SURGERY

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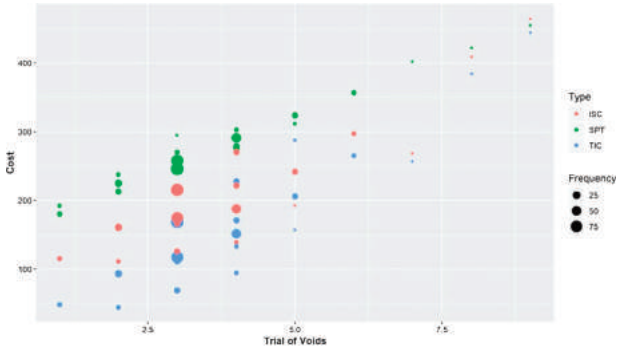
Objective: Approximately 15 to 45 percent of female patients develop acute post-operative urinary retention after pelvic organ prolapse surgery. Catheter options for bladder drainage in this setting include transurethral indwelling catheter (TIC), suprapubic tube (SPT) and intermittent self-catheterization (ISC). Although each strategy has associated risks and benefits, no one strategy has been shown universally superior over the others. We aim to evaluate the cost of these different bladder catheterization strategies.

Methods: A health system perspective was taken and a decision tree model was constructed to evaluate the costs associated with each catheterization strategy over a 6 week horizon. Base-cases were set based on recently published clinical data of our institutions (two tertiary care centers) and in systematic reviews. All associated costs were established in consultation with process stakeholders, in addition to published values.

Results: Preliminary analysis demonstrated the average cost at our primary site of TIC to be 163.66 ± 66.83 CAD per patient, which was less than the average cost of SPT and ISC, 371.71 ± 61.98 CAD per patient and 226.19 ± 36.69 CAD per patient, respectively. Although overall costs were higher at our secondary site, TIC was still less expensive than SPT, averaging 106.56 ± 40.49 CAD per patient and 342.97CAD ± 36.78, respectively.

Conclusions: Given these results, we continue our analyses in the context of published risk and benefit profiles of different post-operative catheterization strategies and associated preference data in an effort to further establish the cost benefit of these catheter options.



Disclosures: Anouk Benseler: None, Zi Ying Zhao: None, Muhammad Sheikh: None, Brian Chan: None, Colleen McDermott: None

Poster 4
PERIOPERATIVE COMPLICATION RATES FOLLOWING SURGICAL MANAGEMENT OF STRESS URINARY INCONTINENCE AND PELVIC ORGAN PROLAPSE BETWEEN HISPANICS AND NON-HISPANIC WHITES

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Objective: Racial disparities in healthcare are a public health concern. The impact of socioeconomic and racial factors on patient outcomes has been investigated by various surgical subspecialties with few studies investigating these differences amongst ethnic groups following pelvic reconstructive surgery.[1-5] The aim of this study is to examine differences in complication rates between Hispanics and non-Hispanic Whites following pelvic reconstructive surgery.

Methods: We conducted a retrospective observational study. All female patients who underwent a urogynecologic procedure for pelvic organ prolapse and/or stress urinary incontinence from 2014-2019 were included in the study. Exclusion criteria included those undergoing concurrent gynecologic surgery for abnormal uterine bleeding and subjects with incomplete records. Complications including death, postoperative blood transfusion, intraoperative cystotomy, intraoperative bowel resection, surgical site infection, wound dehiscence, reoperation, unplanned hospital visits within 30 days of surgery, unscheduled outpatient visits, emergency department visits, urinary tract infection, failed voiding trial, prolapse recurrence, urinary retention, pulmonary embolism, deep venous thrombosis, acute renal failure were compared between non-Hispanic Whites and Hispanics. Univariate analysis was performed with the chi-square test for categorical variables and the Student's t-test for continuous variables. Multivariate analysis was performed to explore the independent fixed effects of patient age, race, and ethnicity, comorbidities on complication rates. A P value less than 0.05 indicated statistical significance.

Results: A total of 159 non-Hispanic White women and 495 Hispanic women met the inclusion criteria. Hispanic women had significantly higher rates of type 2 diabetes and/or obesity (BMI > 30) and were more likely to be covered by Medicaid insurance. Non-Hispanic Whites had significantly longer operating time (185 minutes vs. 172 minutes), higher rates of history of cardiac disease or COPD, and were more likely to be covered by private insurance. In the univariate analysis, Hispanic women had significantly more emergency room visits, 16.8% vs. 5.7% ($P = 0.0005$) and more prolapse recurrence than non-Hispanic White women, 6.9% vs. 2.5%.($P = 0.049$). Prolapse recurrence in Hispanic women was not significant in the multivariate analysis ($P = .09$).

Conclusions: Despite Hispanic women's greater baseline risk (higher BMI, diabetes, Medicaid insurance), this group surprisingly did not see significant differences in post-operative complications when compared to non-Hispanic Whites. This is encouraging, as women belonging to a minority group did not experience poorer outcomes compared to their white counterparts. The "Hispanic Paradox" refers to the finding that Hispanic patients experience better health outcomes than their white counterparts despite more often possessing multiple negative socioeconomic prognostic factors. This paradox is likely present in our study findings although the understanding behind this phenomenon is limited. Future studies should include assessment of multiple minorities across several institutions to investigate whether higher rates of perioperative complications exist.

Disclosures: Emily Bowden: None, Rachel Kopkin: None, Mary Robichaux: None, Haleh Sangi-Haghpeykar: None, Elisha Jackson: None

Poster 5
COMPARISON OF URINARY TRACT INFECTION INCIDENCE FOLLOWING INTRADETRUSOR ONABOTULINUMTOXINA IN CLINIC VERSUS OPERATING ROOM SETTINGS

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Objective: Urinary tract infection (UTI) is a known complication of intradetrusor onabotulinumtoxinA (BTX) injection. Incidence of post-procedural UTI following intradetrusor BTX in different settings has not been previously investigated. The objective of this study is to compare the incidence of post-procedural UTI after the administration of intradetrusor BTX in the operating room (OR) versus in an outpatient clinic setting.

Methods: Patients receiving intradetrusor BTX at a single institution between 2013 and 2020 were identified by CPT code. A retrospective chart review was performed, and demographic data, medical comorbidities, laboratory results, and perioperative data was abstracted. UTI was defined as initiation of antibiotics within 30 days following BTX administration based upon clinician assessment of symptoms and/or urine culture results.

Results: 446 female patients who received intradetrusor BTX were identified by CPT code. 160 patients received BTX in an outpatient clinic, while 286 patients received BTX in the OR. 14 (8.75%) patients receiving BTX in the clinic and 29 (10.14%) of patients receiving BTX in the OR developed a UTI within 30 days of the procedure, thus no significant difference in incidence of post-procedural UTI was observed between the two settings ($P = 0.633$).

Conclusions: Selecting the appropriate setting for BTX administration is dependent on multiple factors; however, no significant difference in incidence of post-procedural UTI was observed in those patients receiving intradetrusor BTX in the clinic versus in the operating room. This novel data supports the safety of BTX administration in the outpatient clinic setting.

Table 1. Patient Demographics of Clinic Group Compared with Operating Room Group

Characteristic	Clinic Group (n=160)	OR Group (n-286)	P
Age, y	65.08 (12.96)	61.33 (16.98)	0.016
BMI, kg/m²	30.47 (7.42)	32.92 (8.29)	0.002
Number of Injections	13.88 (4.22)	13.43 (4.94)	0.240
Neurologic Disease	44 (27.5)	104 (36.36)	0.057
Diabetes	19 (11.88)	65 (22.73)	**0.005**
Hypertension	85 (53.13)	194 (67.83)	**0.002**
Smoking	3 (12.0)	17 (5.94)	0.264
Vaginal estrogen	14 (8.75)	37 (12.94)	0.183
Pre-op CIC	23 (14.38)	43 (15.03)	0.851
Post-op CIC	35 (21.88)	43 (15.03)	0.068
Post-op retention	13 (9.63)	3 (1.28)	**<0.001**
Post-op UTI	14 (8.75)	29 (10.14)	0.633
Pre-op antibiotic			
Oral ciprofloxacin	103 (64.38)	0 (0)	
IV ciprofloxacin	0 (0)	45 (15.73)	
IV cefazolin 1g	0 (0)	181 (63.29)	
IV cefazolin 2g	0 (0)		
Oral cephalexin	11 (6.88)	0 (0)	
IM gentamicin	8 (5)	0 (0)	
IV gentamicin + IV clindamycin	0 (0)	21 (7.34)	
Oral nitrofurantoin	3 (1.88)	0 (0)	
Not documented	35 (21.88)	3 (1.05)	

Data are mean ± standard deviation or n (). CIC, clean intermittent catheterization. IV, intravenous.

Disclosures: Rebeccah Briskin: None, Patrick Etta: None, Samantha Raffee: None, Ali Luck: None, Humphrey Atiemo: None

Poster 6
PELVIC FLOOR DYSFUNCTION IN WOMEN FOLLOWING TOTAL MESORECTAL EXCISION VS. PARTIAL MESORECTAL EXCISION FOR TREATMENT OF RECTAL CANCER

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Objective: Colorectal cancer (CRC) is a condition which is associated with substantial morbidity and mortality. Surgical treatment is the hallmark of CRC management and while during resection of proximal tumors, advanced dissection of the pelvic region is avoided, more distal tumors, including rectal involvement require a lower resection which may compromise neurovascular structures in the surgical site. Two of these procedures are total mesorectal excision (TME) and partial mesorectal excision (PME). The aim of this study was to assess pelvic floor dysfunction and its effect on quality of life in women diagnosed with rectal cancer who underwent TME for mid to low rectal tumors, compared to women treated by PME for upper rectal or distal sigmoid tumors.

Methods: We performed a retrospective cohort study at a tertiary university hospital between January 2014 and December 2019. A comparison was performed between women who underwent TME as opposed to PME for treatment of rectal cancer. Women included were contacted via telephone and were requested to answer several questionnaires. Urinary dysfunction and its impact on quality of life were assessed using the Urinary Distress Inventory Short Form (UDI-6) and Urgency, Severity and Impact (USIQ) questionnaires, respectively. Bowel dysfunction was evaluated using the Low Anterior Resection Syndrome (LARS) questionnaire. Pre-operative, intra-operative and post-operative data were compared between groups. Further univariate and multivariate analyses were performed in the attempt of assessing risk factors for urinary and bowel dysfunction.

Results: A total of 107 women were included in the study, 73 women underwent PME as opposed to 34 women who were treated by TME. Mean age was 60.7 (SD = 9.5) and 61.2 (SD = 12.6) in the PME and TME groups, respectively (P = 0.813). Urinary dysfunction following surgery as assessed using mean UDI-6 questionnaire score did not differ between groups (11.6 ± 19.5 vs. 10.2 ± 16.9, P = 0.989, for PME and TME groups, respectively). Similar findings were found with regard to women with any degree of urinary symptoms (UDI-6 > 0) and more severe urinary dysfunction (UDI-6 > 25). Impact of urinary dysfunction on quality of life as assessed using the USIQ questionnaire did not differ between groups. In contrast, a difference was noted with regard to bowel function evaluated using the LARS questionnaire with women in the TME group having substantially higher LARS score compared to the PME group (24.8 ± 13.8 vs. 10.8 ± 12.7, P < 0.001, respectively).

In an attempt to detect risk factors for pelvic floor dysfunction in our study group multivariate analysis was performed showing longer hospital stay was associated with increased risk of some degree of urinary dysfunction (OR = 1.38, CI 1.1-1.72, P = 0.005). Risk factors for major LARS (defined as LARS score > 30) included increased parity (OR = 1.2, CI 1.01-1.55, p = 0.040) and lower level of anastomosis (OR = 0.83, CI 0.75-0.93, P < 0.001).

Conclusions: Women undergoing TME have comparable results to PME with regard to urinary dysfunction. In contrast increased bowel dysfunction was noted in the TME group.

Disclosures: Henry Chill: None, Shani Parnasa: None, Noam Shussman: None, Roie Alter: None, Brigitte Helou: None, Adiel Cohen: None, David Shveiky: None

Table 1. Basic and pre-operatvie characteristics of the study population – PME vs. TME.

Parameter	PME	TME	P value
No. of patients	73 (68.2)	34 (31.8)	
Age	60.7 ±9.5	61.2 ±12.6	0.813
Smoker	5 (7.1%)	2 (6.3%)	0.907
Never	58 (82.9%)	28 (87.5%)	
Past	7 (10.0%)	2 (6.3%)	
Current	5 (7.1%)	2 (6.3%)	
BMI	27.7 ±5.8	28.1 ±4.7	0.785
Parity	3.6 ±2.4	4.7 ±2.9	0.179
Comorbidities			
Hypertension	6 (8.2%)	1 (2.9%)	0.304
Dyslipidemia	16 (21.9%)	10 (29.4%)	0.400
DM	10 (13.7%)	4 (11.8%)	1.000
IHD	3 (4.1%)	0 (0.0%)	0.550
AF	3 (4.1%)	1 (2.9%)	1.000
ASA			
0	0 (0.0%)	4 (11.8)	0.028
1	26 (35.6%)	10 (29.4%)	
2	41 (56.2%)	19 (52.9%)	
3	3 (8.2%)	1 (2.9%)	
Radiation before surgery	0 (0.0%)	25 (73.5%)	<0.001

Data presented as mean± SD or n(%)

Note: PME, partial mesorectal resection; TME, total mesorectal resection; BMI, body mass index; FHR, DM, diabetes mellitus; IHD, ischemic heart disease; AF, atrial fibrillation; ASA, American Society of anesthesiologists physical status classification system

Table 2. Intra-operative data and post-operative outcomes – PME vs. TME

Parameter	PME	TME	P value
No. of patients	73 (68.2)	34 (31.8%)	
Length of surgery (minutes)	191± 83	229± 115	0.054
Complications			
Hemorrhage	1 (1.4%)	2 (5.9%)	0.237
Unplanned stoma	0 (0.0%)	1 (2.9%)	0.318
Tumor size (cm)	4.0± 1.9	2.6 ± 1.2	<0.001
Level of anastomosis from AV (cm)	13.4± 5.0	3.5± 2.3	<0.001
Adjuvant treatment			0.783
None	34 (47.2%)	18 (52.9%)	
Chemotherapy	37 (51.4%)	16 (47.1%)	
Radiotherapy	1 (1.4%)	0 (0.0%)	
Hospital stay (days)	7.6± 2.8	9.2± 3.2	0.013
UDI-6 score	11.6± 19.5	10.2± 16.9	0.989
USIQ score	11.0± 20.9	11.3± 20.3	0.512
Questions 1-5	14.0± 25.0	16.0± 25.6	0.422
Questions 6-13	9.0± 19.3	8.6± 20.7	0.938
LARS score	10.8± 12.7	24.8± 13.8	<0.001

Data presented as mean± SD or n(%)

Note: PME, partial mesorectal resection; TME, total mesorectal resection; AV, anal verge; UDI-6, Urinary Distress Inventory Short Form; USIQ, Urgency Severity and Life Impact Questionnaire; LARS, Low Anterior resection syndrome

Poster 7
ASSOCIATION BETWEEN BIRTH WEIGHT AND HEAD CIRCUMFERENCE AND OBSTETRIC ANAL SPHINCTER INJURY SEVERITY

H. Chill[1], G. Karavani[2], M. Lipschuetz[3], E. Atias[4], D. Shveiky[3]. *Hadassah Medical Organization, Hebrew University of Jerusalem[1], Hadassah-Hebrew University[2], Hadassah – Hebrew University Medical Center[3], Hadassah Medical Center[4]*

Objective: Obstetric anal sphincter injury (OASI) grade has been shown to correlate with the occurrence of future symptoms and their severity. However, a paucity of data exists on the association between specific risk factors for OASI and severity of anal sphincter tears. The aim of this study was to identify risk factors for increasing severity of OASI and evaluate its possible correlation with two known risk factors– increased birth weight (BW) and neonatal head circumference (HC).

Methods: We performed a retrospective cohort study at a university affiliated tertiary hospital between 2003 and 2019. Inclusion criteria were live, singleton, vertex presentation vaginal deliveries at term. A comparison was performed between 5 groups of patients – according to presence and degree of the perineal laceration – 3a, 3b, 3c and 4 and patients without OASI. In addition, four parameters were defined in order to assess their relation to the severity of the OASI: (1) BW ≥ 90th and HC < 90th percentiles; (2) BW < 90th and HC ≥90th percentile; (3) BW and HC ≥90th percentile and (4) BW and HC < 90th percentiles.

Results: During the study period, 150,221 deliveries were evaluated. Following implementation of the exclusion criteria, parturients were allocated according to OASI severity - 455 patients had a 3rd (3a, 3b or 3c) or 4th degree perineal tear, while 110,966 patients had no OASI. The OASI groups had larger fetuses with higher rates of HC and BW ≥ 90th percentile, in addition to higher rates of

primiparity, epidural analgesia administration, episiotomy, operative vaginal delivery, and prolonged second stage of labor. Allocation to subgroups according to offspring anthropomorphic measures showed that as fetal size parameters increased, the rate of more severe tears also increased.

Multinomial regression analysis was performed for each OASI subgroup – 3a, 3b and 3c while fourth degree tears were not included, owing to the small number of cases in this subgroup. This analysis demonstrated the odds for OASI gradually increased with tear severity for the combined BW and HC ≥ 90th percentile parameter, as compared with neonates with HC and BW < 90th percentile.

Conclusions: Birth weight and head circumference above the 90th percentile are correlated with increased degree of OASI severity.

Table 1. Demographic and obstetric characteristics of the study population patients according to obstetric anal sphincter injury (N=111,421).

	No OASI	3A degree OASI	3B degree OASI	3C degree OASI	4th degree OASI	p-value*
No. of patients	110966	148	144	103	60	
Maternal age	29.6 ± 5.5	26.3 ± 4.5*	26.6 ± 4.6*	26.6 ± 4.5*	27.9 ± 5.3	<0.001
Parity	1.92 ± 1.9	0.3 ± 0.6	0.4 ± 0.8	0.5 ± 0.9	0.9 ± 1.5	<0.001
Primiparous (%)	29351 (26.5%)	114 (77%)*	103 (71.5%)*	74 (71.8%)*	31 (51.7%)*	<0.001
Maternal HTN/ Preeclampsia (%)	629 (0.7%)	3 (2.0%)	2 (1.4%)	2 (1.9%)	0 (0%)	0.078
Gestational Diabetes (%)	1839 (1.7%)	5 (3.4%)	4 (2.8%)	4 (3.9%)	2 (3.3%)	0.095
Gestational week	39.5 ± 1.2	39.7 ± 1.2	39.9 ± 1.2*	39.9 ± 1.1*	39.8 ± 1.2	<0.001
Induction of labor (%)	17010 (15.4%)	28 (18.9%)	31 (21.5%)	32 (31.1%)	14 (23.3%)	<0.001
Epidural analgesia (%)	59324 (53.6%)	101 (68.7%)*	102 (71.3%)*	65 (63.7%)	39 (65.0%)	<0.001
Artificial rupture of membranes (%)	50966 (56.1%)	67 (49.3%)	83 (58.9%)	49 (49%)	19 (37.3%)	0.015
Meconium stained amniotic fluid (%)	18061 (17.0%)	23 (15.8%)	34 (23.8%)	21 (21.2%)	9 (15.5%)	0.188
Prolonged 2nd stage (%)	7978 (7.5%)	28 (19.6%)*	32 (22.4%)*	22 (21.6%)*	9 (15.8%)	<0.001
Mode of delivery						<0.001
Vaginal	102158 (92.1%)	111 (75.0%)*	97 (67.4%)*	67 (65.0%)*	38 (63.3%)*	
Vacuum assisted	8686 (7.8%)	33 (22.3%)*	45 (31.3%)*	33 (32.0%)*	20 (33.3%)*	
Forceps assisted	122 (0.1%)	4 (2.7%)*	2 (1.4%)*	3 (2.9%)*	2 (3.3%)*	
Birthweight (grams)	3317 ± 416	3380 ± 446	3462 ± 461*	3484 ± 486*	3465 ± 424*	<0.001
Birth weight >90th percentile (>3900 grams)	9455 (8.5%)	17 (11.5%)	24 (16.7%)*	21 (20.4%)*	9 (15.0%)	<0.001
Head circumference (cm)$^{\beta}$	34.3 ± 1.18	34.3 ± 1.20	34.8 ± 1.21*	34.9 ± 1.30*	34.4 ± 1.32	<0.001
Head circumference >90th percentile (>36 cm) $^{\beta}$	6145 (10.7%)	17 (13.4%)	28 (20.7%)*	24 (25.3%)*	6 (14.6%)	<0.001
Episiotomy (%)	9084 (9.5%)	33 (22.3%)*	45 (31.5%)*	26 (25.2%)*	14 (23.3%)*	<0.001

presented as mean± SD (median) or n (%).

Note: OASI, obstetric anal sphincter injury; PIH, pregnancy induced hypertension. * P-values indicate comparison of parturients with and without OASI tears grade 3-4 and were calculated for χ2 test for dichotomous features, Mann-Whitney U test for continuous features. $^{\beta}$ Available electronic since 2010, for 57473 in controls and 398 on parturients with OASI tears grade 3-4 group.

* Tukey or Bonferroni post hoc test analysis, comparison of subgroup tear to parturients without OASI (p<0.01)

Table 2. Multinominal regression models for parameters associated with each degree of obstetric anal sphincter injury, controlling for maternal age and gestational age

	3A degree tear		3B degree tear		3C degree tear	
Parameter	Adjusted OR (95% CI)	p-value	Adjusted OR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
Instrumental delivery	1.34 (0.84-2.13)	0.226	1.85 (1.23-2.86)	0.005	2.85 (1.74-4.67)	<0.001
Epidural analgesia	1.01 (0.73-1.65)	0.662	0.97 (0.65-1.45)	0.897	0.64 (0.40-1.02)	0.062
Induction of labor	0.99 (0.62-1.57)	0.958	1.01 (0.65-1.56)	0.976	1.89 (1.18-3.01)	0.008
Prolonged 2nd stage of labor	1.81 (1.09-2.99)	0.021	2.08 (1.33-3.27)	0.001	1.91 (1.11-3.28)	0.019
Episiotomy	0.84 (0.52-1.34)	0.458	1.29 (0.85-1.96)	0.238	0.83 (0.50-1.40)	0.490
Primiparous	6.03 (3.75-9.70)	<0.001	4.51 (2.85-7.14)	<0.001	4.94 (2.85-8.56)	<0.001
BW<90th and HC<90th percentile	referent		referent		referent	
BW<90th and HC≥90th percentile	1.08 (0.55-2.01)	0.829	1.63 (0.94-2.83)	0.081	1.54 (0.79-2.98)	0.205
BW≥90th and HC<90th percentile	2.24 (1.07-4.69)	0.032	3.53 (1.89-6.57)	<0.001	3.11 (1.39-6.93)	0.006
BW≥90th and HC≥90th percentile	1.70 (0.78-3.74)	0.185	2.90 (1.55-5.42)	0.001	4.22 (2.20-8.10)	<0.001

Note: OASI, obstetric anal sphincter injury; HC, head circumference; BW, birthweight; OR, odds ratio; CI, confidence interval.

* Fourth degree tears were not included in the analysis, owing to the small number of cases in this subgroup

Disclosures: Henry Chill: None, Gilad Karavani: None, Michal Lipschuetz: None, Eyal Atias: None, David Shveiky: None

Poster 8
INVESTIGATION OF A NEW VAGINAL BOWEL CONTROL DEVICE (ECLIPSE™ SYSTEM) AS A TREATMENT OPTION FOR FECAL INCONTINENCE IN WOMEN PRESENTING TO A FPMRS CLINIC

A. Wyman[1], R. Bassaly[1], K. Greene[1]. *University of South Florida*[1]

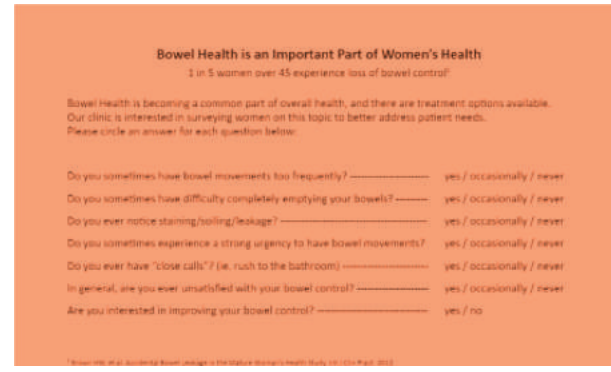
Objective: Studies have demonstrated the prevalence of fecal incontinence (FI) around 9-15% of community-dwelling women, similar to rates of urinary incontinence (UI) and significantly higher than rates for pelvic organ prolapse (POP) [1]. However, up to 70% of women with FI do not seek treatment, and often do not mention their FI to a healthcare provider due to a belief that treatments are not available [2,3]. While treatment options exist for FI, conservative options have been limited. The primary objective of this study was to investigate the prevalence of FI symptoms among women presenting to FPMRS clinics offering a new conservative treatment using screening questions with common language. A secondary objective was to determine the proportion of women who proceeded with a conservative treatment option in the form of a vaginal bowel control device (Eclipse™ System). We hypothesized that a high rate of women will admit to FI symptoms within this cohort and there will be an increased interest in proceeding with this conservative treatment option.

Methods: This was an IRB approved cross-sectional survey study as part of the PURSUIT Registry Study designed to further the understanding of real world use of Eclipse for FI in women. Screening questions for FI symptoms were presented on an "orange card" (fig 1) and were distributed to patients presenting as new patient consults and for established follow up visits between 12/13/2019 and 3/5/2020. Each site was instructed to distribute one card per unique patient. The patient was given the card at the start of the office visit by the medical assistant and was given adequate time to fill it out prior to physician interaction. Based on the findings of the card, physicians could then discuss FI and associated symptoms and treatment options, but this was not standardized as part of the study. Descriptive statistics were performed.

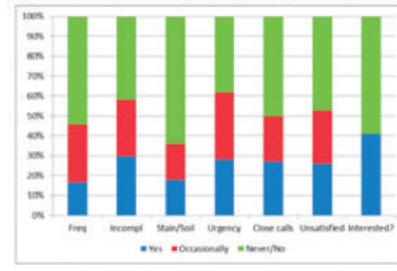
Results: 172 completed surveys were collected and included in the study. The overall rate of fecal incontinence was 17% (29/172) when defined by answering yes to "staining, soiling, or leakage?" and this number increased to 34% (58/172) when adding those with occasional leakage (fig 2). There is a high prevalence of fecal urgency within this sample with 28% of women surveyed experiencing a strong urgency to have a bowel movement and 27% experiencing "close calls or rushing the restroom." The majority of patients (61-100%) who screened positive for FI symptoms were interested in improving bowel control. Of all screened FPMRS patients, 20% were interested in the new bowel control device, and 16 (9%) immediately moved forward to schedule a fitting during this time period.

Conclusions: Fecal incontinence prevalence may be higher within women presenting to FPMRS clinics with PFDs and its symptoms should be routinely screened for as the majority may desire or elect to proceed with further treatment. Having more treatment options available may make patients more likely to admit to FI or symptoms of FI compared to screening studies where patients have the perception that not much can be done for their condition.

1.) Wu et al, 2014 2.) Brown HW et al, 2017 3.) Brown et al, 2013



Percents	Frequency	Incomplete	Stain/Soil	Urgency	Close calls	Unsatisfied	Interested?
Yes	16%	29%	17%	28%	27%	25%	39%
Occasionally	28%	28%	17%	33%	23%	26%	NA
Never/No	53%	41%	62%	38%	49%	45%	56%
Blank	2%	2%	3%	1%	1%	4%	4%



# of "Yes"	% patients with 1 or more "Yes"	...of these, % who are interested in improving bowel health
At least 1	55%	61%
At least 2	34%	73%
At least 3	23%	85%
At least 4	17%	79%
At least 5	10%	94%
All 6	4%	100%

Disclosures: Allison Wyman: AUGS PFD Research Foundation: Grant/Research Support: Self, Pelvalon: Grant/Research Support: Self, Renee Bassaly: None, Kristie Greene: Pelvalon: Grant/Research Support: Self

Poster 9
PATIENT EXPERIENCE OF IMMEDIATE RELEASE COMPARED TO EXTENDED RELEASE ANTIMUSCARINIC TREATMENT FOR OVERACTIVE BLADDER: A CONTENT ANALYSIS OF AN ONLINE DRUG FORUM

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Objective: To investigate patient experiences of immediate versus extended release antimuscarinic medications and explore themes related to satisfaction and discontinuation on an online forum.

Methods: This is a cross-sectional analysis of user reviews from *drugs.com*, an online, public-facing pharmaceutical resource and community forum. Anti-muscarinic medication reviews posted prior to February 2020 were exported using "Web Scraper" for analysis. Extracted user content was reviewed using a modified inductive content analysis approach where clinical relevance

formed the basis for initial codes. Codes were subsequently modified by salient, emergent findings. Three members of the research team independently coded 10% of the reviews, with duplicated coding to allow comparison of codebooks, and iterative modification until substantial agreement was obtained (Cohen's kappa >0.6) at which point the remainder were reviewed independently.

Codes related to side effects were categorized by organ system. Themes were compared against markers of audience agreement, overall score of satisfaction with the medication and duration of use. Comparisons were made using Chi-Squared test, Mann-Whitney U test, Kruskal-Wallis test or Spearman's correlation, as appropriate.

Results: The research team coded 469 online reviews with substantial agreement assured by a Kappa of 0.82-0.87. 22 (4.7%) of the reviews were for long-acting (LA) or extended release (XR) formulations (Tolterodine LA n = 14 and Trospium XR n = 8). LA formulations were associated with higher overall self-reported satisfaction scores (90/100 vs 60/100, $P = 0.035$) and higher overall impression of a positive review (mixed review/mostly positive versus mixed review/mostly negative, $P = 0.02$).

Thematic codes of "Worse" and "ENT side effects" were significantly less prevalent in the LA group compared to immediate release (Worse: 28.8% vs 9.1%, p = 0.05; ENT: 39.6% vs 18.2%, $P < 0.05$). Whereas thematic codes of "Improved", "CNS side effects", "GI side effects", "Cardiac side effects", "Psychiatric side effects" and "Systemic side effects" were not different between groups. There was no difference in the median duration of use ($P = 0.20$) when comparing immediate release to extended release medications.

Conclusions: Using patient reported, unsolicited qualitative data, patients using long acting formulations of antimuscarinics had higher satisfaction and more positive reviews than those using standard formulations.

Disclosures: Katharine Ciesielski: None, Elise Morocco: None, Kyle Latack: None, Brian Nguyen: None, Christina Dancz: None

Poster 10
THE DIFFERENCES IN SURGICAL PRACTICES BETWEEN SENIOR AND JUNIOR UROGYNECOLOGY FACULTY MEMBERS

K. Downer[1], L. Zhou[1], K. Ram[1], H. Chun[2], N. Cui[1]. *Jamaica Hospital Medical Center*[1], *Jamaica Hosp Medical Center/ Flushing Hospital Medical Center*[2]

Objective: To examine if there is any difference in the surgical practices between Senior and Junior Urogynecology faculties by comparing their surgical numbers, especially the numbers of different types of hysterectomy for residency education.

Methods: We conducted a retrospective chart review study by collecting 150 gynecology cases from each faculty, which were back tracked from their last pre-pandemic calendar year at our institution. The charts were back tracked from 12/31/2016 for our senior faculty, who retired in 2017, and from 12/31/2019 for our junior faculty, who joined the practice in 2015. We reviewed the total numbers Urogynecology (Uro-GYN) procedures that were performed by each faculty, and the cases were divided into different categories, such as mid-urethral sling, colporrhaphy, obliterative procedure, abdominal and vaginal suspension procedures. We also recorded the number of each type of hysterectomies from both faculties; the types included vaginal hysterectomies (VH), laparoscopic hysterectomies (LH), and abdominal hysterectomies (AH). Uterine weights were recorded based on the pathology reports for comparison. Other common types GYN surgery were also collected and organized in different categories, such as operative laparoscopy (Lap), hysteroscopy (Hystero), and other GYN procedures (GYN). Analyzed data was represented as Mean ± sd, and student t-test was used for two-group comparisons. Statistical significance was defined as $P < 0.05$.

Results: Both faculties took around two years to accomplish 150 cases in their practices with similar hospital referral base. There was a statistical difference in average age of patients between the two faculties (47.0 ± 13.8 for Senior faculty vs. 52.6 ± 12.9 for Junior faculty, $P = 0.0003$). The Junior faculty appeared to perform more combined procedures (40/150 for Senior faculty vs. 67/150 for Junior faculty). As shown in Table 1, we observed the Junior faculty performing higher number of Uro-GYN procedures (67 for Senior faculty vs. 103 for Junior faculty), as well as more abdominal suspensions and obliterative procedures. However, the Senior faculty had placed more mid-urethral slings (48 for Senior faculty vs. 33 for Junior faculty). Both faculties performed similar total numbers of hysterectomies and vaginal hysterectomies (58 and 31 for Senior faculty vs. 54 and 35 for Junior faculty, respectively), but the Junior faculty appeared to perform more LH and less AH (2 and 25 for Senior faculty vs. 14 and 5 for Junior faculty, respectively). The Senior faculty performed more Lap and Hystero (14 and 27 for Senior faculty vs. 7 and 16 for Junior faculty, respectively). When we compared the weights of uterus (Table 2), we noted there was a significant difference in uterine weights for LH (120.5 g for Senior faculty, vs. 237.7 g for Junior faculty, $P < 0.006$). The uterine weights were approaching to significant difference for VH (76.2 g for Senior faculty vs. 103.9 g for Junior faculty, $P = 0.05$), and there was no difference noted in AH uterine weights, and overall ages for hysterectomy patients between two faculties.

Conclusions: We observed an increase in variety and number of Uro-GYN procedures with the Junior faculty's practice, and more hysterectomies with larger uterine weights were done minimum invasively without compromising the number of VH in residency education. However, there was a reduction of sling procedures, AH, operative laparoscopy and hysteroscopy numbers as trade off.

Table 1. The numbers of Uro-GYN and GYN surgery between Senior and Junior faculties.

	Senior Faculty		Junior Faculty	
Age (avg, $\pm sd$)	47.0	±13.8	52.6	±12.9
# of Uro-GYN Cases	67/150	44.7%	103/150	68.7%
# of slings	48/67	71.6.2%	33/103	32.0%
Vaginal suspension	29/67	37.3%	29/103	28.2%
Abdominal suspension	0/67	0.0%	4/103	3.9%
# of obliterative procedure	0/67	0.0%	21/103	20.4%
Colporrhaphy	43/67	64.2%	66/103	64.1%
# Hysterectomy	58/150	38.7%	54/150	36.0%
VH	31/58	53.4%	35/54	64.8%
LH	2/58	3.4%	14/54	25.9%
AH	25/58	43.1%	5/54	9.3%
# of Lap	14/150	9.3%	7/150	4.7%
# of Hystero	27/150	18.0%	16/150	10.7%
# of other GYN case	15/150	10.0%	22/150	14.7%

Table 2. The comparison of average age and uterine weights in hysterectomy patients between Senior and Junior faculties

	Senior Faculty	Junior Faculty	p
Age $\pm sd$	54.2 ±12	54.7±10.5	0.4
Uterine Weights (g)			
VH	76.2	103.9	0.05
LH	120.5	237.7	0.006
AH	608.5	738.4	0.3

Disclosures: Kimberley Downer: None, Linlin Zhou: None, Kavitha Ram: None, Hajoon Chun: None, Nuan Cui: None

Poster 11
INTERNAL VALIDITY AND CONSISTENCY OF CROWD-SOURCED DATA FOR THE REPORTING OF ANTIMUSCARINIC SIDE EFFECTS

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Objective: To investigate the internal reliability and consistency of crowd-sourced reports of antimuscarinic side effects from drugs.com

Methods: This is a cross-sectional analysis of user reviews for oxybutynin, tolterodine, solifenacin, fesoterodine, favoxate, darifenacin and trospium from *drugs.com*, an online content aggregator and public-facing community forum. Anti-muscarinic medication reviews prior to (Feb 2, 2020) were exported to text using "Web Scaper" for analysis. Extracted user content was reviewed qualitatively using a modified an inductive content analysis method where clinical relevance formed the basis for initial codes. Codes were subsequently modified by salient, emergent findings. 10% of the reviews were coded by separate member of the research team and the codebooks adjusted until substantial agreement was obtained (Cohen's kappa >0.6).

Codes were combined thematically by organ system for comparative analysis. Themes of improvement were identified for sub-analysis. Reviewers coded their impression of the user entries, categorizing each as: all positive, mostly positive, mostly negative, or all negative. User's reported satisfaction on a Likert scale was also reviewed. These three measures were compared using Spearman's coefficient to measure internal validity and consistency.

Results: A total of 469 records were included in our analysis. The summary impression by the reviewer was strongly correlated to the user's numeric rating of the medication (ρ 0.87, $P < 0.001$.) Reports coded as "improved" were moderately correlated to the user's numeric rating of the medication (ρ 0.64, $P < 0.001$.) Reports coded as "improved" or "not improved" were also moderately correlated with reviewer's summary impression (ρ 0.74, $P < 0.001$).

Coded themes of "no improvement/worsened symptoms," "neurologic," "ENT," "gastrointestinal," "cardiac," "psychiatric" and "systemic" side effects were all significantly associated with decreased user numeric rating of the medication (all $P < 0.05$), and with the summary impression by the reviewer (all $P < 0.05$).

Duration of treatment at time of review was significantly negatively associated with all side effects ($P < 0.05$), except for ENT ($P = 0.87$) and cardiac ($P = 0.23$). The coded theme of "improvement" was significantly associated with all measures of satisfaction.

Conclusions: The narrative review and numeric rating of each medication were highly correlated, as was the reviewer's summary impression, thus demonstrating internal consistency. This data suggests crowd-sourced reviews may be used to supplement other methods of post-market surveillance.

Disclosures: Elise Morocco: None, Kyle Latack: None, Katharine Ciesielski: None, Brian Nguyen: None, Christina Dancz: None

Poster 12

MILITARY SEXUAL TRAUMA EXPOSURE AND PELVIC FLOOR DISORDERS IN FEMALE VETERANS

C. DeTeresa[1], L. Siff[2]. *VCU Health[1], Virginia Commonwealth University[2]*

Objective: Military Sexual Trauma (MST) is a violent psychological trauma unique to veterans and active service members. MST is defined by federal law and used by the Veterans Association to describe experiences of sexual assault or harassment during military service. While many therapies focus on the treatment of psychological trauma, research has demonstrated an association with physiologic conditions such as chronic pain. Our objective is to examine the association between exposure to MST and prevalence of pelvic floor disorders (PFD).

Methods: This was a retrospective cohort study examining female veteran patients at a Veterans Administration Medical Center (VAMC) with a designation of MST exposure from October 2017 to September 2020 as identified in the electronic medical record. ICD-10 diagnosis codes for pelvic floor disorders were also identified, including urinary incontinence (stress, urge, mixed overflow, and unspecified), overactive bladder, neuropathic bladder, interstitial cystitis, dyspareunia, vaginismus, and vulvodynia. Descriptive statistics were used to analyze potential associations.

Results: Between 9 and 15% of veterans at the McGuire VAMC requested referral to MST-related care each fiscal year, and of the veterans who did receive MST-related outpatient care, 60% of this was mental health related. Of the 2705 female veterans identified with MST, 141 have an ICD-10 diagnosis of pelvic floor disorders, with a prevalence of 5.3%. 3064 female veterans were found to have diagnoses of PFD over this same time period, and the prevalence of MST in this population was 4.6%. The number of diagnoses per patient ranged from 1 to 6, with 56% of patients receiving a single PFD diagnosis [see Table 1]. The most prevalent diagnosis was mixed urinary incontinence, which comprised 48% of all diagnoses analyzed [see Figure 1].

Conclusions: The prevalence of PFD in a female population with a history of MST at the VAMC (5.3%) was lower than the association of urologic disorders and sexual trauma, which ranges in the literature from 15-50%. Our data set did not analyze the ICD 10 codes for non-specific pelvic pain, which could play a multifactorial role in pelvic floor dysfunction. It is important to acknowledge that MST may conjure emotions of shame and concern for punitive consequences leading to a desire to seek care outside of a military related health system. Since care through the VAMC depends on service connection to a specified diagnosis, if patients or providers do not think PFD diagnoses are related to their MST and therefore not considered to be service connected, they may seek care in the community rather than a VAMC. Regardless, normalizing the relationship between trauma and PFDs will assist patients in receiving appropriate care, as all patients are deserving of trauma informed care.

Table 1

Number of PFD Diagnoses	Patients
1	79/141 (56%)
2	40/141(28%)
3	17/141 (12%)
4	3/141 (2%)
5	1/141 (1%)
6	1/141 (1%)

Table 1: Number of PFD diagnoses expressed as a percentage

Figure 1

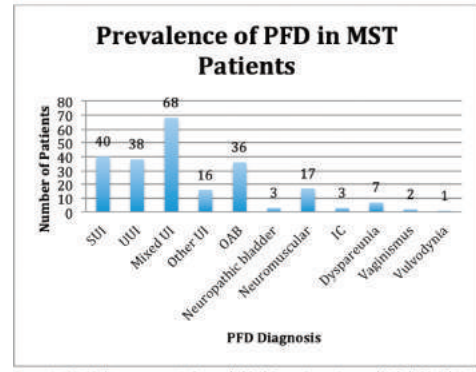


Figure 1: ICD-10 diagnoses queried were (N39.3) Stress incontinence (SUI), (N39.41) Urge incontinence (UUI), (N39.46) Mixed incontinence, and (N39.490) Overflow incontinence. Other incontinence including: (N39.498) Other specified urinary incontinence, (N39.42) Incontinence without sensory awareness, and (N39.43) Post-void dribbling. (N32.81) Overactive bladder (OAB). Neuropathic bladder including: (N31.0) Uninhibited neuropathic bladder not elsewhere classified, and (N31.1) Reflex neuropathic bladder not elsewhere classified. Neuromuscular dysfunction including: (N31.8) Other neuromuscular dysfunction of bladder, and (N31.9) Neuromuscular dysfunction of bladder unspecified. (N30.10) Interstitial cystitis (IC). Dyspareunia including: (N94.10) Unspecified dyspareunia, and (N94.11) Superficial introital dyspareunia. (N94.2) Vaginismus, and (N94.819) Vulvodynia, unspecified.

Disclosures: Catherine DeTeresa: None, Lauren Siff: None

Poster 13

CAN WOMEN ACCURATELY PREDICT VOIDED VOLUMES?

S. Sansone[1], S. Drangsholt[1], A. Cho[1], B. Chughtai[1]. *Weill Cornell Medicine[1]*

Objective: Purpose: To determine if female patients can accurately estimate voided volumes and determine patient characteristics that are most predictive of accuracy in volume estimation.

Methods: We prospectively collected data on 80 women undergoing urodynamics for lower urinary tract symptoms and/or prolapse at a tertiary care facility. Data collection included urinary symptoms, PVR, urodynamic diagnosis, flow time and rate, and one time measurement of voided volume into a blinded uroflow. Baseline characteristics and demographics were recorded. Descriptive statistics and linear regression analysis were performed to examine predictors of estimated voided volume (mL).

Results: Results: Mean age was 57.4 (SD = 12.9) and the median BMI was 25.7 kg/m2 (IQR = 6.9). The majority of patients had frequency/urgency (75%) followed by stress incontinence (45%) on presentation. The median estimated voided volume and actual voided volume were 250 mL (range 62-1000) and 221.5 mL (range 100-778), respectively. The average percent error was 19.4%, with 35% of patients being within a 20% margin of error and 55% of patients being within a 30% margin of error. The most common urodynamic diagnosis was stress urinary incontinence in 73% of women followed by bladder oversensitivity in 26%. Of all comorbidities and urinary symptoms only anxiety was predictive of a higher estimated voided volume percent error ($P = 0.02$). Urodynamic diagnosis was not predictive of estimated voided volume accuracy within a 30% margin of error. For each one year increase in age, there was a 4% decrease in the odds of estimating voiding volume within 30% of actual voided volume ($P = 0.02$).

Conclusions: The majority of women estimate voided volume with a margin of error greater than 20%. This should be taken into consideration when obtaining patient history and may substantiate the use of voiding diaries for accurate measurement.

Disclosures: Stephanie Sansone: None, Siri Drangsholt: None, Ahra Cho: None, Bilal Chughtai: None

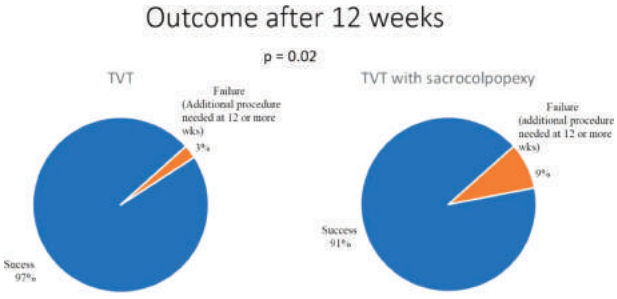
Poster 14

SUCCESS RATE OF TENSION-FREE VAGINAL TAPE WITH AND WITHOUT CONCOMITANT ROBOTIC SACROCOLPOPEXY

F. Drouillard[1], G. Rustia[1], M. Aslam[2]. *Ascension St. John[1], Ascension St John / Michigan State University[2]*

Objective: The purpose of this study was to identify any difference in failure rate of midurethral Tension-Free Vaginal Tape (TVT) sling when placed as a standalone procedure in comparison to placement at the time of a sacrocolpopexy procedure.

Methods: This was a single-center retrospective cohort study comparing the success of a TVT sling when performed alone (group 1) versus concomitant placement during a sacrocolpopexy (group 2). TVT failure was classified as the need for any additional procedures. The primary outcome was the need for an additional procedure for stress incontinence after 12 weeks post-operation or longer.
Results: There were 160 patients (47.8%) in group 1 and 175 patients (52.2%) in group 2. Group 2 was older ($P < 0.01$) and composed of a larger percentage of White women ($P = 0.02$). Group 1 was more obese ($P < 0.01$). There were no significant differences between the two groups when looking at factors including hypertension, diabetes mellitus, other comorbidities, prior abdominal surgeries, prior hysterectomy, gravidity, and parity. In group 1, 4 patients (3%) had failure of TVT at 12 weeks or longer postoperative compared to 15 patients (9%) in group 2. Patients in group 2 had an odds ratio of 3.63 for TVT failure ($P = 0.03$, CI 1.16 - 11.38). Unexpectedly, hypertension had an odds ratio of 4.18 ($P = 0.02$, CI 1.29 - 13.58) for TVT failure at 12 weeks or later. Data were analyzed using the student's t-test, chi-squared test, and logistic regression.
Conclusions: We observed a statistically significant difference in the rate of failure between those who had TVT alone and TVT at the time of sacrocolpopexy. TVT performed at the time of sacrocolpopexy was associated with a higher failure rate.



Logistic Regression of Failure (Need for intervention after 12 wks.)

Characteristic	Odds Ratio	p-value	95% CI
TVT with sacrocolpopexy	3.63	0.03	1.16, 11.38
Age (yrs.)	1.02	0.31	0.98, 1.07
Hypertension	4.18	0.02	1.29, 13.58

Disclosures: Felicia Drouillard: None, Gabriella Rustia: None, Muhammad Aslam: None

Poster 15
DO WOMEN WITH ABNORMAL POSTPARTUM PELVIC FLOOR RECOVERY HAVE PELVIC FLOOR SYMPTOMS FOLLOWING BIRTH?

M. Duarte Thibault[1], L. Kane Low[2], G. Kolenic[1], D. Fenner[1], P. Fairchild[3]. *University of Michigan[1], University of MIchigan School of Nursing[2], University of Michigan Hospitals[3]*

Objective: To determine if screening for pelvic floor dysfunction during the postpartum period can predict abnormal pelvic floor recovery at 6 months after delivery.
Methods: Women were recruited as part of an ongoing longitudinal study looking at recovery from high-risk vaginal birth (HVB). We included participants having had a first vaginal birth with any of the following risk factors: operative delivery, anal sphincter laceration, episiotomy, and/or pushing ≥150 minutes. A control group included participants who had a cesarean delivery without prior history of second stage labor. All participants underwent pelvic floor evaluation with clinical exams, pelvic floor ultrasound, and completed questionnaires at 6 weeks and 6 months. The short-form Pelvic Floor Impact Questionnaire (PFIQ-7), Wexner Fecal Incontinence Scale (WFIS), the Urinary Incontinence Questionnaire (UIQ), and a validated question for prolapse evaluation "Do you feel a vaginal bulge" were used. A subset of women had questionnaire data from 2 week visits. Based on our prior work establishing a definition of abnormal recovery (IUJ 2020), we classified cases as having normal or abnormal recovery at 6 months postpartum. Normal recovery, abnormal recovery, and cesarean controls were then compared with Fisher's Exact Tests and Independent Samples t-tests on questionnaire responses.
Results: One hundred thirty-five women were included, 85 (63%) in the high-risk vaginal birth (HVB) group and 50 (37%) in the cesarean group (CD). In the HVB group at 6 months, 31 (23%) women met criteria for abnormal recovery and 54 (37%) had normal recovery. Two week questionnaire data was available for 66 (48.8%); 13 (19.7%) abnormal recovery, 27 (40.9%) normal recovery, and 26 (39.4%) cesarean deliveries. Women with abnormal recovery had higher mean PFIQ-7 scores than those with normal recovery at 2 weeks (63.7 ± 88.7 vs 33.5 ± 39.4, $P = 0.09$), 6 weeks (53.4 ± 72.7 vs 27.2 ± 42.1, $P = 0.04$), and 6 months (27.9 ± 52.7 vs 9.5 ± 19.5, $P = 0.02$), however differences did not meet the MID of 36. PFIQ-7 scores decrease significantly from 2 weeks to 6 months in women with normal recovery (33.7 ± 40.2 vs. 6.04 ± 11.9, $P < 0.001$), but not in abnormal recovery (68.25 ± 91.1 vs 30.2 ± 38.2, $P = 0.12$). In the abnormal recovery group, there is no significant decrease in PFIQ-7 scores between 2 weeks and 6 weeks (63.7 ± 88.7 vs 57.87 ± 83.4, $P = 0.64$). At 2 weeks, bothersome bulge was reported by 46.2% of women with abnormal recovery compared to 14.8% of those recovering normally ($P = 0.05$) and 11.5% of CD controls ($P = 0.04$). However, at 6 weeks and 6 months there was no difference in bulge symptoms between groups. At 6 months, 28 (20.7%) women reported anal incontinence. WFIS mean scores were overall low, but higher in those with abnormal vs normal recovery (5.50 vs 2.46, $P = 0.04$). There were not differences in WFIS at other time points.
Conclusions: At 2 weeks postpartum, women with abnormal recovery are more likely to report symptomatic vaginal bulge but do not have other significant differences in subjective symptoms when compared to women with normal recovery. While there are differences in PFIQ scores at 6 weeks and 6 months, the magnitude of differences does not meet the MID for the questionnaire. Women with abnormal recovery were more likely to not have statistically significant improvement in quality of life measures over time. Similar to other studies, assessment of symptoms alone at 6 weeks does not adequately screen for abnormal pelvic floor recovery in a HVB cohort, indicating a need for objective measures instead.

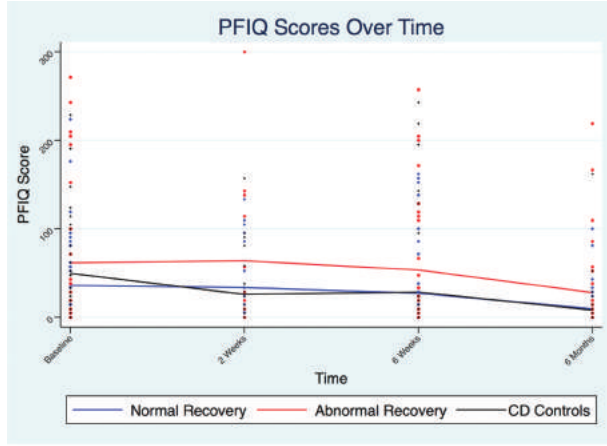


Figure 1. PFIQ-7 scores over time in normal recovery, abnormal recovery, and controls.

Disclosures: Mary Duarte Thibault: None, Lisa Kane Low: None, Giselle Kolenic: None, Dee Fenner: None, Pamela Fairchild: None

Poster 16
EMERGENCY DEPARTMENT VISITS FOR GENITAL FOREIGN BODIES: NOT UNIQUE TO MEN

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Objective: Males presenting to the Emergency Department (ED) with retained rectal and/or genitourinary foreign objects (FO) from sexual behavior is a frequently encountered event. However, less is known about this behavior in women. This study was conducted to determine the frequency of ED visits for vaginal and rectal foreign bodies from erotic behavior among women in a large population-based dataset.
Methods: All ED encounters in the state of California where women presented with retained vaginal or rectal foreign objects were identified from January

2013 through December 2018 from the Office of Statewide Health Planning and Development (OSHPD) datasets using appropriate International Classification of Disease (ICD) and Current Procedural Terminology (CPT codes). Females younger than 18 years of age and cases where physical abuse was suspected were excluded. Only cases where there was specific coding indicating the object was placed for non-medical reasons by the patient with unintentional requirement for medical attention were included. Patient's demographics, clinical and surgical data, and the payor status were analyzed.

Results: Between January 2013 and December 2018, 8,976 and 886 ED visits for retained FO (that are not a medical device) in the vagina and rectum were identified, respectively. Five women (0.05%) presented with both vaginal and rectal FO. In 55 (0.61%) cases of vaginally retained objects and in 93 (10.4%) cases of rectally retained objects, surgical intervention with anesthesia was required for their removal. White and Hispanic women were more frequently seen for retention of either vaginal or rectal FO compared to African-American or Asian patients. A total of 247 women had multiple visits to the ED for FO in the vagina, and only 32 women had repeat visits to ED for retained rectal foreign bodies.

Conclusions: Paraphilia of inserting FO into bodily orifices with the purpose of sexual stimulation is not uncommon among women. More research is needed to improve providers awareness of the diversity of sexual practices among women, facilitate open conversations and promote sexual safety.

Disclosures: Alexandra Dubinskaya: None, Kai Dallas: None, Victoria Scott: None, Karyn Eilber: None, Jennifer Anger: None

Poster 17

FEMALE SEXUAL DYSFUNCTION RESOURCES: WOMEN AND HEALTH CARE PROVIDERS NEED MORE OPTIONS

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Objective: Female sexual dysfunction (FSD) is an orphaned field due to numerous barriers faced by both providers and patients. Internet platforms, such as mobile applications, are potential tools to overcome these barriers and improve patient access to education and management options for FSD. The purpose of this review is to identify existing applications addressing female sexual health and evaluate their educational content and services.

Methods: We searched the internet and Apple App Store for key words including: "sexual wellness app for women", "female sexual health app", "best sex apps for women", "sexual health for women", "sexual health", "sexual wellness". A panel of female pelvic medicine and reconstructive surgery experts reviewed the apps for quality of content, scientific basis of provided information, interactivity, usability and whether they would recommend it as a reference tool for patients.

Results: Of the 204 apps identified, 182 were excluded based on unrelated content (sex frequency trackers, ovulation trackers, sex games for couples, etc.). Two applications did not work and three were meant to be used with a vibrator. Total of 17 apps were analyzed and divided into five categories: educational (6), emotions and communication (2), relaxation and meditation (4), general sexual health (2), and social and fun (3). Among these 17 apps, eight required either a one-time payment ($4.99- 9.99) or annual subscription ($23-120) and two apps were advertisement driven. The apps from the educational category were reviewed in further details. All of the educational apps provided scientific information in collaboration with health experts, however only three offered interactive features. When assessed for usability, one app received good (70) and five received excellent (97.5) scores based on the System Usability Scale (SUS). The majority of the apps (5) provided information on pathology and treatments of orgasmic dysfunction, but only one app, created by a physician, provided information on all categories of female sexual dysfunctions. The reviewers identified only one app that they would recommend as a credible resource for patients to use.

Conclusions: Internet apps provide an ideal platform for women to learn about sexual health and female sexual dysfunction, which is rarely addressed by their healthcare providers. Apps may also serve as a valuable reference for providers. Our review of relevant apps available on the Apple App Store revealed only six with evidence-based information, and only one that would be recommended to patients by experts in the field. Clearly, there is a need for more accessible, educational resources addressing female sexual dysfunction for patients and providers.

Disclosures: Alexandra Dubinskaya: None, Kai Dallas: None, Tara Cohen: None, Karyn Eilber: None, Jennifer Anger: None, Victoria Scott: None

Poster 18

EDUCATION OF FEMALE PELVIC MEDICINE RECONSTRUCTIVE SURGERY FELLOWS THROUGH THE COVID-19 PANDEMIC

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Objective: While some surgical subspecialties have investigated the impact of the COVID-19 pandemic on the education of their residents and fellows, the field of urogynecology has mostly yet to explore this. We surveyed current FPMRS fellows to better describe some of the adversities they have faced during this time and how the pandemic has impacted their training.

Methods: An original 24 item questionnaire to assess the impact of COVID-19 in FMPRS fellow- residents was created using Qualtrics™ (Provo, Utah, USA). The survey collected information from different domains, including demographics, year of training, burnout effect, changes in the residency program, and its impact on the number of surgeries. The questionnaire was distributed to all residency Program Directors (PD) and/or Program Coordinators (PC). Then the link was forwarded to the residents.

Results: Seventy-five fellows completed the survey. Only 22.3% of the fellows reported that they took direct care of a patient who was diagnosed with COVID 19. During the pandemic the fellows reported a drastic decrease of the number of cases per week, with most of them doing just on average 1 to 3 cases (79.3%) and just a minority doing more than 4 (20.7%). 65.4% of the fellows reported that they were suggested to be on research block or were pulled away from clinical duties at some point during the pandemic. None were asked to take vacations and 25.2% were asked to cover gyn cases and gyn emergencies. Most of the fellows reported that they felt that at some extent their training has been affected (75%). Despite the residents had no more working hours compared to prior to the pandemic, most of them (77.8%) reported feeling more burned out than prior to the pandemic. All the graduating fellows reported some concerns about their ability to find jobs with 66.6% of them reporting that there are not enough jobs available and the rest reporting concerns about the future of the economy in the country.

Conclusions: The COVID-19 pandemic has influenced medical education, including the FPMRS fellowship training. Overall, the fellows reported doing fewer surgeries. Still, they considered that the decreased number of surgeries will not have an overall impact on their training. The pandemic's long-term effect on the fellow's training is unknown, and further studies will be necessary to assess this.

Top 5 states respondents	
Massachusetts	21.3%
California	17.4%
Illinois	14.2%
New York	12.3%
Texas	9.2%
Post-graduate year	
PGY-5	33.3%
PGY-6	11.1%
PGY-7	16.6%
Gender	
Female	53.5%
Male	22.5%
Preferred to not answer	24%
Partner working in healthcare	
Yes	80%
No	20%
Had COVID or another member of the immediate family	
Yes	27.9%
Maybe	5.5%
No	66.6%

Table 1: Demographics of the participants in the survey

Number of urogynecology cases per week prior to COVID pandemic	
1-3 cases	24.3%
4-6 cases	54%
>6 cases	21.7%
Number of urogynecology cases per week during COVID pandemic	
1-3 cases	79.3%
>4 cases	20.7%

Table 2: Number of cases before and during COVID pandemic

Disclosures: Kelly Devlin: None, Kinza Noor: None, Robert Shapiro: Boston Scientific: Proctor: Self, Omar Garcia: None

Poster 19
WHO'S TWEETING WHAT? A QUALITATIVE, CROSS-SECTIONAL STUDY COMPARING TWITTER PATTERNS BETWEEN HEALTH CARE PROFESSIONALS AND PATIENTS

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Objective: The objective of this study was to explore the patterns of Twitter Social Media use for popular urogynecology hashtags between physicians, patients, and allied health professionals. Specifically, differences in intended audience, content themes and hashtags based on authorship.

Methods: 12 hashtags derived from the UroGynecology Tag Ontology project were used as search terms to select Twitter posts. Up to 5 posts with the highest Twitter engagement for each hashtag written in English by an individual physician, patient, or allied health professional (AHP) were included. Posts were analyzed using Dedoose qualitative analytic software by author, search hashtag, intended audience and themes. Intended audience included the general public, health professionals, and patients. Themes were coded from post excerpts. Interrater reliability was ensured by two independent coders.

Results: 109 posts met inclusion criteria. 45 (41%) were written by physicians, 44 (40%) by patients, and 20 (18.3%) by AHPs.

Physician posts were mainly intended for peers/other health professionals (64%) with only 18% for patients and 18% for the general public. Patients posted to the general public (57%), other patients (36%) and rarely health professionals (7%).

Among all posts, the most common themes were awareness/advocacy (21%), personal experience (21%), and promotion of self-work or a peer (11%). Awareness/advocacy frequently co-occurred with personal experience (23%) and education (18%) themes. Personal experience theme also frequently co-occurred with healthcare dissatisfaction (26%).

Major themes in physician tweets were awareness/advocacy (23%), promotion (16%), academic peer society (9%) and academic peer discussion (9%). For patients, major themes were personal experience (40%), awareness/advocacy (16%), and humor (10%).

Themes were filtered by author and intended audience. When physicians posted to healthcare providers, the main themes were awareness/advocacy, promotion, academic peer discussion, and academic society conference. When both physicians and patients posted to the general public, the main themes were awareness/advocacy, personal experience, and humor. When physicians posted to patients the main themes were promotion, education, and symptoms. Conversely, when patients directed their post at health care professionals, the themes were personal experiences, complication, health care dissatisfaction, personal experience, question or treatment.

Of the 12 hashtags, #pelvicpain and #postpartum yielded the most posts with equal author representation. Overall physicians regularly utilized search hashtags, except for #interstitialcystitis, #UTI, and #fourthdegreetear which were predominately posted by patients. Physicians were the only authors to use #fpmrs.

Conclusions: Awareness/advocacy was the most common theme posted by physicians and patients alike. However, these groups were unlikely to engage with one another on Twitter. This study identifies an opportunity for health professionals to raise awareness and promote education of pelvic floor disorders by engaging with the patient experience and addressing their concerns with the health care system.

Disclosures: Alexa Dzienny: None, Charelle Carter-Brooks: None, Nicole Lang: None, Coralee Toal: None

Poster 20
PREVENTION OF PELVIC FLOOR INJURY: A SURVEY OF OBSTETRICIANS ABOUT DELIVERY ROOM PRACTICES

A. Fehlmann[1], M.E. Clermont[1], B. Reichetzer[2]. *CHUM[1], University of Montreal[2]*

Objective: Some obstretical practices are known to be at higher risk to the pelvic floor, such as assisted vaginal delivery by forceps, which increases the risk of levator ani avulsion and obstetrical anal sphincter injury (OASI). Delivery registries can help understand delivery room practices and reveal areas of improvement that could reduce pelvic floor lesions. In our state, the rate of obstetrical trauma during assisted vaginal delivery was 29.2% in 2019–2020, which is significantly higher than in the rest of our country. There is no prior study to understand this discrepancy. It is critical to evaluate obstetrical practices in delivery rooms to encourage preventive measures. Our objective was to evaluate delivery room practices of obstetricians that could impact the rate of obstetrical trauma.

Methods: We conducted a cross-sectional online survey of obstetrician and gynecologist about their practices in delivery rooms. The questionnaire focused on assisted-vaginal delivery, episiotomy, diagnosis of OASI, and shared decision-making. We performed a descriptive analysis and a content analysis of the written comments.

Results: The survey response rate was 24.8%, including 10% of incomplete questionnaires. The population was representative of different types of practices, from regional hospitals to university hospitals (Table 1). Fifty-five percent of respondents declared using forceps mostly, while 23% used mostly vacuum and 22% used both instruments equally. Only 16% of respondents performed an episiotomy systematically for forceps-assisted vaginal deliveries, while 26% performed episiotomy almost never in this case. Three-quarters of respondents performed a mediolateral episiotomy when indicated, but only 26% with an angle superior to 60°. A third of respondents stated performing a rectal examination frequently or always before a second-degree perineal repair, while 93% only in the case of a suspicion of an OASI. Only 38% of respondents accepted to reduce forceps use in assisted vaginal delivery to prevent long-term pelvic floor injuries. The principal reasons to refuse reducing forceps were concerns about an increased risk of cesarean sections, the higher risk of failure of assisted vaginal delivery with vacuum, and the number of clinical situations where forceps

Table 1 – Characteristics of respondents

	Respondents (% of population[a]) (N=143)
Years of practices	
Less than 5 years	28 (19.6)
Between 5 and 15 years	48 (33.6)
Between 15 and 25 years	37 (25.9)
More than 25 years	30 (21.0)
Type of institution	
Academic health centre	47 (32.9)
University affiliated hospital	55 (38.5)
Regional hospital	33 (23.1)
General care hospital	8 (5.6)
Level of maternity of the institution	
Primary centre (level I, > 36 WA)	28 (19.6)
Secondary centre (level II, > 30 WA)	74 (51.8)
Tertiary (level III, no gestational age limit)	40 (28.0)
Deliveries per year in the institution	
Less than 500 deliveries per year	7 (4.9)
500 to 1499 deliveries per year	38 (25.2)
1500 to 2999 deliveries per year	48 (33.6)
More than 3000 deliveries per year	51 (35.7)
Work with residents training in ObGyn	
Never	15 (10.5)
Occasionally	67 (46.9)
Frequently	19 (13.3)
Always	42 (29.4)
Fellowship	
No	82 (57.3)
Yes	61 (42.7)
Maternal-fetal medicine	*27 (44.3)[b]*
Minimally invasive surgery	*11 (18.0)[b]*
Gynaecologic reproductive endocrinology and infertility	*5 (8.2)[b]*
Urogynaecology	*6 (9.8)[b]*
Other	*12 (19.7)[b]*

WA, weeks of amenorrhea; ObGyn, obstetrics and gynecology
[a] The sum of percentages cannot reach one hundred because of missing values.
[b] These percentages concern only the "yes" answer.

are more indicated than the vacuum. Finally, 95% of respondents reported to inform the patient and obtain oral consent before assisted vaginal delivery.
Conclusions: This survey helps to understand some obstetrical practices, which can be improved to limit pelvic floor injuries. We need to develop suitable continuous learning to reduce severe pelvic floor and perineal lesions.

Disclosures: Aurore Fehlmann: None, Marie-Eve Clermont: None, Barbara Reichetzer: None

Poster 21
CHANGES IN PRACTICE PATTERNS IN UROGYNECOLOGY CASES IN MASSACHUSETTS: IS THERE A TREND TOWARD SUBSPECIALIZATION?

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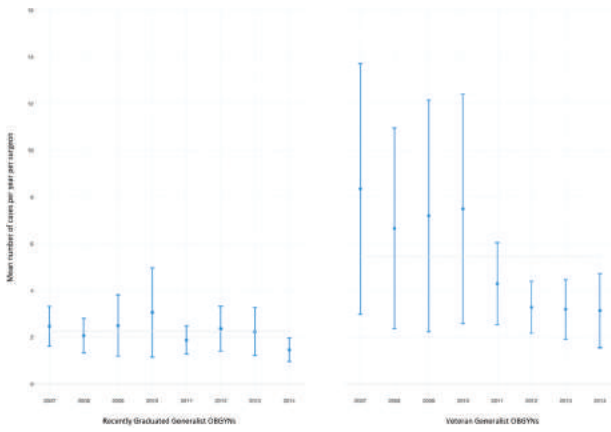
Objective: Other surgical specialties have observed that accreditation of a new subspecialty is associated with a siphoning-off of surgical case volume among those who completed residency but did not pursue fellowship training. Female Pelvic Medicine and Reconstructive Surgery (FPMRS) gained subspecialty certification in 2012, with providers offering a relatively large number of procedures ranging from minor to complex. We aimed to assess trends in urogynecologic surgical volume among recently graduated generalist OBGYNs, veteran generalist OBGYNs, and board-certified FPMRS over eight years, using a large statewide database.
Methods: Retrospective, statewide data from 2007-2014 was obtained from the Massachusetts Center for Health Information Analysis. All pelvic floor procedures for prolapse or stress incontinence performed in Massachusetts, regardless of payer type, were included. Surgeon identifiers were cross-referenced to a second dataset with provider demographics. Pelvic floor surgeries performed by general Obstetrics and Gynecology specialists were stratified by seniority and compared with each other and with fellowship trained Female Pelvic Surgery and Reproductive Medicine (FPMRS) subspecialists. Generalist OBGYNs within five years of residency graduation were considered "recently graduated generalist OBGYNs". Those 20 to 25 years out of residency during the study period, were categorized as "veteran generalist OBGYNs". Obstetrician Gynecologists who had or went on to have FPMRS board-certification comprised the third group.
Results: Combined inpatient and outpatient databases revealed 16,423 pelvic floor surgeries performed by 653 physicians, including 7,299 by 37 physicians who were fellowship trained in FPMRS. Obstetrician Gynecologists (n = 443) performed 6,287 cases, an average of 1.8 cases per generalist per year, compared with urogynecologists who averaged 24.7 cases per year in the same time frame. The number of fellowship-trained subspecialists increased over the study period, rising from 2 in 2007 to a maximum of 37 in 2014. Veteran generalists performed significantly more urogynecology cases than recently graduated generalists (5.7 +/- 1.4 vs 2.3 +/- 0.4, $P < 0.01$). The number of prolapse and incontinence surgeries performed by generalist OBGYNs in Massachusetts decreased starting in 2012, the year that FPMRS became a board-certified subspecialty (mean of 9.9 +/- 5.0 per year 2007-2011 vs 3.9 +/- 1.1 per year 2012-2014, $P = 0.02$). However, there was no significant difference in urogynecology case volume among FPMRS before compared to after 2012 ($P = 0.6$).
Conclusions: Significantly more urogynecology procedures were performed by veteran generalist OBGYNs compared to their recently graduated colleagues over the years 2007 to 2014 in Massachusetts. The 2012 board-certification of FMRS coincided with a significant decline in urogynecologic case volume among generalist OBGYNs.



Disclosures: Erin Franks: None, Tyler Muffly: None, Lauren Cadish: None, Georg Georg Kropat: None

Poster 22
PREVALENCE OF URINARY INCONTINENCE IN FEMALE PHYSICIANS IN SURGICAL VERSUS NON-SURGICAL SPECIALTIES

M. Gabra[1], I. Addis[2]. *University of Arizona[1], University of Arizona College of Medicine[2]*

Objective: The primary objective of this study was to determine if female physicians in surgical specialties have a higher rat of urinary incontinence compared to physicians in non-surgical subspecialties. The secondary objective was to assess the association of surgical subspecialty with prolapse and fecal incontinence symptoms.
Methods: Female resident, fellow, and attending physicians ≥20 years old across the nation were asked to fill out a questionnaire assessing urinary habits and pelvic floor disorder symptoms. Chi square and Student t-test were used as appropriate.
Results: A total of 197 women were included in the analysis; 114 were in non-surgical specialties and 83 were in surgical specialties. Baseline characteristics were similar between the two cohorts. Physicians in surgical specialties had statistically significant longer workday and workweek lengths ($P < 0.01$). In addition, physicians in surgical specialties were more likely to report their job decreased their frequency of urination ($P = 0.03$). Overall, 82 (41.6%) participants reported urinary incontinence, 31 (15.7%) reported anal incontinence, and 5 (2.5%) reported pelvic organ prolapse symptoms. There was no significant difference in the rate of urinary incontinence in surgical vs non-surgical specialties (41.0% vs 42.1%, $P = 0.87$). Similarly there was no statistical difference in the rate of anal incontinence or pelvic organ prolapse between the two cohorts ($P = 0.36$ and $P = 0.29$, respectively).
Conclusions: Female physicians in surgical specialties had a similar rate of urinary incontinence, anal incontinence, and pelvic organ prolapse compared to physicians in non-surgical specialties.

Table 1. Prevalence of pelvic floor disorders in physicians

	Non-surgical specialty (N=114)	Surgical specialty (N= 83)	*p*-value
Urinary incontinence	48 (42.1)	34 (41.0)	0.87
Stress Urinary incontinence	23 (20.2)	20 (24.1)	0.51
Urgency Urinary incontinence	9 (7.9)	7 (8.4)	0.89
Mixed urinary incontinence	12 (10.5)	5 (6.0)	0.27
Anal incontinence	20 (17.5)	11 (13.3)	0.36
Pelvic organ prolapse	4 (3.5)	1 (1.2)	0.29

Disclosures: Martina Gabra: None, Ilana Addis: None

Poster 23
TELEMEDICINE UTILIZATION DURING THE COVID-19 PANDEMIC AMONG FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY PROVIDERS IN THE UNITED STATES

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Objective: The primary objective of this study was to determine the change in utilization of telemedicine among Female Pelvic Medicine and Reconstructive Surgery (FPMRS) providers before and during the COVID-19 pandemic. Our secondary objective was to assess providers' attitudes regarding telemedicine.
Methods: An anonymous, internet-based survey was administered to FPMRS providers across the United States from May 12, 2020 to June 1, 2020. Providers were invited through email to complete a 25-item survey regarding rates of telemedicine utilization and perceived barriers and advantages of its use. The rates of telemedicine utilization before and during COVID-19 were assessed with the following questions: "What portion of your practice involved use of telemedicine prior to COVID-19 Pandemic?" and "What portion of your practice involved use of telemedicine during COVID-19 Pandemic?" Respondents were asked about their anticipated rate of future telemedicine use, in percentage ranges.
Results: Two hundred eighty-two (27.6%) of 1020 FPMRS physicians completed the survey. A majority (90.5%) indicated that COVID-19 significantly

disrupted normal workflow. The majority reported less than 5% utilization of telemedicine pre-pandemic (N = 239; 94%). In contrast, during the pandemic, most respondents utilized telemedicine for greater than 50% of their practice (N = 163; 65%). Telemedicine use was anticipated to be significantly higher after COVID-19 compared with prior to COVID-19 (mean 2.2 vs 1.1; $P < 0.0001$). The most common perceived barriers to telehealth were technical challenges (64.0%) and concern for insufficient reimbursement (62.4%). Respondents largely agreed that telemedicine was useful for medication follow-ups (97.5%), established patient follow-ups (94.7%), and discussion of new symptoms or concerns (74.3%).

Conclusions: Results show that telemedicine use significantly increased among FPMRS providers during the COVID-19 pandemic. Utilization post-pandemic is anticipated to increase compared with pre-pandemic, but decreased compared with use during. Access to care was considered a major advantage. Technical challenges, loss of patient contact and reimbursement concerns were noted to be significant barriers to use. As health care providers, it is imperative to continually address new barriers to care, and the increased utilization of telemedicine has allowed delivery of medical care during this pandemic.

Disclosures: Bertille Gaigbe-Togbe: None, Cynelle Kunkle: None, Jennifer Hallock: None, Guillaume Stoffels: None, Chandhu Paka: None

Poster 24
TRENDS AMONG FPMRS FELLOWSHIPS AND GRADUATES

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Objective: To determine how many Female Pelvic Medicine and Reconstructive Surgery (FPMRS) fellowships graduate outside the department specialty.

Methods: An IRB-approved survey of 15 FPMRS Urology programs and 54 FPMRS Gynecology programs utilizing Qualtrics® was conducted from January 8 through March 9, 2021. Program directors were recruited via email and non-responders were contacted a total of three times. Participants were asked to identify their ACGME core specialty approval and their program characteristics including accreditation year, faculty composition, number and background of fellows accepted since accreditation and select case numbers. Depending on whether they identified as a Urology-based (UBP) or Gynecology-based (GBP) program, they were asked a series of specialty-specific questions. Differences in the frequencies of responses between UBP and GBP were analyzed using STATA/MP Version 16.1.

Results: Fifty-two (75%, N = 69) FPMRS program directors responded to the survey representing 75.9% of the GBPs and 73.3% of the UBPs. Responses for the GBP and UBP are shown in Table 1. Comparing the two groups, 68.3% of GBPs and 45.4% of UBPs accept both gynecology and urology-trained applicants.

Within the GBP cohort, there have been 13 urology-trained graduates (range 0-2) since ACGME accreditation. The most commonly cited barriers to accepting urology applicants was limited gynecologic knowledge/experience (n = 14), too few applicants (n = 5), and scheduling difficulties due to differences in length of training (n = 11). GBPs reported 90.2% of their graduates log >30 hysterectomies whereas only 7.3% log three or more urinary diversions.

Among the UBP, there have been 16 gynecology-trained graduates (range 2–7) since ACGME accreditation. Lack of urologic clinical knowledge (n = 4) and differences in training length (n = 2) were cited as barriers to accepting gynecology-trained applicants. Three (27%) urology-based programs reported that their graduates log >30 hysterectomies while eight (72.7%) reported that graduates log three or more urinary diversions.

Conclusions: Despite the majority of FPMRS programs stating they accept gynecology or urology-trained applicants, very few fellows graduate from outside specialty FPMRS training programs. There are multiple barriers identified that may prevent FPMRS training programs from taking trainees outside of their residency specialty including lack of clinical knowledge/experience, training length differences, and paucity of applicants outside of the FPMRS core program. FPMRS training experience varies by the type of program with GBP logging fewer urinary diversions and UBP logging fewer hysterectomies.

Table 1: Responses by fellowship program type

	Urology-Based Program (N=15)	Gynecology-Based Program (N=54)	Total (N=69)
Total Responses (%)	11 (73.3)	41 (75.9)	52 (75.0)
Accreditation by 2013 (%)	8 (72.7)	24 (58.5)	32 (61.5)
Types of applicants			
Gynecologists only (%)	0	14 (34.1)	14 (26.9)
Urologists only (%)	6 (54.5)	0	6 (11.5)
Both (%)	5 (45.5)	28 (68.3)	33 (63.5)
Procedures			
>30 hysterectomies (%)	3 (27.3)	37 (90.2)	40 (76.9)
≥3 urinary diversions (%)	8 (72.7)	3 (7.3)	11 (21.2)

Disclosures: Kristen Gerjevic: None, Samantha Auty: None, E. Ann Gormley: None, Eileen Brandes: None, Kris Strohbehn: Reia, LLC: Grant/Research Support: Self, MedScape eMedicine: Chief Editor, Section on FPMRS: Self

Poster 25
DESCRIPTION OF AN ANATOMIC VARIATION OF THE SUB-URETHRA AND ASSOCIATION WITH DEMOGRAPHIC CHARACTERISTICS AND STRESS URINARY INCONTINENCE

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Objective: We have observed in our clinical practice an anatomical variation in the anterior vaginal wall which presents as two soft tissue protuberances on either side of the midline at the level of the urethra. These structures are not described or discussed elsewhere in the medical literature. We aim to determine the association between these sub-urethral tubercles and demographic data, vaginal parity, stress urinary incontinence (SUI) and pelvic organ prolapse (POP).

Methods: We performed a prospective observational cohort study of women presenting to either a benign gynecologist or urogynecologist in 2 hospital-based OBGYN clinics from 2019-2021. Patients were eligible to participate if older than 18 years old, English-speaking, and presenting with a chief complaint that would include a pelvic exam. Exclusion criteria included pregnant women, women less than 6 weeks postpartum and women who could not consent to a pelvic exam. Patients who consented to participation completed the UDI-6 questionnaire. During their pelvic examination, examiner noted presence or absence of sub-urethral tubercles and performed a modified POP-Q examination. Demographic data along with medical and surgical history were obtained for each patient.

Demographic characteristics, UDI-6 scores, and POP-Q scores of patients with sub-urethral tubercles were compared to patients without tubercles using Chi-square test and Student's t-test. Multivariable logistic regression was used to identify demographic characteristics associated with sub-urethral tubercles.

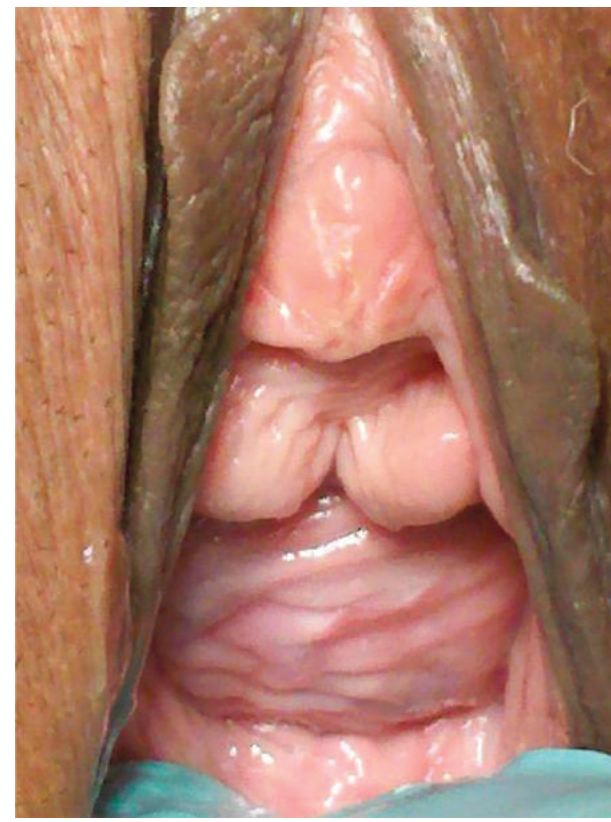

Table. Characteristics and outcomes of patients with versus without sub-urethral tubercles

Patient Characteristics and Outcomes	With Sub-Urethral Tubercles (N=23)	Without Sub-Urethral Tubercles (N=79)	P Value
Age (years)	45.8 ± 17.1	51.7 ± 15.1	0.11
Body mass index (kg/m^2)[a]	30.1 ± 7.2	30.4 ± 9.7	0.90
Vaginal parity[b]	1.8 ± 1.3	1.5 ± 1.3	0.40
Clinic site			0.04
Urogynecology clinic	10 (43.5%)	53 (67.1%)	
General gynecology clinic	13 (56.5%)	26 (32.9%)	
Urogenital Distress Inventory-6			
Overall score	23.2 ± 16.8	24.9 ± 19.1	0.69
Urine leakage related to physical activity, coughing or sneezing	0.9 ± 1.2	1.3 ± 1.2	0.21
Pelvic Organ Prolapse Quantification (POP-Q)[b]			
Anterior wall Ba	-1.7 ± 1.6	-1.6 ± 2.0	0.85
Posterior wall Bp	-2.0 ± 1.1	-2.2 ± 1.2	0.49

Results are reported as mean ± standard deviation or n (%).

[a] N=3 patients had missing data.
[b] N=1 patients had missing data.

Results: We recruited a total of 102 patients. Of these patients, 23 (22.5%) were noted to have sub-urethral tubercles on examination. Bivariate analysis and multivariable logistic regression showed no significant association between patients' age, body mass index, or vaginal parity with the likelihood of having sub-urethral tubercles.

All recruited patients completed UDI-6 questionnaires, which were then evaluated for total score and individual question score. Patients with sub-urethral tubercles reported similar scores on UDI-6 questions pertaining to SUI symptoms (mean = 1.3 versus 0.9, $P = 0.21$), as well as overall score on the questionnaire (mean = 24.9 versus 23.2, $P = 0.69$) compared to patients without sub-urethral tubercles.

In terms of POP-Q scoring, patients with sub-urethral tubercles had similar anterior wall Ba score (mean = -1.7 versus -1.6, p = 0.85) and posterior wall Bp score (-2.0 versus -2.2, $P = 0.49$) compared to patients without sub-urethral tubercles.

Conclusions: The presence of sub-urethral tubercles was noted in many women presenting for gynecological care. We do not show a significant association between presence of these structures and demographic characteristics or SUI. Further research may help delineate the importance of this anatomical variation.

Disclosures: Feven Getaneh: None, Xiao Xu: None, Oz Harmanli: None

Poster 26
ANTERIOR APPROACH TO BILATERAL SACROSPINOUS LIGAMENT HYSTEROPEXY

K. Hamilton[1], M. Murphy[2]. *Abington Hospital - Jefferson Health[1], The Institute for FPMRS[2]*

Objective: To report outcomes and experience with an anterior approach to bilateral sacrospinous ligament hysteropexy at a single center. In this era, when transvaginal mesh (TVM) for prolapse has been effectively removed as an option for patients who desire a transvaginal approach to hysteropexy, it is important for surgeons familiar with TVM hysteropexy to find viable alternatives for the patient population who would have previously been offered a mesh-based procedure.

Methods: A retrospective chart review of women who underwent anterior approach to bilateral sacrospinous ligament hysteropexy performed by a single surgeon including 6-month postoperative outcomes was performed. Patients who had a previous hysterectomy or an alternative surgical approach were excluded. Patients who did not complete 6-month follow-up were not included in the analysis of standardized quality of life (QOL) or POPQ outcomes. Patients completed QOL questionnaires including the PISQ, UDI, CRADI, POPDI, PFDI, and PFIQ and underwent POPQ exams at both the preoperative visit and the 6-month postoperative visit as per practice routine. Statistical analysis was performed using SPSS.

Results: 50 patients were included in the review, 30 patients completed in-person follow up and were included in the QOL and POPQ analysis. The mean age of the study population was 68.7 years with a mean BMI of 26.3 and mean parity of 2.7. 80% of patients underwent mid-urethral sling at the time of the procedure, while 66% had a posterior colporrhaphy performed, all patients underwent anterior colporrhaphy. No intraoperative complications were reported. Mean operative time was 124.9 minutes and mean EBL was 42.6 ml. 94% of patients underwent spinal anesthesia, while 6% required general anesthesia. Mean length of stay was 1.04 midnights. 7 patients required a foley catheter past 24 hours for postoperative voiding dysfunction (all resolved spontaneously) and 1 patient was diagnosed with a urinary tract infection postoperatively; no other complications were noted. At the 6-month postoperative visit there were statistically significant improvements in total scores for all QOL questionnaires except the PISQ (Table 1). There was a statistically significant improvement in the mean POPQ stage as well as Aa, Ba, C, D, Ap, and Bp. There was no significant change in TVL. Patients took the Surgical Satisfaction Questionnaire (SSQ-8) at the 6-month postoperative visit with a mean score of 90.08 out of 100.

Conclusions: Anterior approach to bilateral sacrospinous ligament hysteropexy improved the stage of prolapse and quality of life of patients who opted to undergo this surgery. There was a low complication rate and patients were satisfied with the results of their treatment at 6 months. For those surgeons familiar with transvaginal anterior mesh hysteropexy, based on this early data, this approach is a viable surgical option.

Table 1. Subjective Improvement in Validated Survey Scores of Patients who underwent Anterior Approach to Bilateral Sacrospinous Hysteropexy.

n=30	Total Pre Op Mean (SD)	Total Post Op Mean (SD)	Improvement Mean (SD)	P-value
PISQ	33.9 (21.3)	25.55 (12.9)	1.6 (8.5)	0.089
UDI	33.3 (24.7)	15.0 (15.2)	18.3 (24.0)	< 0.001
CRADI	19.6 (19.9)	11.0 (12.9)	8.6 (14.5)	0.003
POPDI	36.8 (24.3)	5.9 (7.3)	30.9 (23.3)	< 0.001
PFDI	89.6 (57.0)	31.9 (29.8)	57.8 (49.9)	< 0.001
PFIQ	47.6 (46.3)	10.1 (18.9)	37.4 (38.6)	< 0.001

Disclosures: Kacey Hamilton: None, Miles Murphy: Boston Scientific: Consultant: Self, Johnson & Johnson: Expert Witness: Self

Poster 27
RISK FACTORS FOR POOR WOUND HEALING AFTER VAGINAL DELIVERY: A RETROSPECTIVE COHORT STUDY

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Objective: Obstetric lacerations can be a significant source of morbidity and burden, particularly when associated with poor wound healing. The aim of this study was to evaluate risk factors for wound complications following obstetric laceration.

Methods: At our institution, we have a dedicated postpartum recovery clinic for women who suffer complex lacerations at the time of vaginal delivery, including obstetric anal sphincter injury (OASIS) and vulvovaginal wound complications. We conducted a retrospective cohort study of a sample of patients who presented to this clinic between January 1, 2017 and May 20, 2020 and assessed intrapartum and postpartum variables for association with wound complication. Our primary outcome was wound complication following vaginal delivery, defined as persistent pathologic granulation tissue, infection, dehiscence, surgical intervention, or readmission for perineum care. Chi-square test was used for categorical predictor variables and logistic regression was used for continuous predictor variables.

Results: We reviewed the charts of 125 patients who attended postpartum recovery clinic. The mean age was 31.4 years (± 4.2). The majority (63.2%) identified as white. The mean BMI was 26 (± 4.36). Median parity was 0 (range 0-2) and 15.2% of patients had a prior vaginal delivery while 6.4% had a prior cesarean delivery. The rates of perineal laceration were as follows: first degree 6.4%, second degree 37.6%, third degree 47.2% and fourth degree 4.8%. 79 patients (63.2%) had a wound complication by our definition. Of those, 40 (50.6%) were seen for routine follow up of OASIS and 39 (49.4%) were seen for a particular concern regarding wound healing. The median number of visits to postpartum recovery clinic was 3 (range 1-19). Median pain score at the first visit was 2 and at the last visit was 0. Seventeen patients (13.6%) required surgical intervention. Median Edinburgh Postnatal Depression Scale score was 4 (range 0-16). Table 1 shows the association between evaluated risk factors and wound complication. Of the risk factors reviewed, only BMI showed a statistically significant association with occurrence of wound complication. Higher BMI was marginally associated with decreased wound complication.

Conclusions: Poor wound healing following vaginal delivery is a common event. The lack of obvious risk factors for poor wound healing highlights the complexity of postpartum perineal care, making it difficult to predict who

may require additional care or intervention. Patients who have undergone a complex perineal tear may therefore benefit from close follow up to identify signs of poor wound healing as they arise.

Table 1: Historical factors and association with wound complication following vaginal delivery

Risk factor considered (n)	Risk ratio (95% CI)
Antibiotics during repair (41)	0.88 (0.65 – 1.19)
Breastfeeding (112)	1.98 (0.88 – 4.46)
Episiotomy (15)	0.94 (0.61 – 1.46)
Operative delivery (28)	1.17 (0.88 – 1.56)
Chorioamnionitis (12)	0.92 (0.56 – 1.51)
Placement of vaginal packing (18)	1.06 (0.74 – 1.52)
Group B Strep positive (22)	0.75 (0.49 – 1.17)
Physician repair (110)	1.21 (0.74 – 1.98)
Gestational diabetes (3)	1.06 (0.47 – 2.38)
Risk factor considered	**Odds ratio (95% CI)**
BMI	0.906 (0.830 – 0.989)
Length of second stage	1.004 (0.999 – 1.009)
Length of rupture time	1.000 (1.000 – 1.001)
Estimated blood loss	1.000 (0.999 – 1.001)

Disclosures: Daisy Hassani: None, Catherine Hermann: None, Caroline Cox: None, Pamela Levin: None

Poster 28
PATIENT PERSPECTIVES ON TELEMEDICINE IN UROGYNECOLOGY

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Objective: This cross-sectional study aims to report factors associated with patient satisfaction with telemedicine visits within a urogynecology practice.

Methods: A three-question survey assessing satisfaction, ease, and interest in future telemedicine visits via Likert scale was administered to patients who successfully completed a telemedicine visit between March 1 and July 31, 2020. Patient characteristics were then obtained via chart review to identify factors that may be correlated with higher scores in those domains. Descriptive statistics were used to compare respondent characteristics.

Results: A total of 137 patients completed the questionnaire. The majority of respondents were young (57.7% less than age 65), white (83.2%), non-Hispanic (81.8%), married or living with partner (64.2%), had private insurance (54%), lived greater than 10 miles from their primary clinical site (77.4%), and reported English as their preferred language (94.9%). Three-quarters of the visits were with established patients. Almost all (N = 125) respondents selected the highest rating ("5") for their overall satisfaction with the telemedicine visit. Younger patients were more statistically more likely to rate their visit as "very easy" than older patients (90.8% age less than 65 compared to 71.4% age 65 and over; P = 0.004). English speakers (90.8%) and established patients (95.1%) were more likely to be interested in future telemedicine visits compared to non-English speakers (57.1%) and new patients (70.6%) with p-values of 0.03 and < 0.001, respectively.

Conclusions: Younger, English-speaking, established patients are most likely to find telemedicine visits easy and are more likely to use those services again. Overall, telemedicine is perceived by patients as a satisfactory way to receive urogynecologic care. Careful selection of patients can optimize the experience for both the patient and the provider.

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Poster 29
#TWITTERIMPACT: THE IMPACT OF ORAL PRESENTATION TWEETS AT GYNECOLOGIC SCIENTIFIC MEETINGS ON JOURNAL PUBLICATION

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Objective: Currently, an author's impact is measured using the H-index which is based on the number of times they have published and the number of times their publications have been cited by other investigators. Recently, several studies have shown a positive correlation between the number of tweets and literature citations. This study aims to examine the use of Twitter at leading gynecologic surgery society meetings and the impact of Twitter activity on ultimate journal acceptance.

Methods: We examined oral presentations at the national conferences of the American Urogynecologic Society (AUGS), the Society of Gynecologic Surgeons (SGS), and the American Association of Gynecologic Laparoscopists (AAGL) from 2017-2019. We accessed the final program on each society's webpage to determine the oral presentations. We excluded video presentations. We then queried PubMed, Google, and GoogleScholar for the same oral presentation title and author names to determine whether the paper had been published. If the paper was published, the name of the journal and Altmetric scores were collected. Twitter profiles were determined based on a Google Search of the presenter or authors' names and the word "Twitter." We then queried Twitter using the collected profiles and hashtags pertaining to each conference (e.g., #SGS2019, #AUGSIUGA2019) to find related tweets. Presentation characteristics were analyzed using descriptive statistics. Comparisons were made using Kruskal-Wallis, Chi-square and Spearman Correlation tests.

Results: Final review included 1,020 oral presentations (361 at AUGS, 131 at SGS, 528 at AAGL). Publication rate was compared between tweeted vs. non-tweeted oral presentations (Table 1). 144 articles with tweets had a statistically significant acceptance rate of 56.2% compared to 42.4% in 876 non-tweeted articles (P = 0.003). The Altmetric score showed a small but significant spearman correlation coefficient of 0.17 with number of tweets (P = <0.001). Tweeted presentations had an average Altmetric score of 6.3 (SD = 17.3) compared to 3.7 (SD = 17.8) in non-tweeted presentations (P value <0.001).

Conclusions: Tweeted oral presentations when compared to non-tweeted oral presentations at national gynecologic meetings are associated with higher rates of journal publication and Altmetric scores.

Table 1. Journal Acceptance

Journal Acceptance				
Overall	**Tweeted**	**N**	**Y**	**p value**
n= 1010	Yes	63 (43.8%)	81 (56.2%)	0.003
	No	499 (57.6%)	367 (42.4%)	

Table 2. Altmetric Score

	Tweeted		Kruskal Wallis Test
Altmetric Score	**Yes**	**No**	**p value**
Overall (n)	144	876	<0.001
mean (SD)	6.31 (17.31)	3.70 (17.82)	
median (IQR)	0.00 [0.00, 6.00]	0.00 [0.00, 1.00]	
AUGS (n)	82	279	0.004
mean (SD)	5.94 (12.38)	4.06 (13.00)	
median (IQR)	1.00 [0.00, 7.00]	0.00 [0.00, 3.00]	
AAGL (n)	24	504	0.114
mean (SD)	3.50 (8.53)	3.76 (21.33)	
median (IQR)	0.00 [0.00, 4.00]	0.00 [0.00, 0.00]	
SGS (n)	38	93	0.381
mean (SD)	8.89 (27.66)	2.25 (4.55)	
median (IQR)	0.00 [0.00, 5.00]	0.00 [0.00, 3.00]	

Disclosures: Elizabeth Hoang: None, Samantha Kodama: None, Sameer Desale: None, Jessica Savoni: None, Cheryl Iglesia: None

Poster 30
COMPARING URINE SPECIMEN COLLECTION METHODS FOR URINALYSIS AND CULTURE AGREEMENT: A PAIRED SAMPLE DESIGN

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Objective: The primary aim of this study was to determine if results from clean catch agree with results from catheterization in a urogynecology patient population. Previous research on urine specimen collection techniques was typically conducted in symptomatic premenopausal females. The secondary aim was to identify clinical scenarios in which catheterized specimens are preferred over clean catch specimens.

Methods: Both a midstream clean catch and a catheterized specimen were obtained for each subject. Dipstick urinalysis was performed on both specimens. If either was positive for nitrites, leukocyte esterase, or blood then both were sent for urine culture.

Cohen's kappa statistic or weighted kappa statistic were calculated to measure agreement between the paired specimen data for the total sample and for stratified samples. We agreed to accept clean catch results as preferable to catheterized results if the kappa statistic was 0.7 or greater.

Results: Three hundred forty-two subjects were enrolled from July 2019 through December 2020. Refer to Table 1 for Kappa statistics. For all subjects, the agreement between the two collection methods was strong for nitrite, moderate for blood and colony count, weak for culture species, and minimal for leukocyte esterase. When stratified for BMI, as BMI category increased from overweight to class II and III obesity, there was a trend towards increased agreement for all results. When stratified for menopause status, the agreement between the two specimen collection methods was generally similar for premenopausal and menopausal subjects. When menopausal women were stratified for vaginal estrogen use, there was not consistent improvement or worsening of agreement between the groups using and those not using vaginal estrogen cream. When stratified for prolapse, there was improved agreement for blood, leukocyte esterase, colony count, and culture species for results in women without prolapse compared to those with prolapse.

Conclusions: We were hopeful that our results would allow us to provide simple guidelines for clinical instances in which clean catch could be used reliably instead of catheterized results in a urogynecology patient population, especially for the evaluation of UTI and microscopic hematuria. Although nitrite met these criteria in all clinical scenarios, previous research has indicated the limited clinical utility of nitrite alone for evaluating for UTI in a clean catch specimen with only dipstick results. With respect to evaluating microscopic hematuria, the results for blood demonstrated moderate agreement with the kappa statistic below our predetermined value of 0.7.

In conclusion, our data indicate that catheterized urine specimens should be used in the evaluation of UTI or microscopic hematuria in the typical patient presenting to a urogynecology office who is often menopausal, overweight, and may have prolapse.

Table 1. Kappa Statistics

	All Subjects (n=342)	BMI <25 (n=85)	BMI 25-30 (n=119)	BMI 30-35 (n=65)	BMI >35 (n=73)	PreMenopausal (n=99)	Menopausal (n=243)	Menopausal without Vaginal Estrogen (n=202)	Menopausal with Vaginal Estrogen (n=41)	No Prolapse (n=172)	Prolapse (n=170)
Nitrite	0.884	1	0.658	0.792	1	0.904	0.871	0.852	1	0.883	0.886
Blood	0.656	0.609	0.636	0.659	0.725	0.609	0.676	0.691	0.611	0.663	0.646
Leuk Esterase	0.566	0.513	0.456	0.561	0.761	0.659	0.527	0.537	0.484	0.652	0.455
Colony Species	0.656	0.743	0.526	0.639	0.699	0.635	0.665	0.64	0.779	0.711	0.576
Colony Count	0.382	0.332	0.304	0.477	0.465	0.324	0.398	0.363	0.568	0.447	0.327

Disclosures: Alexander Hubb: None, Michael Heit: None

Poster 31
RISK FACTORS FOR URINARY TRACT INFECTION AFTER URODYNAMIC STUDIES

A. Jackson[1], C. Ackerman[2], N. Alesna[3], K. Hicks[2], J. Tanner[4], E. Chang[2], R. Hidalgo[2], A. Wyman[2], R. Bassaly[2], K. Greene[2]. *University of South Florida, Morsani College of Medicine[1], University of South Florida[2], University of South Florida Morsani College of Medicine[3], University of South Florida - FBDR[4]*

Objective: Urinary tract infection (UTI) is the most common complication seen after urodynamic studies (UDS). Thus, physicians have employed a range of protocols regarding pre-procedure antibiotic prophylaxis (AP). A recent survey of the American Urogynecologic Society membership demonstrated that in the setting of UDS, 47% of respondents prescribed AP to either all patients or high risk patients, while the remaining half never prescribed AP. The objective of this study is to identify the incidence of, and risk factors for, UTI following UDS.

Methods: This was a retrospective cohort study investigating the incidence of, and risk factors for, the development of UTI following UDS. The secondary outcome was to determine if there was a lower incidence of UTI following UDS in patients who received AP. Inclusion criteria included all women who underwent UDS between September 2019 and February 2020. All patients had a negative dipstick urinalysis (UA) prior to undergoing UDS. Women who developed a UTI after UDS were identified and compared to those who did not develop a UTI. Post-procedure UTI was defined as symptoms with positive culture or symptoms requiring empiric treatment. Potential risk factors for post-procedure UTI were identified by the research team a priori and chart review was then performed. Data abstracted included: demographics, office procedure type, indication for procedure, pre-procedure UA results, post procedure UTI outcomes, and relevant medical history. Logistic regression was used to identify independent risk factors for UTI after UDS.

Results: A total of 192 patients met the inclusion criteria (Table 1). Ten (5.2%) developed a post-procedure UTI. Of the potential risk factors examined, none were found be significant for UTI following UDS (Table 2). There was a lower incidence of UTI among patients receiving AP compared to patients not receiving AP, although not statistically significant (5.4% vs. 4.9%).

Conclusions: The incidence of UTI after UDS was low overall. Future randomized controlled trials are needed to determine best practice for antibiotic prophylaxis prior to UDS.

Table 1. Demographic characteristics among patients with an UDS

	All (N=192)	No UTI (N=182)	UTI (N=10)	% UTI	P-value
Age (mean ± std)	59.6 ± 14.1	59.4 ± 14.2	62.0 ± 11.6	NA	0.57
<70	135 (70.3)	127 (69.8)	8 (80.0)	5.9	0.73
≥70	57 (29.7)	55 (30.2)	2 (20.0)	3.5	
BMI (mean ± std)	30.1 ± 6.5	30.2 ± 6.5	27.6 ± 5.2	NA	0.21
Race					0.28
White	146 (76)	140 (76.9)	6 (60.0)	4.1	
Black	10 (5.2)	9 (4.9)	1 (10.0)	10.0	
Asian/Other/Unknown	36 (18.8)	33 (18.1)	3 (30.0)	8.3	
Ethnicity					0.99
Non-Hispanic	146 (76)	138 (75.8)	8 (80.0)	5.5	
Hispanic	43 (22.4)	41 (22.5)	2 (20.0)	4.7	
Language					0.36
English	168 (87.5)	160 (87.9)	8 (80.0)	4.8	
Spanish/Other	24 (12.5)	22 (12.1)	2 (20.0)	8.3	
Education					0.55
High school graduate or less	69 (35.9)	66 (36.3)	3 (30.0)	4.3	
Some College or College Graduate	70 (36.5)	65 (35.7)	5 (50.0)	7.1	
Graduate school or above	26 (13.5)	26 (14.3)	0	.	
Unknown	27 (14.1)	25 (13.7)	2 (20.0)	7.4	
Marital					0.99
Single	20 (10.4)	19 (10.4)	1 (10.0)	5.0	
Married/Living with Partner	111 (57.8)	105 (57.7)	6 (60.0)	5.4	
Divorced/Widowed	61 (31.8)	58 (31.9)	3 (30.0)	4.9	
Insurance					0.48
Private	113 (58.9)	105 (57.7)	8 (80.0)	7.1	
Public/Medicare/Medicaid	66 (34.4)	64 (35.2)	2 (20.0)	3.0	
Military/TRICARE	13 (6.8)	13 (7.1)	0	0	

P-value from independent samples t-test (continuous variables) or chi-square/Fisher's exact test (categorical variables).
Counts may not add up to total and percentages may not add up to 100 because of missing data.

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Disclosures: Araba Jackson: None, Cori Ackerman: None, Nina Alesna: None, kimiah Hicks: None, Jean Tanner: None, Eric Chang: None, Ryan Hidalgo: None, Allison Wyman: AUGS PFD Research Foundation: Grant/Research Support: Self, Caldera: Consultant: Self, Renee Bassaly: None, Kristie Greene: Pelvalon: Grant/Research Support: Self

Poster 32
RISK FACTORS FOR SAME-DAY CANCELLATION OF OFFICE PROCEDURES

A. Jackson[1], C. Ackerman[2], K. Hicks[2], N. Alesna[2], J.P. Tanner[2], E. Chang[2], R. Hidalgo[2], A. Wyman[2], R. Bassaly[2], K. Greene[2]. *University of South Florida, Morsani College of Medicine[1], University of South Florida[2]*

Objective: Urinary tract infection (UTI) is the most common complication of urodynamic studies (UDS) and a known complication of cystoscopy. Therefore, it is common to screen patients for bacteriuria with dipstick urinalysis (UA) prior to these procedures. If positive, some physicians will cancel the procedure so as not to provoke a UTI, pyelonephritis, or sepsis. The objective of this study is to identify the incidence of and risk factors (RF) for same-day cancellation (SDC) of UDS or cystoscopy due to a positive UA.

Methods: This was a retrospective cohort study investigating the incidence of and RF for SDC of office procedures due to concerns for UTI. The secondary outcome was to identify the proportion of cancellations had culture-proven UTI. Inclusion criteria included all women presenting for either cystoscopy or UDS from September 2019 to February 2020. Women whose procedure was cancelled the same day based on physician discretion using UA and/or symptoms of UTI were identified and compared to those whose procedures were not cancelled. Positive UA was defined as the presence of nitrites, or at least two of these three markers: nitrites, leukocytes, and blood. Potential RF for SDC were identified by the research team a priori. Chart review was performed. Data abstracted included: demographics, procedure type and indication, pre-procedure UA and reflex urine culture, and medical history. Logistic regression was used to identify RF for SDC of visit due to positive UA. Only variables that were statistically significant in the univariate analysis were included in the multivariable model.

Results: A total of 274 patients met our inclusion criteria. Twenty-one patients (7.7%) had an appointment cancelled (Table 1). Significant RF for SDC were history of recurrent UTI (rUTI) (cOR: 3.35, 95% CI: 1.35-8.30), presence of UTI at the initial consult visit (cOR: 5.95, 95% CI 2.17-16.33), and history of pyelonephritis/sepsis (cOR: 4.05, 95% CI: 1.02-16.04). In the adjusted model, UTI at the initial consult visit remained significant (aOR: 4.68, 95% CI: 1.65-13.26). Furthermore, women with a UTI at the initial consult and rUTIs had the highest risk of SDC (aOR: 10.10, 95% CI: 2.70-37.74).Of patients who had their procedure cancelled, eighteen (85.7%) had a positive culture.

Conclusions: Patients who presented with a UTI at their initial consult visit were 4.7 times more likely to have their scheduled procedure cancelled the same day due to concerns of UTI. Patients who presented with a UTI at their initial consult visit *and* had a history of rUTI were 10.1 times more likely to have their scheduled procedure cancelled. Further research is needed to develop protocols to avoid same-day procedure cancellation in this population.

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Disclosures: Araba Jackson: None, Cori Ackerman: None, Kimiah Hicks: None, Nina Alesna: None, Jean Paul Tanner: None, Eric Chang: None, Ryan Hidalgo: None, Allison Wyman: AUGS PFD Research Foundation: Grant/Research Support: Self, Caldera: Consultant: Self , Renee Bassaly: None, Kristie Greene: Pelvalon: Grant/Research Support: Self

Poster 33
IMPACT OF FRAILTY IN BENIGN GYNECOLOGIC SURGERY: A SYSTEMATIC REVIEW

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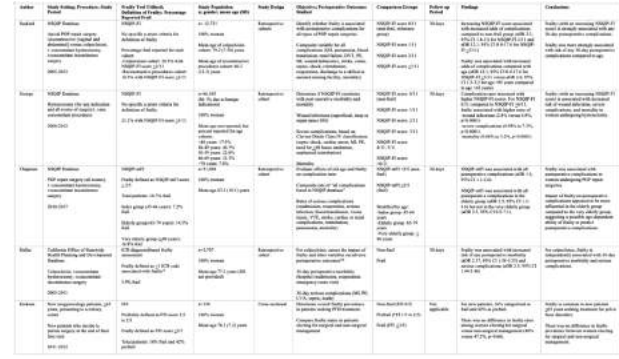
Objective: The purpose of this review was to systematically search, collect, summarize, and evaluate frailty assessment tools utilized in benign gynecology and the associations between frailty and perioperative complications.

Methods: A comprehensive, systematic literature search was conducted using the PubMed interface for Medline, Embase, and Scopus databases through August 12, 2020. Articles were included if they described the utilization of frailty assessment tools in benign gynecologic patients in the preoperative or perioperative setting. Reviews, commentaries, and abstracts without a manuscript were excluded. Articles assessing frailty in gynecologic oncology patients were excluded; however, articles including both benign and malignant procedures were included if the majority of the surgical procedures were for benign indications. The quality and evidence of all included studies were evaluated by the Cochrane Risk of Bias Tool in Non-Randomized Studies and Grading of Recommendations, Assessments, Development, and Evaluations (GRADE) criteria.

Results: 1,120 unique citations were identified, and five studies assessing frailty and perioperative outcomes were included. Three retrospective cohort studies utilized the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database to assess the impact of frailty on perioperative outcomes in hysterectomies and pelvic organ prolapse (POP) repair procedures. One retrospective cohort study utilized a California database to assess frailty in POP repair surgeries. One cross-sectional study assessed frailty in new urogynecology patient visits. Given the varying study designs, different gynecologic patient populations, and methodologies, meta-analyses of the data were not possible; however, data were grouped and summarized for similar frailty assessment tools. We found that there are few studies assessing frailty in benign gynecologic surgery. All the included studies encompassed women undergoing hysterectomy or prolapse repair. Across the four database studies, preoperative frailty was significantly associated with negative perioperative outcomes. The evidence from all the included studies were of low quality. For risk of bias, four studies were at moderate risk, and one study was at critical risk.

Conclusions: There are few studies assessing the impact of frailty on perioperative complications in benign gynecologic surgery. Multiple studies in this review demonstrate that preoperative frailty is significantly associated with adverse perioperative outcomes, but additional studies are needed to further explore this association. Future research should focus on feasible methods to identify frail patients and whether the identification and optimization of health preoperatively can reduce the risk of perioperative complications. This knowledge can help gynecologists better identify frail patients and improve their perioperative outcomes.



Author	Bias due to confounding	Bias in selection of participants into the study	Bias in classification of interventions	Bias due to deviations from intended interventions	Bias due to missing data	Bias in measurement of outcomes	Bias in selection of the reported result	Overall Risk of Bias	Quality of Evidence (GRADE)	Comments
Sunkind	Low	Low	Low	Low	No info	Moderate	Low	Moderate	Low	Used a composite outcome with all perioperative complications weighted equally
George	Moderate	Low	Low	Low	No info	Low	Low	Moderate	Low	Inclusion of hysterectomies due to malignancies, which were not addressed with statistical analyses Utilized Clavien-Dindo Classification for postoperative complications
Chapman	Low	Low	Low	Low	No info	Low	Low	Moderate	Low	Compared perioperative complications of prolapse repair surgery broadly. They specifically did not compare different surgical procedures in elderly patients.
Dallas	Low	Low	Critical	Low	No info	Low	Low	Critical	Very low	Method for frailty assessment has not been validated
Erekson	Low	Moderate	Low	Low	Low	Not applicable	Not applicable	Moderate	Low	Not adequately powered to assess frailty in relation to treatment selection Given study design, it was unknown how many patients electing for surgical management proceeded with surgery. Due to non-consecutive recruitment, not all eligible patients were included

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Poster 34
MALPRACTICE LITIGATION INVOLVING MIDURETHRAL SLING AGAINST INDIVIDUAL SURGEONS: IMPACT OF THE FOOD AND DRUG ADMINISTRATION'S BAN ON TRANSVAGINAL MESH

E. Kim[1], H. Harvie[2]. *University of Pennsylvania[1], PSOM[2]*

Objective: The primary aim of this study was to review and describe malpractice litigations in the United States involving midurethral sling surgery with synthetic mesh for stress urinary incontinence that are specifically against individual surgeons rather than the medical device manufacturers. Our secondary aim was to identify common thematic elements in allegations and defensive arguments.

Methods: We queried the Lexis® legal database to identify all U.S. malpractice litigations involving midurethral slings. Utilizing a search strategy and manual review, we excluded cases involving multi-district litigations (MDL) against medical device manufacturers and claims against the Social Security Administration or insurance companies.

Results: Of 8,154 midurethral sling litigations that were identified, only three cases were against individual surgeons (two urologists and one general obstetrician/gynecologist). (Table) These cases were litigated and decided between 2013 and 2020. One case was decided in favor of the defendant surgeon, and two cases are ongoing. One case involved a transobturator midurethral sling and two cases involved retropubic midurethral slings. All three cases alleged negligence and lack of informed consent. Two cases relied on the FDA notifications/ban on transvaginal mesh for the surgical repair of pelvic organ prolapse in their arguments. In one case that was decided in favor of the defendant surgeon, negative finding on cystoscopy served as convincing defensive evidence against negligence.

Conclusions: Very few midurethral sling litigations are against individual surgeons. The FDA notifications and subsequent ban on transvaginal mesh for the surgical repair of pelvic organ prolapse are being misinterpreted by plaintiffs and their attorneys as applicable to synthetic mesh midurethral sling procedures to treat stress urinary incontinence. Surgeons may benefit from preoperatively clarifying with patients the difference between the midurethral sling and transvaginal mesh for pelvic organ prolapse and providing them with information regarding the FDA notifications/ban. In addition, detailed informed consent, documented discussion of the risks and benefits of synthetic mesh, and documented cystoscopy findings constituted persuasive defensive arguments.

Title	Year	State	Allegation	Ruling	Defensive argument	Sling type	Alleged complications	Additional intervention	Comments
Shears v. Park	2013	CA	Negligence Lack of informed consent	Ongoing	None directly addressing the allegations. Argument about legal jurisdiction where this case ought to be tried.	Trans-obturator	Unspecific pain symptoms	Evaluated by another physician who reportedly told the plaintiff that "the mesh … should not have been used for anyone sexually active and under the age of seventy."	Plaintiff claimed that the defendant "failed to advise [her] of the risks associated with the use of mesh." Plaintiff cited the **FDA ban on transvaginal mesh**. In doing so, alleges that the sling should have been removed from the market or at least disclose warnings, and that that the surgeon was negligent in placing MUS and did not inform the patient.
Smith v. Hendricks	2015	DC	Negligence Lack of informed consent	Ongoing	Consent form signed by the plaintiff Documentation that the surgeon "had a thorough discussion"	Retro-pubic	Back pain and abdominal pain. "Continuous post-menopausal bleeding"	"Subsequent treatment and surgery" at another facility	Plaintiff claimed that she "never received any information regarding complications with using the mesh device" and did not receive any literature other than a "simple consent form." This plaintiff also cited **the FDA ban on transvaginal mesh**.
Watson v. Landmark Urology	2020	KY	Negligence Lack of informed consent	Defendant	Consent form signed by the plaintiff Documentation that the surgeon "discussed possible complication of the sling surgery." Intra-operative cystoscopy showing no injury or mesh material	Retro-pubic	Mesh exposure in bladder and urethra	Mesh removal by another surgeon	At post-op, the plaintiff reported continued incontinence. The defendant performed cystoscopy and found no abnormalities. Incontinence improved over time. 1 year later, she saw another provider for pelvic pain and recurrence of incontinence. Cystoscopy was performed and showed mesh exposure. Plaintiff claimed that the surgeon did not explain possible complications of MUS surgery. When questioned further, she did admit to being given written information about the surgery and "probably" reading it. She also admitted that the surgeon may have explained the complications but that she does not remember.

Table 1. Summary of the three malpractice litigations involving midurethral sling against individual surgeons in the U.S.

Disclosures: Edward Kim: None, Heidi Harvie: None

Poster 35
ASSESSMENT OF LEVEL OF FEAR IN ADULT PATIENTS UNDERGOING ELECTIVE UROGYNECOLOGIC AND GYNECOLOGIC PROCEDURES AND SURGERIES DURING THE COVID-19 PANDEMIC USING THE VALIDATED SURGICAL FEAR QUESTIONNAIRE (SFQ)

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Objective: To assess and trend fears surrounding elective surgeries and office procedures with a standardized questionnaire in benign gynecologic and urogynecologic patients during the Coronavirus-19 (COVID) pandemic. We hypothesized that COVID-related fear was greater in surgical patients over procedural patients, that surgical fear would be greater than historic data, and that fear levels would increase with the course of the pandemic.

Methods: This is a multicenter, prospective, observational study. Recruitment occurred from June 23, 2020 until March 23, 2021. Females 18 years or older presenting for elective, benign gynecologic or urogynecologic surgery or office procedures were eligible. Patients were excluded if non-English speaking or undergoing an emergent procedure or surgery.

Fear was assessed with the Surgical Fear Questionnaire (SFQ), a validated 8-item survey that evaluates short term (questions 1-4) and long term (questions 5-8) fears related to surgery. We modified the SFQ to include 2-4 additional questions about the COVID-19 pandemic (mSFQ) and to apply to procedures (10 questions) and surgeries (14 questions) (Table 1). Questions were scored on a scale of 0-10 with 0 being "not at all afraid" and 10 being "very afraid". Total SFQ scores and short and long term fear scores were compared between procedures and surgeries and to historic data (Theunissen et al, 2016).

Results: 209 subjects undergoing 107 procedures or 102 surgeries completed the questionnaire. Demographics are shown in Table 1. The prevalence of chronic pain, depression, and anxiety was similar to national statistics. The most common procedure was urodynamics (n = 59, 55%). The most common elective surgery was hysterectomy (n = 59, 57.8%). 72.5% surgeries were for urogynecologic indications.

Fear assessed by the SFQ (12.21 ± 16.21) was overall low and not different in subjects undergoing procedures versus surgery (12.38 ± 12.44 vs 12.03 ± 16.01, $P = 0.958$). Similarly, fear was not different between procedures vs surgery for short term (6.21 ± 8.38 vs 6.81 ± 8.44, $P = 0.726$) and long term fear (6.18 ± 8.89 vs 5.22 ± 8.20, $P = 0.683$). The mSFQ, which captured COVID-specific fears, demonstrated higher fear scores for both procedures and surgeries compared to SFQ (mSFQ 20.57 ± 20.55 for procedures, 28.78 ± 28.51 for surgeries versus 12.21 ± 16.21 for SFQ). These included fear of hospitalization, overworked doctors, concern for family, etc (Table 1). There were no significant fluctuations in SFQ score in relation to critical COVID-19 events (Figure 1).

We compared our data to the largest study of surgical fear in 428 women undergoing benign hysterectomy outside of a pandemic by Theunissen et al 2016 and found a significantly lower fear in our population in both the short (6.5 ± 8.39 vs 16 ± 9.9, $P < 0.001$) and long term (5.71 ± 8.56 vs 9.3 ± 8.6, $p < 0.001$) scores. This lower level of surgical fear persisted solely comparing our hysterectomy subjects to the aforementioned data in both short term (7.37 ± 8.62 vs 16 ± 9.9, $p < 0.001$) and long term (5.12 ± 7.14 vs 9.3 ± 8.6, $P < 0.001$) scores.

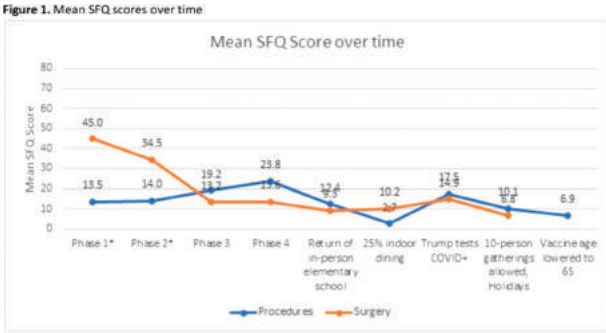
Conclusions: Fear of surgeries and office procedures was overall low and consistent throughout the COVID-19 pandemic. Compared to historic data, our

Table 1		N= 209	
DEMOGRAPHICS			
Age*		54.68 (20-92)	
BMI*		27.76 (15-52)	
Race:	American Indian	1 (0.5)	
	Asian	19 (9.1)	
	Black or African American	41 (19.7)	
	White	110 (52.9)	
	Other	37 (17.8)	
Marital status:	Married or cohabitating	115 (55.3)	
	Single	50 (24)	
	Widowed	14 (6.7)	
	Divorced	29 (13.9)	
Insurance status:	Self-pay	10 (5)	
	Private	99 (49.3)	
	Medicare	55 (27.4)	
	Medicaid	37 (18.4)	
Education level:	High school or GED equivalent	34 (16.6)	
	Some college	46 (22.4)	
	Associate's or Bachelor's degree	72 (35.1)	
	Advanced degree	52 (25.4)	
	Other	1 (0.5)	
Currently employed		120 (58.8)	
Medical history:	Chronic pain	49 (25.5)	
	Depression	39 (20.5)	
	Anxiety	56 (28.7)	
	Prior surgery	167 (80.7)	
Procedures:	Urodynamics	59 (55.1)	
	Cystoscopy	30 (28)	
	Intradetrusor botox	3 (2.8)	
	Urethral bulking	1 (0.9)	
	Biopsy	1 (0.9)	
Surgeries: †	Hysterectomy	59 (57.8)	
	Sacrocolpopexy	23 (22.5)	
	Uterosacral or sacrospinous ligament suspension	13 (12.7)	
	Colpocleisis	3 (2.9)	
	Anterior and/or posterior colporrhaphy	26 (25.5)	
	Midurethral sling	32 (31.4)	
	Other urogynecologic or reconstructive surgery	12 (11.8)	
	Myomectomy	10 (9.8)	
	Resection of endometriosis	7 (6.9)	
	Hysteroscopy	5 (4.9)	
	Other benign gynecologic surgery	3 (2.9)	

OUTCOMES	Procedures	Surgeries
mSFQ‡	20.57±20.55§	28.78±28.36¶
I am afraid of being admitted to the hospital after the procedure due to the coronavirus pandemic.	3.26±3.43	3.24±3.11
I worry about my family due to the coronavirus pandemic.	5.19±3.68	4.54±3.63
I am afraid that the doctors are overworked due to the coronavirus pandemic.	N/A	3.19±3.10
I am afraid that the hospital is understaffed due to the coronavirus pandemic.	N/A	2.38±2.93
I am afraid that my condition is more advanced because of a delay in care related to the coronavirus pandemic.	N/A	1.33±2.30
I am afraid that I will be infected with coronavirus from the surgery.	N/A	2.22±2.91
SFQ# (8 questions)	12.38±16.47	12.03±16.01

Data are reported as n (%) unless otherwise specified.
* Mean (minimum-maximum)
† Percentages do not add to 100 as some patients had more than one type of surgery
‡ Mean ± standard deviation
§ Range 0-100
¶ Range 0-140
# Range 0-80

Figure 1. Mean SFQ scores over time



*n<5

patients had lower levels of surgical fear. Fear scores increased with the addition of COVID-specific questions, indicating some fear surrounding having a procedure or surgery during the pandemic. Interpretation of our results is limited by the fact that the patients surveyed had already decided to continue in-person care.

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Poster 36
COMPARING OUTCOMES BETWEEN PESSARY USE AND SURGERY FOR SYMPTOMATIC PELVIC ORGAN PROLAPSE: A PROSPECTIVE SELF-CONTROLLED STUDY

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Objective: To compare the degree of pelvic floor symptom improvement between pessary use and prolapse surgery.

Methods: Pessary-naïve women, who elected to undergo surgery for prolapse, were enrolled and utilized a pessary for 7-30 days preoperatively. Pelvic floor symptoms were assessed at baseline, following pessary use, and 3 months post-operatively. The primary outcome was symptom improvement assessed via Patient Global Impression of Improvement Score (PGI-I) and concordance assessed between pessary use and surgery. Secondary outcomes focused on pelvic floor symptoms, assessed with validated questionnaires (POPDI-6, PFIQ-7, OABSS, IIQ). The study was designed assuming 80% concordance between treatments. Based on a sample size of 62 the 95% confidence interval for this estimate would have a ½ width of 10% (*i.e.* 95% CI of 70.8-90.5%). Assuming a 25% dropout rate, the plan was to recruit 83 women.

Results: In total, 61 participants were enrolled from 3/2016-4/2019, of which 58 utilized a pessary. Due to improvement with pessary use, 11 did not proceed with surgery. The mean age was 60.7(SD 10.7), with 24.1% having a prior hysterectomy, and 14% having prior prolapse surgery. While both treatments demonstrated symptomatic improvement, concordance in the degree of overall improvement on PGI-I was poor(n = 40), with responses significantly favoring greater improvement after surgery ($P < 0.001$). Both pessary use and surgery were associated with significant improvements in prolapse symptoms from baseline on POPDI-6 (both $P < 0.001$) and POPIQ-7 (both $P < 0.001$), overactive bladder symptoms on OABSS (pessary $P = 0.03$, surgery $P = 0.005$), and colorectal symptoms on CRAIQ-7(pessary p = 0.03, surgery $P = 0.007$). The degree of improvement was larger following surgery on POPDI-6 ($P < 0.001$), PFIQ-7 ($P = 0.004$), and OABSS ($P = 0.004$), but not the CRAIQ-7 ($P = 0.3$).

Comparison of global symptomatic improvement on PGI-I between pessary use and surgery†

	PGI-I response 3 months after surgery							
PGI-I response after pessary use	1=Very much better	2=Much better	3=A little better	4=No change	5=A little worse	6=Much worse	7=Very much worse	Total
1=Very much better	1	1	0	0	0	0	0	2
2=Much better	8	4	0	1	0	0	0	13
3=A little better	6	5	0	0	0	0	0	11
4=No change	6	6	0	0	0	0	0	12
5=A little worse	2	0	0	0	0	0	0	2
6=Much worse	0	0	0	0	0	0	0	0
7=Very much worse	0	0	0	0	0	0	0	0
Total	23	16	0	1	0	0	0	40

† Among the 47 patients who had surgery, 40 completed the PGI-I form after pessary use and 3 months after surgery.

Conclusions: Both pessary use and surgery significantly improved pelvic floor symptoms from baseline. However, concordance between the degrees of improvement between these treatments was poor, with more favorable outcomes after surgery for prolapse and overactive bladder symptoms.

Disclosures: Brian Linder: None, John Gebhart: UroCure: Advisory board: Self, UpToDate: Content expert: Self, Elsevier: Book: Self, Amy Weaver: None, Felecia Fick: None, Randina Harvey-Springer: None, Emanuel Trabuco: None, Christopher Klingele: None, John Occhino: None

Poster 37
PATIENT SATISFACTION WITH TELEHEALTH IN FPMRS DURING THE COVID-19 PANDEMIC

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Objective: Since March 2020, the COVID-19 pandemic has catalyzed rapid integration of telemedicine services into clinical practice. Our primary aim was to assess patient satisfaction with telehealth care in Female Pelvic Medicine and Reconstructive Surgery (FPMRS). Our secondary aim was to assess patient access to technology for telehealth visits.

Methods: This was an IRB-approved, single-institution, survey study of a convenience sample of patients presenting for telehealth visits within the Division of FPMRS from July 22, 2020 to January 15, 2021. We invited new and established patients to complete a single survey regarding reason for visit, overall satisfaction, access to technology, previous use of telemedicine, and preference for future visits. We present data as mean ± standard deviation or proportion.

Results: Of 227 patients offered the survey, 142 (62.6%) responded; 84 (59.2%) completed the survey following a video visit, and 58 (40.9%) completed the survey following a telephone visit. Respondents had a mean age of 51.5 ± 15.4 years, and most were Non-Hispanic White (70.4%) and had at least a Bachelor's degree (64.8%). The most common primary diagnoses were sexual dysfunction (26.1%), overactive bladder (21.8%), and urinary incontinence (14.1%). Most patients in both the video and phone groups were completely satisfied (62.4% and 56.0%, respectively) or moderately satisfied (24.4% and 39.3%, respectively). Patient-reported advantages of telehealth included saving travel time (93.0%), waiting room time (59.2%), parking fees (50.0%), time off work (43.7%), and public transit fees (22.5%). Patients also reported greater overall convenience (60.6%) and feeling that they had more time with the provider (21.8%). Patient-cited disadvantages were concern about the provider's ability to make a diagnosis (69.0%) or see something of concern remotely (64.1%). Only 5.6% of patients expressed concern about difficulty building rapport with a provider virtually. Regarding access to telehealth visits, 8.5% cited a poor internet connection and 7.0% felt that setting up a virtual platform could be challenging.

In anticipation of post-COVID FPMRS visits, most respondents (79.6%) preferred a combination of virtual and in-person visits. Only 2.1% indicated a preference for all future visits to be virtual, while 10.6% preferred only in-person visits, and 7.7% did not express a preference. Among respondents who preferred at least some virtual visits, 73.3% preferred video, whereas 25.9% preferred telephone visits.

Conclusions: This study demonstrates high patient satisfaction with virtual telehealth visits at our FPMRS Division during the COVID-19 pandemic. Saving travel time and overall convenience were the most highly cited advantages of telehealth by patients. Patients prefer receiving a combination of telehealth and in-person visits post-pandemic. This study underscores an important role for telehealth in future FPMRS practice and should inform future studies to explore which conditions, visit types, and patient characteristics are best served by virtual versus in-person visits.

Disclosures: Tara Marczak: None, Annika Gompers: None, Laura Dodge: None, Monica Richardson: None, Roger Lefevre: None, Mallika Anand: None

Poster 39
FACTORS ASSOCIATED WITH A POSITIVE URINE CULTURE IN OLDER WOMEN PRESENTING WITH SYMPTOMS OF URINARY TRACT INFECTION

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Objective: To determine variables associated with a positive urine culture (UCx) in a population of older women seeking treatment for symptoms of urinary

tract infection (UTI). We hypothesized that those with history of recurrent UTI (rUTI) and dysuria would have the highest proportion of positive urine cultures.
Methods: This was a retrospective cohort study of women seeking treatment for UTI symptoms at an academic medical center from November 1, 2020 to March 3, 2021. Clinical protocol at this time included symptom ascertainment with the Urinary Tract Infection Symptom Assessment (UTISA) Questionnaire at initial call or office visit and again after UCx results were available. Analyses include all women in the study time frame with at least a baseline UTISA grouped by a history of rUTI. Our primary outcome was the proportion of "positive" UCx, defined as $\geq 10^3$ colony-forming units, between rUTI groups. "No Growth" and "Mixed Flora" results were combined in the negative UCx group for analysis. Secondary aims included identifying other characteristics associated with positive UCx. Characteristics were compared between groups using student's T-test and chi-square tests. Relative odds of a positive UCx were calculated, controlling for confounders.
Results: Overall, 154 women were included in our analyses, 80 (51.9%) with a history of rUTI and 74 (48.1%) with no history of rUTI. Mean age was 66.2 (SD 15.2) years, the majority (95.0%) were Caucasian. Subjects with a history of rUTI had higher utilization of antibiotic suppression [17/78 (21.8%) v. 1/74 (1.4%); $p < 0.01$] and vaginal estrogen [65/79 (82.3%) v. 26/74 (35.1%); $P < 0.01$] as compared to those without a history of rUTI. For our primary outcome, 96 (62.3%) had a positive UCx and 58 (37.7%) had a negative UCx. Subjects with a positive UCx were more likely to report history of rUTI [57/96 (72.2%) vs 22/57 (27.8%), $P = 0.02$]. (Table) There was a 2.46-fold increased odds of a positive UCx in those with a history of rUTI (aOR 2.46, 95% CI 1.20-5.03; $P = 0.01$) when controlling for confounding variables including scores on UTISA questions for frequency (aOR 0.59, 95% CI 0.38-0.91; $P = 0.02$), dysuria (aOR 1.53, 95% CI 1.10-2.12; $p = 0.01$), and age (aOR 1.03, 95% CI 1.00-1.05, $P = 0.03$).
Conclusions: In a cohort of older women, those presenting with symptoms of dysuria with a history of recurrent UTI are more likely to have a positive urine culture than those presenting with urinary urgency.

UPLOAD-https://planion-client-files.s3.amazonaws.com/AUGS/blobs/3b1b0920-c7e9-4eac-b225-1f2a39cf181f/1/Predictors_Pos_UCx_Table.tiff

Disclosures: Alexandra Melnyk: None, Nicole Meckes: None, Marina Guirguis: None, Halina Zyczynski: None, Megan Bradley: None

Poster 40
GRAND AND GREAT-GRAND MULTIPARITY! DO THEY POSE A UROGYNECOLOGIC PROBLEM?

S. Narayanamoorthy[1], K. Singh Balhotra[1], R. Furuya[2], M. Andrusier[3], K. Buford[1], R. McLaren[1], E. McKay[1], A. Polland[1]. *Maimonides Medical Center[1], Donald and Barbara Zucker SOM at Hofstra/Northwell[2], SUNY Downstate Health Sciences University[3]*

Objective: Multiple studies have found parity and mode of delivery are the strongest contributing factors for the development of pelvic floor disorders, including pelvic organ prolapse, urinary and fecal incontinence. While some have reported increased odds of prolapse with each vaginal birth, others found odds increased after first birth with marginal impact from additional births. Literature on this relationship among grand multiparous (GM) and great-grand multiparous (GGM) women is lacking. Thus, the purpose of this study was to evaluate the prevalence of pelvic floor symptoms among GM and GGM women and to compare the symptoms experienced by the GM and GGM groups with those experienced by multiparous women who have had less than five births.
Methods: This was a planned preliminary analysis of a cross-sectional study of women who delivered at a single institution between March 2018 and December 2018. Patient with at least one prior birth were recruited by telephone and in clinic visits. After consent was obtained, subjects completed questions on urinary and fecal incontinence and prolapse symptoms, previously validated by the National Health and Nutrition Examination Survey (NHANES). Chart review obtained information on Cesarean section or operative delivery and birth weight. A preliminary analysis was planned to report on the prevalence of pelvic floor symptoms once 50 patients in the GM and GGM groups had been approached for recruitment, this is presented here. Multiparous (<5 deliveries), GM (<10 deliveries) and GGM (10 or more deliveries) groups were compared using Chi square test.
Results: Of the eligible 178 patients, 120 (67.4%) consented. Of these 120 women, 23 (19.2%) were multiparous, 46 (38.3%) were GM and 51 (42.5%) were GGM. The majority of women reported Caucasian ethnicity. Over half of women in all groups reported urinary incontinence with urgency incontinence being most prevalent in the GM (47.8%) and GGM (45.1%) groups. Fecal incontinence was rare. Prolapse symptoms were present in 15.7% of the GGM group and 10.9% of the GM group. Mean age increased with parity ($P < 0.0001$). Symptoms of prolapse ($P = 0.784$), urinary ($P = 0.416$) and fecal incontinence ($P = 0.817$) did not differ between groups. The sample size of this preliminary analysis precluded attempting to control for factors including Cesarean section, operative delivery and birth weight.
Conclusions: Pelvic floor symptoms were common in GM and GGM patients with urgency incontinence being most common. While pelvic floor symptoms did not differ between groups in this analysis, this analysis was not powered for that aim. Further analysis is planned once the full sample size is reached which will allow for comparison of pelvic floor symptoms in this unique population.

Characteristics and Demographics of Women Belonging to Multiparity, GM nd GGM groups

Factors	Multiparity (N=23)	Grand-multiparity (GM) (N=46)	Great-grand-multiparity (GGM) (N=51)
Mean age (p< 0.0001)	34.4 +/- 5.6	38+/-3.8	40.8+/- 2.7
Mean BMI (p = 0.716)	30.3	29.8	29.1
Urinary incontinence	13 (56.5%)	26 (56.5%)	27 (52.9%)
Urgency	6 (26.1%)	22 (47.8%)	23 (45.1%)
Stress	6 (26.1%)	1 (2.2%)	2 (3.9%)
Frequency	9 (39.1%)	1 (2.2%)	0
Fecal Incontinence	0	0	1 (2.0%)
Prolapse symptom	3 (18.8%)	5 (10.9%)	8 (15.7%)
Treatment for incontinence and prolapse	3 (18.8%)	1 (2.2%)	11(30.5%)

Disclosures: Sujatha Narayanamoorthy: None, Kimen Singh Balhotra: None, Rachel Furuya: None, Miriam Andrusier: None, Karis Buford: None, Rodney McLaren: None, Elishia McKay: None, Allison Polland: None

Poster 41
PREVALENCE OF PELVIC ORGAN PROLAPSE AMONG WOMEN DIAGNOSED WITH INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME

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Objective: Our objective was to determine the prevalence of pelvic organ prolapse (POP) among women diagnosed with interstitial cystitis (IC)/bladder pain syndrome (BPS) in our practice as compared to those without IC.
Methods: This retrospective cohort study included all women who presented to a tertiary urogynecology practice between March 2018 and March 2021. Charts were excluded if there was no POP-Q documented in the patient's chart. We abstracted data from electronic medical records. IC patients were diagnosed based on the definition agreed upon by the American Urologic Association (AUA) and the Society for Urodynamics and Female Urology (SUFU). Patient demographics, medical and obstetric history, and Pelvic Organ Prolapse Quantification (POP-Q) measurements were recorded. The data was then analyzed using descriptive statistics, Fisher's exact tests and multiple logistic regression analyses.
Results: Eight hundred and fifty seven charts met inclusion criteria. Of these 857, 148 women were diagnosed with interstitial cystitis (17.3%). Patients diagnosed with IC were less likely to have the concomitant diagnosis of POP, as compared to those without IC (29.7% vs 61.4%, $P < 0.001$, OR 0.266, 95% CI 0.18-0.39). Significant differences in age, parity, and number of vaginal deliveries were noted on univariate analysis between the IC group and the non-IC group. On multiple logistic regression women with IC were less likely to have POP compared with women who were not diagnosed with IC (OR 0.412, 95% CI 0.26-0.64; P value <0.001). Age and number of vaginal deliveries were found to be independent risk factors for the development of POP (OR 1.015; 95% CI 1.004-1.026; $P = 0.0061$; OR 2.04, 95% CI 1.675-2.510; $P < 0.0001$, respectively). A trend in lower recorded BMI was noted in the IC group compared to the non-IC group, although this difference was not statistically significant ($P = 0.062$). Vulvodynia, fibromyalgia, and prior psychiatric diagnoses were found to have a higher prevalence in patients diagnosed with IC compared to those without IC ($P < 0.001$, 95% CI -0.30 to -0.20; $P = 0.012$, 95% CI -0.078 to -0.0095; $P = 0.0032$, 95% CI -0.19 to -0.04, respectively).
Conclusions: In a cohort of women diagnosed with IC/PBS or POP, the prevalence of IC is negatively correlated with prolapse even when controlling for parity and age.

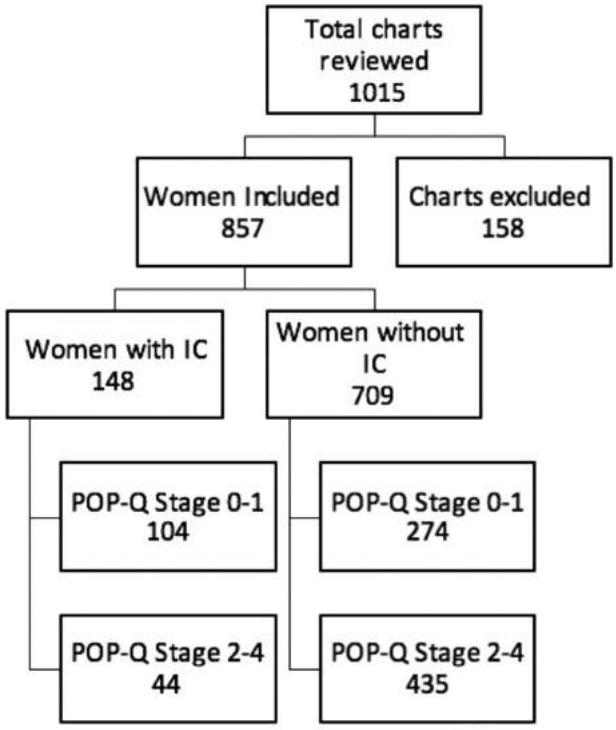

Figure 1: Charts reviewed.

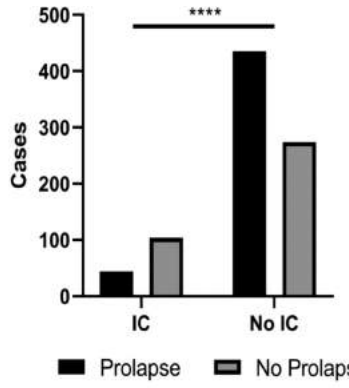

Figure 2: Presence of prolapse in patients with IC compared to patients without IC (29.7% vs 61.3%; p <0.0001; OR 0.266; 95% CI 0.18-0.39).

Disclosures: Alicia Palmieri: None, Anna Giarratana: None, Nina Jacobson: None

Poster 42

VAGINAL COMPLICATIONS AFTER RADICAL CYSTECTOMY FOR BLADDER CANCER: A SYSTEMATIC REVIEW

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Objective: The purposes of this systematic review are 1. to summarize the published literature regarding pelvic organ prolapse, dehiscence or evisceration, vaginal fistula, and dyspareunia after vaginal sparing radical cystectomy for bladder cancer and 2. to describe the management approaches used to treat these conditions.

Methods: Ovid MEDLINE, Ovid EMBASE, and Web of Science were systematically searched from January 1, 2001 to January 25, 2021 using a combination of search terms for bladder cancer and radical cystectomy with terms for four categories of vaginal complications (prolapse, fistula, evisceration/dehiscence, and dyspareunia). We identified any study in English; review articles and editorials were excluded. We followed standard systematic review methodology.

Results: A total of 229 publications were identified. Two reviewers screened the abstracts and 43 full-text articles were assessed independently by two authors for inclusion. The final review included 28 publications. Neobladder vaginal fistula (NVF) was identified in 17 publications and was most often noted along the anterior vaginal wall at the location of the neobladder-urethral anastomosis. The largest study of 249 female patients reported the incidence of NVF as 5.6% (calculated 95% CI: 3-9%), diagnosed at a mean time of 4.2 months after cystectomy. Other larger studies with 192, 97, and 78 patients reported NVF in 3.1% (calculated 95% CI: 1-7%), 3.1% (calculated 95% CI: 1-9%) and 9% (calculated 95% CI: 4-18%) respectively. Pelvic organ prolapse was assessed in 5 studies, only one used a validated questionnaire and none included a validated objective measure of pelvic organ support. Two of the five papers reported no cases of prolapse at median follow-up time of 12mos and 48 months. The other three studies reported the incidence of prolapse after radical cystectomy to be 6% at mean follow-up time of 62mos, 10% at mean follow-up time of 36mos, and 23% at mean follow-up time of 6.3 years. (Table 1) Sexual function was evaluated in 10 studies, 7 of which utilized validated instruments. Maintaining the anterior vaginal wall and distal urethra appeared to be associated with improved sexual function. (Table 2)

Conclusions: Prospective studies using standardized instruments and subjective outcome measures are needed to better define the incidence of vaginal complications after radical cystectomy for bladder cancer, and to understand their impact on quality of life measures.

Table 1 : Cohort Studies Measuring Prolapse Outcomes

First Author	Study Design	Incidence	Timing of Prolapse	Standardized Instrument; Outcome	Diversion Type	Other Findings
Ali-El Dein, B; 2002	Retrospective	16/163 (9.8%)	Within 3mos after RC[1]	NA	ONB[2]	Neobladder vaginal prolapse resulted in chronic urinary retention
Badawy, A 2011	Retrospective	5/78 (6%)	Within 3mos after RC	NA	ONB	Neobladder vaginal prolapse resulted in chronic urinary retention
Chang, S 2002	Retrospective	0/25 (0%)	NA	NA	ONB	Authors hypothesize that preservation of anterior wall and pubo-urethral ligaments prevented prolapse
Lipetskaia, L 2019	Retrospective	8/35 (22.8%)	Mean 6.3 years after RC	POPDI-6[3]	ONB	
Roshdy, S 2016	Retrospective	0/22 (0%)	Mean 48mos after RC	NA	ONB	

[1] Radical Cystectomy, [2] Orthotopic Neobladder, [3] Pelvic Organ Prolapse Distress Inventory 6

Table 2 : Cohort Studies Measuring Sexual Function Outcomes

First Author, year	Study Design	Number women, RC	Diversion type	% Sexually Active	% Dyspareunia	Global sexual function score	Other
Ali-El Dein, B 2002	Prospective	12 GOS* compared to 41 standard RC†	ONB‡	11/12 (91.7%) GOS patients	NA	Mean PSFI^ = 18 +/- 1	PSFI results better in GOS compared to standard RC group
Badawy, A 2011	Retrospective	78 (9 GOS; 69 standard RC)	ONB	63/78 (8.9%)	7/63 (11%)	NA	45/63 (69%) reported sexual dysfunction (non validated)
Bhatt, A 2006	Retrospective	13 (6 GOS compared to 7 non nerve sparing RC)	ONB	6/6 (100%) nerve sparing; 1/7 (14%) non nerve sparing	Mean PSFI pain domain score= 4.8 +/- 0.3 in 1.5 +/- 0.5 non nerve sparing; 4.2 +/- 0.7 in 3.7 +/- 0.9 nerve sparing	Mean PSFI= 11 non nerve sparing. Mean PSFI (nerve sparing = 22	
Booth, B 2015	Retrospective	71 (46 responders; 65% response rate); standard RC	3 ONB, 20 conduit, 2 continent diversion	37% active after RC (78% sexually active before RC)	Median PSFI pain domain score= 0 (range 0-6)	Median PSFI= 4.8 (1.3-32)	
El Bahnasawy, S 2011	Retrospective	73; standard RC	ONB, conduit, and continent diversion	54/73 (74%)	48% reported dyspareunia	Mean PSFI= 11.3 ± 7.4	ONB PSFI scores higher than other diversions
Henningsohn, L 2003	Prospective, control group	130	ONB, conduit, and continent diversion	NA (although reduced intercourse frequency in 18% ONB and conduit patients; 20% continent diversion patients	NA	NA	13% ONB and 5% conduit patients reported substantial distress due to vaginal problems during sex
Mourey, E 2016	Retrospective	18; GOS	ONB	15/18 (83.3%)	3/18 (16.6%)	NA	All premenopausal women
Simeonato, S 2010	Prospective	30	Conduit	NA	NA	Mean EORTC-BLM-30^= 22.3 (sd 24.5); Mean EORTC QLQ-C30^ score sexual function/age = 7 (+/- 20.3) and sex life = 75 (+/-30)	
Tailoti, G 2020	Retrospective	11; GOS	ONB	8/11 (72.7%)	PSFI median pain domain score= 5.2 (0-6)	Median PSFI= 28.2 (8.0-33)	
Zippe, C 2004	Prospective	34 (27 sexually active and included in analysis); GOS	ONB (10), continent diversion (7), conduit (10)	13/27 (48%)	6/27 (22%)	Mean modified IPSF^ (10 item) = 10.6 +/- 8.82	

*Genital Organ Sparing, †Radical Cystectomy, ‡Orthotopic Neobladder, ^Female Sexual Function Inventory, ^European Organization for Research and Treatment of Cancer - Muscle-Invasive Bladder Cancer, ^European Organization for Research and Treatment of Cancer Quality of Life Core Questionnaire, ^Index of Female Sexual Function

Disclosures: Lee Richter: None, Jillian Egan: None, Emily Alagha: None, Victoria Handa: None

Poster 43

COMPLIANCE WITH PELVIC FLOOR PHYSICAL THERAPY IN WOMEN PRESENTING WITH FECAL INCONTINENCE

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Objective: To determine the incidence of patient compliance with prescribed pelvic floor physical therapy (PFPT) in women presenting with fecal incontinence (FI) and to describe patient characteristics associated with noncompliance.

Methods: This is a retrospective cohort study of women presenting with FI who were prescribed PFPT at a tertiary care referral center between January 2010 and December 2019. Patients were included if complete data were available. Patient characteristics and physical therapy data were abstracted from the electronic medical record. Compliance with PFPT was defined as either completion of documented recommended physical therapy sessions or discharge from therapy by the therapist before completion of the prescribed sessions.

Results: 249 patients met inclusion criteria for the study and complete data were available for 248 patients. Mean age and BMI were 59 (±14) years and 28.4 (±6.2) m^2/kg, respectively. The median vaginal parity was 2 (range 0-7). Of the patients, 6.4% (16) were postpartum. A total of 159 (64.1%) patients attended at least one session of prescribed PFPT. Patients who did not attend any sessions were more likely to have a concurrent diagnosis of pelvic organ prolapse (69.7% vs 55.3%, p = 0.03), otherwise there were no differences between patients who attended at least a single session and those who did not. When controlled for age, BMI, parity, and menopausal status, concurrent prolapse remained associated with non-attendance (Adj OR of 1.9 [95% CI 1.0-3.3]). Of the patients who attended PFPT, the median sessions attended was 3 (0-18) and the compliance rate was 32.7% (n = 50). Noncompliant patients were more likely to have a higher BMI than those who were compliant (28.9 vs 26.9, p = 0.02), but this was no longer statistically significant once other patient characteristics were controlled for. There were no other differences in patient characteristics between the compliant and noncompliant groups. Of the patients who were compliant, 27 (55.1%) completed required sessions while 22 (44.9%) were discharged prior to completion of required sessions. Of the entire cohort, 136 (54.8%) followed up with their physician after the initial referral to PFPT. 43.7% (59) of those patients were offered second line therapy including: referral to colorectal surgery (19.9%), sacral neuromodulation (10.3%), bulking (1.5%), and surgery (25.0%).

Conclusions: Of the women prescribed PFPT for a diagnosis of FI, approximately 2/3 attended at least a single session, but only 1/3 of those patients were compliant with their recommended therapy. Concurrent pelvic organ prolapse was associated with patients not attending a single prescribed PFPT.

Disclosures: James Ross: None, Annika Sinha: None, Propst Katie: None, Cecile Ferrando: UpToDate: Authorship: Self

Poster 44
EFFECTS OF PREOPERATIVE GABAPENTIN ON CLINICAL OUTCOMES AFTER OUTPATIENT MID-URETHRAL SLING PLACEMENT

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Objective: To evaluate voiding trial success in patients undergoing outpatient mid-urethral sling placement who were treated with preoperative gabapentin (treated) versus those who were not (untreated). Secondary outcomes included time to discharge, postoperative pain and analgesic usage, and unexpected admission rates.

Methods: Women who underwent mid-urethral sling placement from 2015-2019 with a high-volume Female Pelvic Medicine and Reconstructive Surgery practice were eligible for inclusion. Exclusion criteria included suprapubic catheter placement, concurrent reconstructive surgery with planned overnight admission, and pre-existing conditions or surgical complications necessitating prolonged postoperative catheterization. Electronic medical records were queried for demographics, pelvic organ prolapse quantification stage, urodynamic data, and operative details to include hemostatic agent usage and type of sling. Postoperative complications, time to discharge, voiding trial results, pain scores, analgesic usage, and unexpected admission were also evaluated. Pearson's χ^2 and Fisher exact tests were used to analyze categorical variables and independent *t*-tests for continuous variables. Logistic regression was performed to assess the association between gabapentin usage and postoperative urinary retention after adjusting for patient demographic, clinical, and operative characteristics. P values of ≤0.05 were considered statistically significant.

Results: A total of 302 patients met inclusion criteria. Overall, 19.5% of patients failed the active voiding trial after mid-urethral sling placement. Patients over age 65 were more likely to fail their voiding trial than those aged 18-65 (29.8% vs. 17.6%, $P = 0.054$). Sixteen of 62 (26%) treated patients failed their voiding trial compared to 43/240 (18%) untreated patients ($P = 0.162$). After adjusting for age, parity, postoperative pain, opioid use, operative time, use of scopolamine patch or hemostatic agent, estimated blood loss, and type of sling, patients who received gabapentin had a 71% higher voiding trial failure rate (adjusted OR = 1.71, 95% CI 0.82 to 3.54, $P = 0.149$). Treated patients had an unexpected admission rate of 4.9% compared to 1.7% for untreated patients (p = 0.129). The mean time to discharge was 177 minutes for treated vs. 167 minutes for untreated ($P = 0.377$). There was no difference in mean maximum post-operative pain score (2.8 vs. 2.9 respectively, $P = 0.805$), opioid usage (50% vs. 42.4%, $P = 0.281$), and non-opioid usage (33.9% vs. 32.6%, $P = 0.855$) between treated and untreated groups.

Conclusions: Approximately 19.5% of patients failed their voiding trial after outpatient mid-urethral sling placement, mirroring rates in the literature. While no significant differences were found between groups in the primary or secondary outcomes, including pain scores and analgesic usage, there were trends towards significance in voiding trial failure and patients requiring unexpected admission. Our study highlights the need for further consideration and investigation regarding the use of gabapentin for preoperative pain management for outpatient urogynecologic surgery.

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Poster 45
MINIMALLY INVASIVE SACROCOLPOPEXY MESH EXPOSURE RATES WITH AND WITHOUT CONCOMITANT TOTAL HYSTERECTOMY

H. Winn[1], K. Kaczmarski[1], W. Anderson[1], M. Tarr[1], B. Taylor[1], E. Myers[1]. *Atrium Health[1]*

Objective: Total hysterectomy at time of sacrocolpopexy has been well established as a risk factor for mesh exposure. Depending on mesh type, exposure rates can be as high as 10.5%. As sacrocolpopexy techniques further evolve, mesh exposure rates and adverse events continue to decrease. Our objective was to determine the risk difference of mesh exposure rates at 1-year following minimally invasive sacrocolpopexy (MISC) with and without concomitant total hysterectomy utilizing lightweight Y-mesh.

Methods: Retrospective cohort study of women who underwent a MISC performed by 5 fellowship-trained surgeons at a single institution from 2016 through 2019. Patients were identified based on procedure type. Those who underwent MISC with or without concomitant total hysterectomy and had 1 year in-office follow up were included. Women were excluded if they had a history of prior mesh augmented prolapse repair or supracervical hysterectomy at time of MISC. Data were abstracted from the electronic medical record. Women who underwent a total hysterectomy at the time of their MISC were compared to those who were post-hysterectomy at the time of surgery. Outcomes - rates of 1-year mesh exposure, NSQIP 30-day complications, 30-day readmission, recurrent prolapse - were compared between the two groups using the chi-square test or Fisher's exact test. Other variables were analyzed using Student's t-test, the Wilcoxon rank sum test, and the chi-square test or Fisher's exact test, as appropriate. Exact 95% confidence intervals were computed for the overall risk, and the risk difference, of the primary outcome, 1-year mesh exposure. Holm's step-down procedure, applied to the secondary outcomes, was used to adjust for multiple testing.

Results: Our cohort included 259 women, mean age was 63.6 ± 9.2 years, BMI 27.1 kg/m^2, 92% were white, 89% were post-menopausal, 46% sexually active, 18% had a history of prior FPMRS surgery, and 1.5% were current tobacco users. See Table 1 for demographic and operative data by MISC + total hysterectomy (n = 126) v. MISC alone (n = 133). The overall rate of mesh exposure was 3/259 (1.2%, 95% CI, 0.2% - 3.4%). All mesh exposures were in the total hysterectomy group, two with absorbable suture, one with permanent suture for graft attachment. The risk difference of mesh exposure was 2.4% (95% CI, -0.5% - 6.9%) for those who underwent MISC with concomitant total hysterectomy v. MISC alone, and was not significantly different from zero. The

NSQIP 30-day complication rate was higher in the total hysterectomy group 14.3% v. 2.3% ($P < 0.01$), however, this difference is attributed to the increased rate of urinary tract infections (total hysterectomy group n = 14, post-hysterectomy group n = 0). There were no mortalities secondary to the surgery and 30-day readmission rates did not differ between groups 1.5% v. 1.6% ($P = 1.0$). Rate of recurrent prolapse, defined as ≥ Stage 2 on clinical examination, was not statistically different between groups, MISC+ total hysterectomy 12.7 % vs. MISC alone 21.8 % ($P = 0.06$). There was only one reoperation for prolapse, which was in the MISC alone group (isolated rectocele repair).

Conclusions: In our cohort, the rate of mesh exposure one year after MISC with lightweight Y-mesh is low at 1.2%, with no statistically significant difference between those who underwent MISC with or without concomitant total hysterectomy.

Table 1. Baseline and Operative Data for MISC + Total Hysterectomy v. MISC Alone

	MISC + Total Hysterectomy n=126	MISC alone n=133	p-value
Baseline Demographics			
Age (yr), mean ± SD	63.0±9.5	64.1±9	0.35
BMI (kg/m²), mean ± SD	26.8±3.8	27.3±4.4	0.27
Baseline POPQ Stage, n (%)			0.03
I	1 (0.8)	3 (2.3)	
II	69 (54.8)	78 (58.6)	
III	44 (34.9)	52 (39.1)	
IV	12 (9.5)	0.0 (0)	
Hormonal Status, n (%)			<0.01
Pre or Peri-menopausal	22 (17.5)	6 (4.5)	
Post menopausal			
No hormones	73 (57.9)	70 (52.6)	
Vaginal estrogen only	21 (16.7)	47 (35.3)	
Oral/systemic	7 (5.6)	10 (7.5)	
Current smoking, n (%)	2 (1.6)	2 (1.5)	1.0
Diabetes, n (%)	7 (5.6)	12 (9.0)	0.28
Immunosuppression, n (%)	2 (1.6)	1 (0.8)	0.61
Sexually active, n (%)	70 (55.6)	50 (37.6)	<0.01
Prior FPMRS Surgery, n (%)	7(5.6)	42 (31.6)	<0.01
Operative Data			
Estimated Blood Loss (mL), median (IQR)	50 (45.0)	25.0 (30.0)	<0.01
Procedure duration (mins) , median (IQR)	187 (70.0)	145 (49.0)	<0.01
Length of hospital stay (hours) , median (IQR)	28.0 (15.3)	26.2 (7.6)	0.11
Route of procedure, n (%)			<0.01
Laparoscopic	36 (28.6)	62 (46.6)	
Robotic	90 (71.4)	71 (53.4)	
Colpopexy mesh type, n (%)			<0.01
Boston Scientific- Upsylon	79 (62.7)	33 (24.8)	
Coloplast- Restorelle	46 (36.5)	93 (69.9)	
Palex Medical - Alyte	1 (0.8)	7 (5.3)	
Vaginal graft attachment suture type, n (%)			<0.01
Polytetrafluoroethylene (GOR-TEX®)	32 (25.4)	24 (18.0)	
Ethibond	0 (0.0)	1 (0.8)	
Polydioxanone (PDS® II Ethicon)	25 (19.8)	8 (6.0)	
Polyglyconate-glycolic acid, trimethylene carbonate (V-Loc 180™Covidien)	69 (54.8)	100 (75.2)	
Intraoperative Complications, n (%)			1.0
Conversion to open procedure	0	0	
Bladder injury/cystotomy	1 (0.8)	2 (1.5)	
Small bowel injury	0	0	
Ureteral injury	0	0	
Large bowel injury	0	0	
Vascular injury	0	0	
Bleeding requiring transfusion	0	0	

Disclosures: Heather Winn: None, Kelley Kaczmarski: None, William Anderson: None, Megan Tarr: None, Bernard Taylor: None, Erinn Myers: Boston scientific: Paid to the hospital not to me.: Self

Poster 47

POSTOPERATIVE PAIN MANAGEMENT PRACTICE PATTERNS AMONGST UROGYNECOLOGISTS: AN INTERNATIONAL SURVEY STUDY

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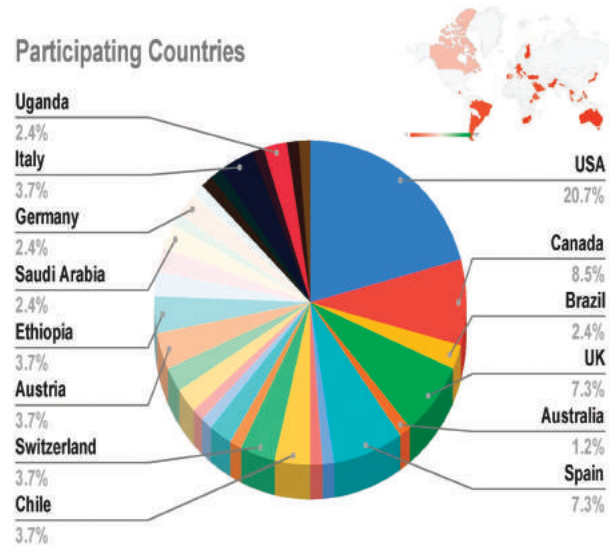
Objective: Over the past 30 years, a dramatic increase in opioids used to treat postoperative pain has been associated with the rising epidemic of opioid misuse. The incidence of new persistent opioid use following surgery is approximately 6%, more common than most post-operative complications. Surgeons play a role in this epidemic as prescribers of opioids. The literature surrounding prescribing practices following urogynecologic surgeries is sparse. The aim of this survey study was to describe current practice patterns of postoperative pain management prescribing among urogynecological providers on a global scale and provide a framework for future research on postoperative pain management.

Methods: A 21-item internet-based survey was distributed to providers who are members in the International Urogynecological Association (IUGA). The survey was conducted over a one-month period (March-April 2021) and the link was emailed on three separate occasions to allow adequate time for responses. Response to the survey was voluntary, and respondents answered questions regarding demographics, average hospital length of stay for common procedures, policies or protocols in place for postoperative pain regimens, and postoperative (inpatient and outpatient) use of narcotic and non-narcotic pain medications. Descriptive statistics and Fisher's exact test statistics were used were appropriate.

Results: A total of 893 providers were contacted with a 9.3% (83) response rate. Providers from 31 countries responded; most of the responses were from North America (30.1%) and European (20.2%) countries. The majority classified their practice as FPMRS/Urogynecology (70.7%) and 75.6 % reported their practice did have a postoperative pain regimen protocol in place (57.3% opioid including protocol, 18.3% absolute non-opioid protocol). Nearly all the providers use NSAIDs and/or acetaminophen (98.8% and 93.2 %, respectively) as a non-opioid adjunct or alternative for post-surgical pain. Most providers (70.1%) order some form of narcotic pain medication postoperatively while inpatient. Upon discharging patients post-operatively, only 48.8 % of providers typically prescribed an oral narcotic, with an average tablet count of 12 for vaginal and laparoscopic/robotic cases and 15 for open abdominal cases. A minority of providers prescribed the certain quantity of narcotics based on evidence-based prescribing guidelines or prior studies reporting average number of tablets used after surgery (7.6%). The majority responded that the quantity prescribed was based on their own experiences learned by trial & error. In regards to the United States compared to the other 30 countries combined, a significantly greater proportion of respondents in the US ordered inpatient narcotic pain medication postoperatively (100 % vs 66.2%, $P < 0.05$) & prescribed an oral narcotic upon discharge (94.1% vs 40%, $P < 0.05$).

Conclusions: In this international survey study describing postoperative pain management practice patterns, we found that most providers order narcotics for inpatient postoperative pain control and nearly half of the providers discharged patients with narcotics. However, the majority indicated that the quantity of narcotics they prescribed was not based on evidence-based prescribing guidelines. By investigating the patterns for postoperative pain management following urogynecological surgeries, we can begin to work towards establishing an evidence-based and more standardized approach to postoperative pain management.



Disclosures: Danny Mounir: None, Fiona Lindo: None, Danielle Antosh: None

Poster 48
REACH AND TEACH: PILOT-TESTING A CONTINENCE SELF-MANAGEMENT WEBSITE

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Objective: (1) To describe women who participated in a study pilot-testing a continence self-management website; (2) To explore website engagement; (3) To describe symptoms and behaviors at 4 month follow up.

Methods: An email to female employees age ≥ 50 at a large Midwest university invited women to pilot-test the website (www.healthybowelandbladder.org). Women completed electronic questionnaires at baseline and 4 months. Google Analytics described website utilization. Descriptive analyses evaluated symptoms, behaviors, and website utilization. No incentives were provided.

Results: Among 3,647 valid emails sent, 260 women completed the baseline survey and 111 provided 4 month follow up data; Google Analytics data were available for 233 women. Respondents were predominately white (97%), highly educated, and 65% had incontinence (See table).

For the 233 women for whom Google Analytics data were available, time spent on the website ranged from 0 to 269 minutes (median 5.2 minutes) and number of pages visited ranged from 1 to 172 (median 3). Women could be roughly categorized as low, medium, and high engagers: 86 (37%) visited a single webpage; 69 (30%) visited 2-6 webpages, and 78 (33%) visited more than 6 pages, suggesting that they advanced beyond the program introduction. 88 women (38%) spent fewer than 3 minutes total on the website; 76 (33%) 3 - 12 minutes, and 69 (30%) more than 12 minutes.

Those who did and did not provide follow up did not differ significantly. Among those women who provided follow up data, the proportion who reported doing pelvic floor muscle (Kegel) exercises often or always increased from 8% (9/111) at baseline to 28% at 4 month follow up (28/102, $P < .001$). There was no change in pad use (30/111, 27% to 30/102, 29%, $P = .699$). Among 97 who completed the global perception of improvement questions, 42% reported improvement in symptoms (6% much better, 36% better) and the rest noted symptoms were about the same (58%). Regarding satisfaction with their progress in the program, 34% were completely, 60% somewhat, and 6% not at all satisfied.

Conclusions: Our sample pilot-testing a continence website was highly educated and predominantly white. While most spent little time and visited few pages on the website, the proportion of women who reported performing Kegel exercises often or always significantly increased from baseline to 4 months, and 42% reported symptom improvement. Future work will intentionally recruit a more diverse sample of women and will explore the impact of website engagement on behavior change and symptom improvement.

Table 1. Baseline Characteristics of the Study Participants.

	Overall (n=260)	Non-completers (n=149)	Completers (n=111)	P-value
Demographics				
Age mean ± SD (N=247)	57.8 ± 6.0	58.3 ± 6.0	57.1 ± 5.8	.132
Race (N=245)				.421
Black or African American	0 (0)	0 (0)	0 (0)	
Native Hawaiian or other Pacific Islander	0 (0)	0 (0)	0 (0)	
White	238 (97.1)	129 (96.3)	109 (98.2)	
Native American or Alaska Native	1 (0.4)	0 (0)	1 (0.9)	
Asian	3 (1.2)	2 (1.5)	1 (0.9)	
Middle Eastern or North African	1 (0.4)	1 (0.7)	0 (0)	
Other or multiple	2 (0.8)	2 (1.5)	0 (0)	
Did not provide response	0 (0)	0 (0)	0 (0)	
Ethnicity Hispanic, Latina, or Spanish (N=248)	3 (1.2)	3 (2.2)	0 (0)	.117
Education (N=251)				.992
High school or less	5 (2.0)	3 (2.1)	2 (1.8)	
Attended college or vocational school	21 (8.4)	12 (8.6)	9 (8.1)	
Associate's or bachelor's degree	60 (23.9)	34 (24.3)	26 (23.4)	
Graduate degree	165 (65.7)	91 (65.0)	74 (66.7)	
Symptoms and behaviors at baseline				
Incontinence (N=254)				
Bladder	76 (29.9)	47 (32.9)	29 (26.1)	.245
Bowel	37 (14.6)	23 (16.1)	14 (12.6)	.437
Both	47 (18.5)	23 (16.1)	24 (21.6)	.260
None	90 (35.4)	49 (34.3)	41 (36.9)	.659
Pad use (N=251)	73 (29.1)	43 (30.7)	30 (27.0)	.523
Kegel exercises often/always (N=251)	21 (8.4)	12 (8.6)	9 (8.1)	.895
Website Utilization (N=233)				
Time on website in seconds - median (IQR)	310 (119-935.5)	372.5 (114.25-864.5)	247 (123.5-1040.5)	.447
Number of unique pages viewed - median (IQR)	3 (1-10)	3 (1-9)	3 (1-10)	.515
Device used to access website				.477
Desktop only	203 (87.1)	120 (88.2)	83 (85.6)	
Tablet only	10 (4.3)	4 (2.9)	6 (6.2)	
Mobile only	17 (7.3)	11 (8.1)	6 (6.2)	
Multiple devices	3 (1.3)	1 (0.7)	2 (2.1)	

Disclosures: Gabrielle Avery: None, Madeline Moureau: None, Megan Piper: None, Nicole Werner: None, Heidi Brown: None

Poster 49
RESIDENTS' EXPERIENCE AND TRAINING IN OASIS REPAIRS

S. Narayanamoorthy[1], R. McLaren[1], K. Singh Balhotra[1], E. McKay[1]. *Maimonides Medical Center*[1]

Objective: Obstetric anal sphincter injuries (OASIS) sequelae include fecal incontinence, perineal pain, dyspareunia, and rectovaginal fistula, leading to a compromised quality of life, social stigma and embarrassment. Missed diagnosis, lack of expertise, insufficient training, and inadequate surgical technique may lead to complications of OASIS repair. This study's objective was to analyze OBGYN residents' comfort level, learning curve and variation in training methods across the US residency programs in OASIS identification, repair technique, and postpartum care.

Methods: This was a cross sectional online survey performed on OBGYN residents of all training programs in the US in March 2021. Questions on the survey consisted of demographic information, residency program characteristics and resident's comfort level on repairing OASIS. Descriptive analyses and Fisher's Exact tests were performed. Spearman's correlation was performed

Results: Of the 1450 residents from 286 OBGYN programs, 160 (11%) participated in the survey. The mean age was 31. The majority of residents were female (90%) and Caucasian (65.6%). Of the 160 residents, confidence of repair increased as residency level increased ($r = 0.52$, $P < 0.001$). Confidence in repair of OASIS increased as the number of third-degree repairs and fourth-degree repairs they performed increased (third degree, $r = 0.595$, $P < 0.001$; fourth degree, $r = 0.458$, $P < 0.001$). The technique used by most residents was the end-to-end technique (101 [63.1%]). Most common suture used for anal sphincter repair was 2-0 vicryl (75%) and for anal epithelium was 3-0 Vicryl (36%). Thirty-six residents (22.5%) were unsure of which suture to use.

Residents followed the recommendation on the use of stool softeners (97%) and antibiotics (82.5%). While a recommended follow up timeframe has not been established, 59 % of the participants routinely schedule follow up in 2 weeks. Only 1.2% of the residents reported use of trans-anal sonography to evaluate anal sphincter integrity after delivery.

Residents were more likely to feel confident if they had a lecture when compared to ones who did not have lectures (40.5% confident with lecture versus 15.6% without lecture; $p = 0.006$). Residents' confidence in repair did not differ among those who had and did not have simulation training (38.5% confident with simulation versus 27.5% without simulation; $p = 0.254$). Residents' confidence in repair did not vary with presence of a fellowship at their program (36.9 vs 32.7%; $P = 0.605$)

Conclusions: We found that residents reported more confidence in OASIS repair with higher number of cases they repaired. In addition, resident's confidence in OASIS repair increased if they had lectures, however simulations did not increase their confidence.

Demographic Characteristics	Number of participants (N=160)
Age (years) [N=154]	31
Gender	
Female	145
Male	13
Transgender female	
Transgender male	1
Gender variant	1
Race/Ethnicity	
African American	7
Asian	21
Caucasian	105
Hispanic	16
Pacific Islander	2
Other	6
Prefer not to answer	3
Postgraduate year level	
1	35
2	36
3	50
4	39
Number of deliveries performed	
0-20	0
21-40	2
41-60	5
61-80	6
81-100	6
>100	141
Primary training environment	
University based	85
Community based	67
Others	8
Region of training*[N=152]	
Northeast	61
South	28
Midwest	47
West	16
Programs with Fellowships	105 (65.6%)
Site of repair	
OR	26
Labor and Delivery	128
Other	1
Don't know	5

Disclosures: Sujatha Narayanamoorthy: None, Rodney McLaren: None, Kimen Singh Balhotra: None, Elishia McKay: None

Poster 50
IMPACT OF TELEMEDICINE ON THE SURGICAL MANAGEMENT OF PELVIC FLOOR DISORDERS

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Objective: Our department rapidly adopted a telemedicine option for outpatient evaluation of women with pelvic floor disorders during the pandemic. Our objective was to determine the proficiency of telemedicine in diagnosis of pelvic floor disorders and if an initial telemedicine visit impacted the rate of surgical management compared to an in-person evaluation.

Methods: We performed a retrospective cohort study of all new patients referred to a single attending provider in female pelvic medicine at a tertiary care referral center who were seen via a telemedicine visit in the first 2 months of telehealth adoption during the COVID pandemic. New telemedicine patients were then compared to patients seen for a new in-person visit over the same time period the previous year. Via chart review, we collected demographic data, primary diagnoses rendered following visit completion and treatment (medical versus surgical) chosen. We compared the rate of surgical posting, number of visits from initial visit until the date of surgery, and rate of surgery cancellation in women seen for a pelvic floor disorder as a new in-person versus by telemedicine.

Results: A total of 310 new patient visits were queried: 182 (59%) that took place in person between June 1 and July 30, 2019 and 128 via telemedicine over the same timeframe in 2020 (41%). Table 1 presents comparative demographic data, primary diagnoses and surgical procedures that resulted in each cohort. For women with a diagnosis of stress or mixed urinary incontinence, the rate of surgical posting for a sling procedure in-person- v. by telemedicine was 25% and 38%, $P = 0.176$. For women with a diagnosis of pelvic organ prolapse, the rate of surgical posting in-person v. by-telemedicine was 42% and 47%, $P = 0.578$. The median total number of outpatient visits required from initial visit to day of surgery was 2 in both groups, and the rate of surgery cancellation was 26% (in-person) and 12%(telemedicine), $P = 0.168$.

Demographics			
	2019 (In-person)	2020 (Telemedicine)	p-value
Total	182.00	128.00	
Age-- years			p=0.022
Median (range)	61.00 (18-92)	56.00 (18-87)	
Race-- n (%)			
Caucasian	149 (82)	104 (81)	p=0.883
African American	22 (12)	14 (11)	p=0.866
Hispanic	6 (3)	7 (6)	p=0.396
Other	5 (3)	3 (2)	p=0.999
BMI			p=0.187
Median (range)	28.00 (18-50)	27.00 (19-83)	
Surgery--n (%)			
Total	50.00	33.00	
Scheduled on initial vist (% of total surgery)	34 (68)	26 (79)	p=0.325
Cancelled (% of total surgery)	13 (26)	4 (12)	p=0.168
Total appts prior to surgery			p=0.619
mean (range)	2.50 (1-7)	2.40 (1-5)	
Diagnosis (often coexist) n (% of total patients)			
Pelvic organ prolapse	86 (47)	58 (45)	
Vaginal bulge	14 (8)	5 (4)	
Voiding dysfunction	66 (36)	53 (41)	
Defecatory dysfunction	16 (9)	16 (13)	
Stress urinary incontinence	37 (20)	20 (16)	
Mixed urinary incontinence	34 (19)	16 (13)	
Pelvic pain	24 (13)	25 (20)	
Urogenital atrophy	55 (30)	22 (17)	
Recurrent UTI	19 (10)	14 (11)	
Other	23 (13)	16 (13)	
Operation performed (often concurrently) n (% total surgery)			
Anterior repair	13 (26)	12 (36)	
Posterior repair	21 (42)	18 (55)	
High perineorraphy	3 (6)	2 (6)	
Uterosacral ligament suspension	8 (16)	3 (9)	
Sacrospinous ligament suspension	6 (12)	10 (30)	
Robotic-assisted sacrocolpopexy	16 (32)	8 (24)	
Total vaginal hysterectomy	10 (20)	7 (21)	
Total laparoscopic hysterectomy	4 (8)	2 (6)	
Bilateral salpingo-oophorectomy	16 (32)	8 (24)	
Mid-urethral sling	22 (44)	11 (33)	
Other	10 (20)	13 (39)	

Conclusions: New patient visits conducted via telemedicine resulted in similar rates of accurate surgical postings for both urinary incontinence and pelvic organ prolapse despite the absence of a pelvic examination. This data is useful for continuation of telemedicine platforms post pandemic.

Disclosures: Lily Velet: None, Randy Cassals: None, Raymond Xu: None, Catherine Matthews: None

Poster 51
DOES GABAPENTIN IMPACT RESPONSE TO ANTICHOLINERGIC THERAPY FOR OVERACTIVE BLADDER?

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Objective: To determine if patients with overactive bladder are more likely to respond to anticholinergic therapy if they are already taking gabapentin.

Methods: Female patients taking anticholinergics were identified in the medical record of a single tertiary medical center; data collected included demographic, medical and surgical variables. Information regarding pre-existing gabapentin use, dose, and duration was also collected. Patients were stratified by those that responded to anticholinergic therapy and those that did not. Descriptive statistics were expressed as medians and interquartile ranges (IQR). Pairwise analysis was performed using Wilcoxon rank-sum. Multivariable logistic regression was used to identify independent variables predicting response.

Results: Seven hundred and fifty-six subjects met all criteria for analysis. Of these, n = 353 responded to anticholinergic therapy and n = 403 did not. Responders were less likely to have a history of stroke, anxiety/depression, neurodegenerative conditions, stress urinary incontinence and narcotic use. Responders also experienced less daily incontinence episodes, daytime voids, and nighttime voids and had failed fewer previous anticholinergic medications than non-responders. There was no significant difference between responders and non-responders by gabapentin use, dose, or duration (Table 1). On multivariable analysis, response to anticholinergic medication was associated with higher body mass index, no history of anxiety/depression or neurodegenerative conditions, experiencing less daily incontinence episodes and nighttime voids, and having failed fewer prior anticholinergic medications (Table 2).

Conclusions: There is no association between pre-existing gabapentin use and response to anticholinergic medication, which persisted when examining the relationship by both gabapentin dose and duration of use.

UPLOAD-https://planion-client-files.s3.amazonaws.com/AUGS/blobs/198f0470-627f-40c5-a4ba-5f7a6fa84ffc/1/OAB_Gabapentin_Table_1.tif

UPLOAD-https://planion-client-files.s3.amazonaws.com/AUGS/blobs/90408640-80fc-4bca-bc32-4ba9133d97cf/1/OAB_Gabapentin_Table_2.tif

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Poster 52
PATIENT SATISFACTION FOLLOWING IMPLEMENTATION OF A NURSING PREPARATION PROTOCOL FOR TELEHEALTH VISITS

T. Overholt[1], R. Dutta[1], W. Smith, C. Matthews[1]. *Wake Forest Baptist Health[1]*

Objective: The Covid-19 pandemic prompted broad adoption of telehealth platforms. Our goals were to determine effectiveness of a telemedicine nursing protocol in patient engagement, preparation, and satisfaction.

Methods: We implemented a standardized telemedicine nursing protocol prior to a scheduled telehealth visit with a urologic provider at a tertiary care center. Demographic data, telehealth platform and smart device preference, requirement of set up assistance, and rate of success were reviewed. We

prospectively administered the Telehealth Usefulness Questionnaire (TUQ), a validated 21-item survey assessing patient satisfaction in 6 domains: Usefulness, Ease of use, Interface quality, Interaction quality, Reliability, and Future use. Scores >105 (>5 for individual items) correlate with high satisfaction.

Results: From April – May 2020, 265 patients were included. Demographic data is provided in Table 1. The most commonly used platform for audiovisual visits was Doximity Dialer (85.7%) via Android (50.2%) or Apple (43.0%) smartphone. Eighteen (6.8%) patients reported setup assistance from family/friends. Only 4 (1.8%) were unsuccessful and required conversion to a non-visual phone visit (3 for lack of access to a compatible device; 1 for inability to understand instructions). Of these, 186 (70.1%) patients completed the post-visit questionnaire. Mean TUQ scores were 118.31 ± 23.44. Nineteen of 21 individual items had mean scores >5.0. The Usefulness (5.936 ± 1.231) and Interaction Quality (5.89 ± 1.412) subdomains had the highest mean scores. The Reliability subdomain had the lowest mean score (4.715 ± 1.593). Increased TUQ scores were associated with decreased age ($P = 0.02$) and female gender ($P = 0.02$). Patients reported high satisfaction with their telemedicine experience regardless of race, marital status, annual income, education level, employment status, or physical distance from clinic but younger age and female gender were associated with greater satisfaction.

Conclusions: A standardized nursing protocol designed to maximize patient engagement with telehealth was successful in achieving patient-provider connectivity in 98% of subjects with high patient satisfaction. A team approach to telehealth is recommended.

Table 1. Demographic data of patient's who underwent a telehealth visit at urology clinic and completed a post-visit Telehealth Usability Questionnaire (TUQ). An ANOVA of variance was performed to identify relationships between demographic variables and TUQ scores.

	Mean ± Std Dev	N (%)	P-Value
Age	65.12 ± 41.49		0.017
Distance (miles)	48.72 ± 76.14		0.377
Race/Ethnicity			
Black/African American		22 (11.8%)	0.874
Asian		1 (0.5%)	
Hispanic/Latinx		1 (0.5%)	
White/Caucasian		156 (83.9%)	
Other		6 (3.2%)	
Gender			
Women		98 (52.7%)	0.017
Men		86 (46.2%)	
Other		2 (1.1%)	
Marital Status			
Single		8 (4.3%)	0.270
Separated		4 (2.2%)	
Married/Partnership		140 (75.3%)	
Divorced		22 (11.8%)	
Widowed		11 (5.9%)	
Other		1 (0.5%)	
Annual Income ($)			
< 20,000		11 (5.9%)	0.159
20,000-34,999		22 (11.8%)	
35,000-49,000		24 (12.9%)	
50,000-74,999		20 (10.8%)	
75,000-99,999		26 (14.0%)	
≥ 100,000		54 (29.0%)	
Preferred not to answer		29 (15.6%)	
Education Level			0.097
Some high school		6 (3.2%)	
High school degree		16 (8.6%)	
Some college		41 (22.0%)	
Associate degree		25 (13.4%)	
Bachelor's degree		56 (30.1%)	
Master's degree		29 (15.6%)	
Doctorate degree		9 (4.8%)	
Preferred not to answer		4 (2.2%)	
Employment Status			
Employed full time		46 (24.7%)	0.311
Self employed		12 (6.5%)	
Employed part time		7 (3.8%)	
Retired		78 (41.9%)	
Unemployed		33 (17.7%)	
Preferred not to answer		10 (5.4%)	

Disclosures: Tyler Overholt: None, Rahul Dutta: None, Whitney Smith: None, Catherine Matthews: None

Poster 53

ASSESSMENT OF THE RISK OF RE-OPERATION AFTER SUBURETHRAL SLING SURGERY

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Objective: To determine the rate of re-operation after three types of suburethral sling surgeries, specifically Tension-Free Vaginal Tape (TVT)-Exact, TVT-Obturator (TVT-O), and rectus fascia sling (RFS), for a board certified Female Pelvic Medicine and Reconstructive Surgeon in Denver, Colorado among patients insured by Colorado Permanente.

Methods: A retrospective cohort study was conducted among patients who received a suburethral sling operation to treat stress urinary incontinence (SUI) between 2011 and 2019 at Colorado Permanente. Analysis was conducted with a surgical dataset from a single surgeon extracted from electronic health record data. Statistical analysis was conducted using a log-binomial regression model. Relative risk was obtained for how likely patients with a specific type of suburethral sling initial surgery were to have a re-operation compared to patients with a different type of suburethral sling initial surgery.

Results: Of 915 total surgeries, 399 were TVT-O, 496 were TVT-Exact, and 20 were RFS. The overall re-operation rate among patients who had an initial suburethral sling operation for SUI treatment was 4.92%, with 3.5% for TVT-O, 5% for TVT-Exact, and 10% for RFS. These surgeries were most frequently sling revision (TVT-O 89%, TVT-Exact 71%), rather than correction for a sling failure. Patients with an initial TVT-O surgery had a 40% lower risk of re-operation compared to patients with an initial TVT-Exact surgery, and a 65% lower risk of re-operation compared to patients with an initial RFS, although these results did not reach statistical significance. Patients with an initial RFS had a 71% increased risk of re-operation compared to patients with an initial TVT-Exact surgery, again not reaching statistical significance. Approximately half of re-operations for TVT-O (50%) and TVT-Exact (56%) slings were within the first five months after original sling placement. After the first year, re-operation rates plateaued. One hundred percent of the re-operations were completed by 88 months for TVT-exact, 69 months for TVT-O, and 21 months for RFS. Age, race, insurance (Kaiser vs Kaiser Medicaid), and language were not confounding factors.

Conclusions: Patients undergoing suburethral sling repair were shown to have an overall low risk of re-operation. The risk is lowest with TVT-O, and about half of re-operations occurred in the first 6 months. This study was limited by restriction of data to a single surgeon's case list. In the future, we would like to expand this data analysis to additional physicians within the group to identify areas in which patient outcomes could be better predicted, and ultimately improved.

Disclosures: Ariana Talaie: None, Sarah Rabice: None, Laura Palmere: None, Alex Shapiro: None

Poster 54

INDIVIDUALS WITH OVERACTIVE BLADDER AND HIGHER BOTHER SCORES DEMONSTRATE UNIQUE SENSATION-CAPACITY CURVE SHAPES DURING URODYNAMICS

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Objective: Urinary urgency is the key symptom of overactive bladder (OAB), and is based on an individual's perception of bladder sensation. A Sensation Meter was recently developed to record real-time patient-reported bladder sensation. The objective of the current study was to use the Sensation Meter during urodynamics (UD) and correlate %sensation-%capacity curve patterns with the degree of reported bother associated with rushing to the toilet.

Methods: Participants indicated for UD were screened for an Institutional Review Board-approved study and completed the International Consultation on Incontinence questionnaire on OAB (ICIq-OAB). Participants that were categorized as having OAB based on a score of ≥2 on question 5a

about how often they rush to the toilet (0 = never, 4 = all of the time) were enrolled in the study. Individuals were divided into two groups based on ICIq-OAB question 5b about how much rushing to the toilet bothers them (0 = not at all, 10 = a great deal). Participants with 5b scores <7 were grouped as low/moderate bother and those with 5b scores ≥8 were grouped as high bother.

Participants recorded bladder fullness sensation on a 0-100% scale using the Sensation Meter throughout the filling phase of a UD study. Sensation was sampled at 5% capacity increments and %sensation-%capacity curves were generated. Area-under-the-curve analysis was implemented to differentiate between "r," "l," and "j" %sensation-%capacity curve shapes (Fig 1), and these shapes were correlated with the high and low/moderate bother groups. Sensation increased relatively linearly throughout an l-shaped curve (Fig 1). The r-shaped curves had a greater increase in sensation during the first half of filling and the j-shaped curves had a greater increase in sensation in the second half of filling (Fig 1).

Results: The study had 61 participants, including 46 women and 15 men. The distribution of %sensation-%capacity curve shapes was 7 (11%) "r," 40 (66%) "l" and 14 (23%) "j." Participants with "r" and "l" curves were split evenly between the low/moderate bother group (23/47, 49%) and the high bother group (24/47, 51%). In contrast, individuals with "j" curves predominately had high bother (12/14, 86%) compared to low/moderate bother (2/14, 14%), and j-shaped curves were significantly associated with high bother (Fisher's Exact, $P < 0.05$).

Conclusions: This study introduced a novel technique to categorize %sensation-%capacity curves with r, l, and j shapes, and found that j-shaped curves were associated with a high degree of bother from urgency to rush to the toilet. Future studies could use this method to identify unique OAB sensation subtypes.

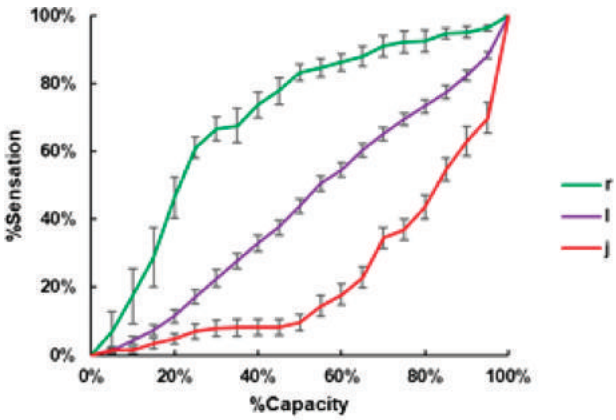

Fig 1. Average %sensation-%capacity curves with "r" (green, n=7), linear "l" (purple, n=40) and "j" (red, n=14) shapes.

Disclosures: Lauren Siff: None, Mrudula Bandaru: None, Annapoorani Narayanan: None, Devina Thapa: None, Annika King: None, Rui Li: None, William Visser: None, Adam Klausner: None, John Speich: None

Poster 55

EVALUATION OF ONLINE VIDEO GAMER BEHAVIOR ON TWITCH: ARE GAMING STREAMERS PROVIDING ADEQUATE TIME FOR THEIR STREAMS?

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Objective: Undesirable voiding habits, such as holding urine, can lead to dysfunctional voiding as well as a dysfunctional pelvic floor by promoting poor coordination of the sphincter and detrusor.[1] Additionally, it can decrease compliance of the bladder in a similar fashion as bladder outlet obstruction.[2] Video games have become a prominent hobby across the world. Twitch is the leading online platform for users to live stream their video gameplay. As of February 2020, Twitch has drawn 15 million daily viewers with 3 million monthly broadcasters. Our objective was to evaluate the behaviors of top twitch streamers to determine if their video gameplay could potentially be a source of suboptimal voiding behavior.

Methods: An observational study was performed by observing online video game players on the streaming platform Twitch. The videos were previously recorded live broadcasts. Footage was observed and analyzed with the goal of determining break patterns during a prolonged period of game play. A break was recorded as when a player left his or her desk. For the purpose of this study, only game streams of 480 minutes or longer were analyzed. The total amount of footage for each player was taken from two near-equal length recordings.

Results: A total of 396.5 hours of video gameplay was analyzed between 20 Twitch streamers (14 male and 6 female). The median analyzed time per player was 19.9 hours (IQR 19.1-20.5). These videos had from thousands to millions of total views. For the female cohort, two out of six players only took 3 breaks (median of 1.8 minutes per break) for the duration of their recorded play time. The other females took between 10 and 25 breaks for an average time of 1.74 minutes per break. When examining the male players, one player took only 2 breaks (average 2.8 minutes per break) for the duration of his 19 hours of gameplay. The other 13 players averaged 8.8 breaks each (range 6-13).

Conclusions: To the author's knowledge, this is the first study to evaluate behaviors of online video gamers in the context of its potential for future urinary dysfunction. Due to the observational nature of this study, we were only able to able to assess time intervals in the absence of voiding, since the breaks could not be confirmed to be for urination. We did observe 3 players who only took 2-3 breaks over a 19-hour interval, suggesting suboptimal voiding behavior. Though it is not established that this behavior could lead to long-term voiding dysfunction, further studies on prolonged video game play can offer better understanding on a prevalent social activity and its potential to form suboptimal voiding behaviors.

Disclosures: Aaron Smith: None, Wai Lee: None, Morgan Sly: None, Kiley Clark: None

Poster 56

ATTITUDES TOWARD COVID-19 AND VACCINATION AMONG UROGYNECOLOGY PATIENTS

S. Spector[1], H. ul Rasool[2], S. Shah[1], E. Hilt[3], L. Lipetskaia[4]. *Cooper University Health Care[1], Cooper University Hospital, C[2], Cooper Medical School of Rowan University[3], Cooper Health University[4]*

Objective: Given recent advances in vaccines for COVID-19, we aim to assess urogynecology patients' attitudes toward the pandemic, in-person visits, and vaccination. The COVID-19 pandemic has made medical care for the elderly population particularly challenging. With social distancing precautions limiting in-person care of this high-risk population, many institutions have relied on increased telemedicine visits to care for these patients. Urogynecology is a field that cares for a high proportion of elderly women and requires invasive exams prior to the initiation of most therapies, thus limiting the utility of telemedicine.

Methods: A cross-sectional survey of urogynecology patients at a tertiary care academic center was conducted to assess patients' attitudes toward the COVID-19 pandemic and vaccines. Patients who had an in-person urogynecology visit between March 2019 and March 2021 were contacted by telephone and offered participation. Telephone surveys for this preliminary analysis were conducted from March through April 2021. Responses were recorded on anonymous electronic spreadsheets. Information collected included demographic and health data, opinions on several factors related to the COVID-19 virus and vaccines, and the impact on their care. The primary endpoint was the proportion of patients answering "probably planning" or "definitely planning" to get the vaccine. Descriptive analysis was performed. We present the preliminary data of the first 31 completed phone surveys. Through June of 2021 we plan to complete the survey of 200-300 patients and perform chi square and logistic regression to identify factors that lead to increased odds of vaccination.

Results: Forty-eight percent (15/31) of patients reported a decrease in the quality of their medical/urogynecology care or postponing office visits or surgery. Seventy-five percent (21/28) of those surveyed reported more trust in the government, newspaper, or doctors rather than their family or television for accurate COVID-19 information.

Concern for side effects was the most commonly reported source of vaccine apprehension (15/31). Seventy-seven percent (24/31) of those surveyed responded that they would probably or definitely get the vaccine. Of that group, 71% (17/24) reported already being vaccinated. Seven patients reported being undecided or less likely to get the vaccine, four of which noted prior COVID-19 infection as a major reason for declining vaccination.

When questioned about steps that our clinic could take to improve patient comfort, 87% (27/31) reported that following proper COVID-19 safety precautions would majorly increase their comfort. Ninety-four percent (29/31) of patients reported feeling either somewhat or very comfortable coming to an in-person visit at the time they were surveyed.

Conclusions: This preliminary analysis demonstrates the impact of the pandemic on the urogynecology population. COVID-19 appears to have negatively affected urogynecology care. So far, most patients planned to get or were already vaccinated. Regardless of their opinions concerning COVID-19 and vaccination, the vast majority of patients are comfortable coming to in-person visits. While the future of COVID-19 is unclear, understanding its impact and patient attitudes will be crucial for adapting patient care going forward.

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CROWDSOURCING A DIAGNOSIS: TRENDS IN THE UTILIZATION OF THE SUBREDDIT R/ASKDOCS FOR THE DIAGNOSIS OF URINARY TRACT INFECTION (UTI)

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Objective: To describe the utilization of a popular online forum, subreddit r/AskDocs, for the diagnosis of urinary tract infections (UTI) in 2020 and explore whether COVID was associated with increased utilization of online forum health care.

Methods: The Reddit Pushshift API and Python were used to search for genitourinary infections in the subreddit r/AskDocs between the dates of January 1 2015-December 31 2020 to describe the trend in utilization over 5 years. The year 2020 and the diagnosis of UTI was then chosen for further analysis as the most queried diagnosis in the most utilized year. Posts, responses, and their associated URL were pooled into Microsoft Excel for manual review. Posts flagged by the forum moderators for insufficient information, duplicate requests, viral posts (>50 comments), and posts made on another's behalf were excluded. Manual review was performed to collect the original poster's self-reported age and sex, as well as responder classification. The forum classifies responders as unverified (not a doctor, or "NAD") and verified medical professionals. Posts in April 2020 (peak timing of COVID19 restrictions in the US) were further analyzed and coded according to themes identified by manual qualitative review.

Results: Over 5 years, UTI was the most frequently mentioned diagnosis, with 8100 posts written with an average annual growth rate of 205%. 3275 (40%) of posts for UTI were placed in 2020, of which 2738 met inclusion criteria. The majority of posts came from females (69%) with a mean (±SD) age of 24.4 ± 6. 86% of posts received a response from "NAD", while 27% of requests received a response from verified medical professionals, 41% of whom identified as physicians.

During April 2020, 248 posts for UTI were made which was not different than during other months in 2020 (p = 0.38). The median (IQR) duration of symptoms was 21 (4-90) days. 31% of requests were made for the purpose of receiving a new diagnosis and 35% were requesting a second opinion. Another 16% mentioned plans of seeing a doctor or wanted advice on whether their symptoms warranted a visit. The remainder of requests (9%) requested clarification on medications or other advice. Of all UTI posts in April 2020, 50 (21%) mentioned COVID19 as a barrier to receiving/seeking care. Several requests described concerning symptoms of hematuria (18%) and back pain (30%). 12% of individuals self-identified as having recurrent/chronic UTI and 9% described the use of over the counter medications or supplements to prevent UTI.

Conclusions: These data demonstrate that requests for online support for the diagnosis and management of UTIs are growing annually and that patients who received care in a medical office still go online to receive verification of the medical plan. Many users post in the hopes of getting a new diagnosis from a medical professional, however, they were more likely to get a response from a non-verified user. Additionally, COVID19 delays/closures were identified by many users as a barrier to seeking medical care in April 2020.

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PREOPERATIVE UTERINE WEIGHT IN MINIMALLY INVASIVE HYSTERECTOMY: AN ANALYSIS OF ACCURACY AND EFFECTS

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Objective: Pre-operative assessment of uterine size plays an important role in surgical planning including selection of route of surgery and use of proper billing codes. The aim of this study was to compare the uterine weight based on hysterectomy billing codes and actual uterine weight as determined by pathology results. Secondary aim was to assess interaction between the accuracy of billing codes and peri-operative factors.

Methods: This is a retrospective cohort analysis of the National Surgical Quality Improvement Program (NSQIP) for the years 2014-2019. Current procedural terminology (CPT) codes for hysterectomy were used to identify cases including qualifiers for uterine weight (<250 g and > 250 g). Cases were excluded for pre-operative sepsis, renal failure, pre-existing malignancy or emergent surgery. Actual uterine weight was determined by post-operative pathology report. The two cohorts were defined based on accuracy of CPT code compared to actual uterine weight. Cases were considered accurate if CPT code was used for hysterectomy for uterus <250 g where true uterine weight was <250 g or hysterectomy for uterus >250 g with true weight > 250 g. Cases were considered inaccurate for cases using CPT codes for hysterectomy <250 g where true uterine weight > 250 g and hysterectomy for uterus >250 g with true weight < 250 g. Multivariable logistic regression analysis was utilized to identify variables independently predictive of inaccurate preoperative uterine weight estimation. Secondary outcomes included association of billing code accuracy and gynecologic subspecialty, surgical approach, and operative time.

Results: A total of 107,818 cases of hysterectomy met inclusion criteria. Of these, 102,260 (94.84%) had an accurate CPT code for uterine weight while in 5,558 (5.16%) cases the CPT code was inaccurate for actual uterine weight. Of the 90,343 cases in which the true uterine weight was <250 g, 2,001 (2.21%) used a CPT code for uterine weight > 250 g. In contrast, of the 17,475 cases in which true uterine weight was >250 g, 3,557 (20.35%) inaccurately used a CPT code for uterine weight < 250 g ($P < 0.0001$). Cases where actual uterine weight was >250 g but billing code for <250 g was used had longer operative time compared to use of accurate >250 g code (41.78% vs 24.31% lasting longer than 170 minutes, $P < 0.0001$). Cases in which a vaginal hysterectomy was performed had the highest rate of preoperative prediction accuracy while laparoscopic assisted supracervical hysterectomy had the lowest (97.4% vs 93.7% $P < 0.0001$). Predictive accuracy was significantly greater in cases performed by urogynecologists in comparison to general gynecologists (97.44% vs 94.5% $P < 0.0001$). Multivariable regression analysis confirmed that urogynecology subspecialty (OR 0.53, CI 0.46-0.61, $P < 0.0001$) was protective of inaccurate uterine weight CPT code use and inaccurate estimation was a significant predictor of extended operative time > 170 minutes (OR 2.72, CI 2.49-2.98, $P < 0.0001$).

Conclusions: In patients undergoing minimally invasive hysterectomy, inaccurate CPT codes were used in 5.16% of cases which has billing and reimbursement implications. Underestimation of uterine weight based on CPT codes was associated with longer operative times. Urogynecologists were more likely to use proper CPT code for uterine size in comparison to general gynecologists.

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