ST VINCENT'S HOSPITAL
SYDNEY

Professor Phillip Stricker

Radical Prostatectomy Not So Radical ?

Improving Surgery Outcomes -6 Steps

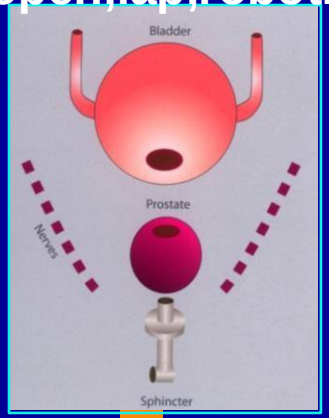
- The Correct Choice
- Pre op Preparation
- Know your Results & Keep improving
- Perform the surgery well
- Post op Support & Rehab
- Keep checking Results

The Correct Choice

- Know all options
- No rush
- Understand all factors (Tumour, Personal , Prostate , Personality)
- 2nd opinions , MDT
- Develop Trust in team

What are the treatments?

Surgery
open,lap,robotic



Focal Therapy

Radiotherapy

Wires

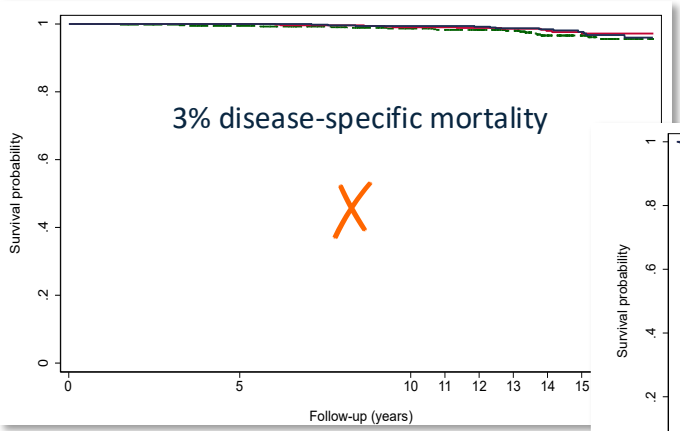
Active Surveillance

Seeds

St Vincent's prostate cancer centre

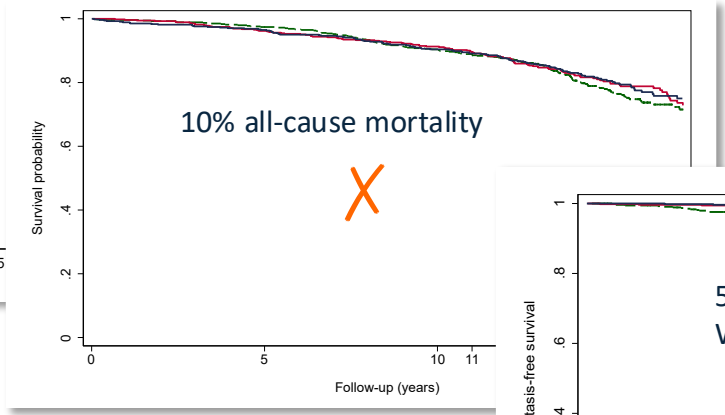
ProtecT 15-y clinical outcomes

Hamdy et al, NEJM 2023



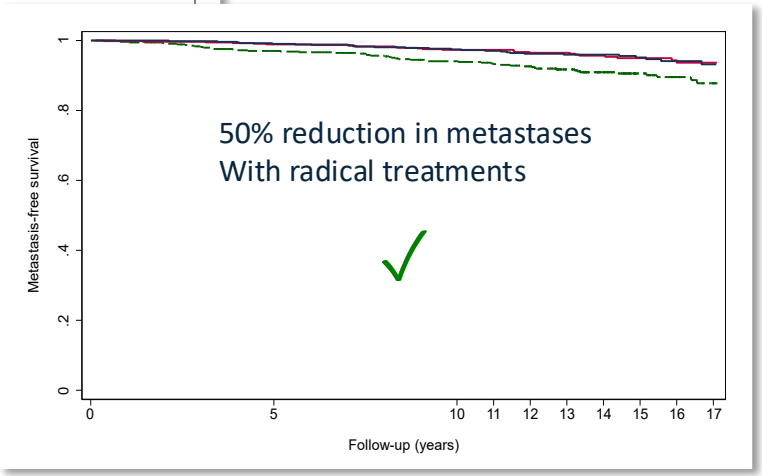
3% disease-specific mortality

✗



10% all-cause mortality

✗

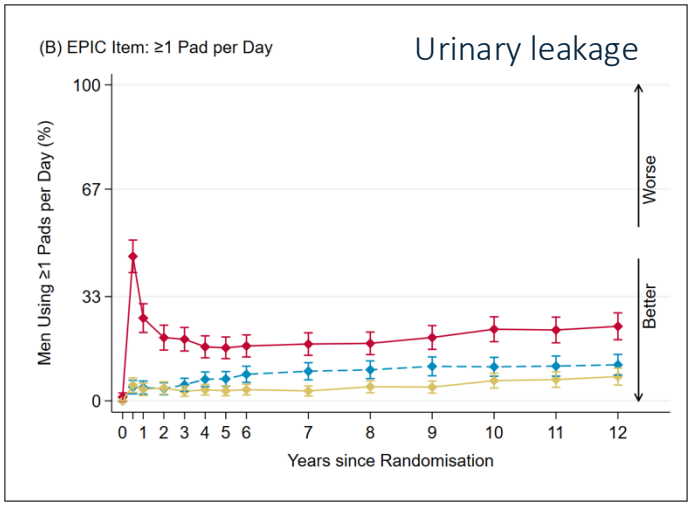


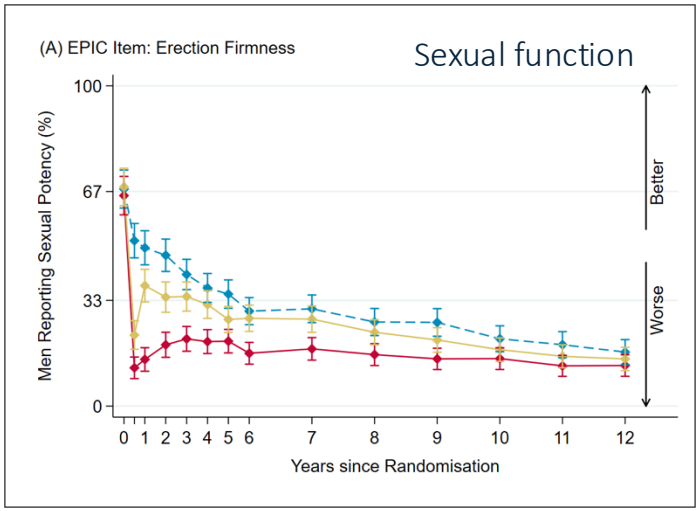
50% reduction in metastases
With radical treatments

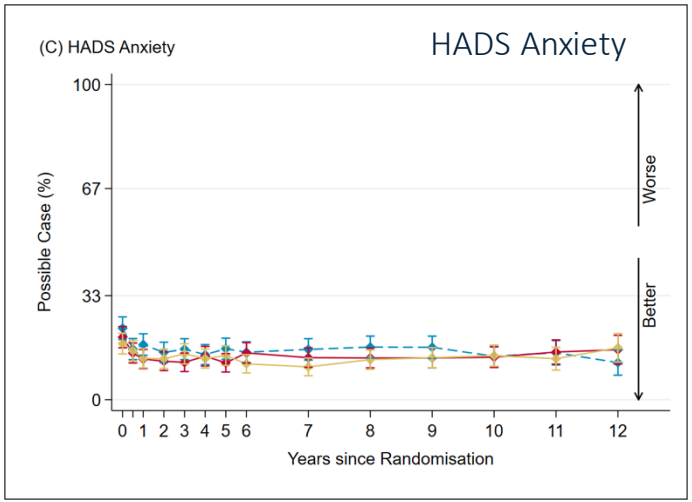
✓

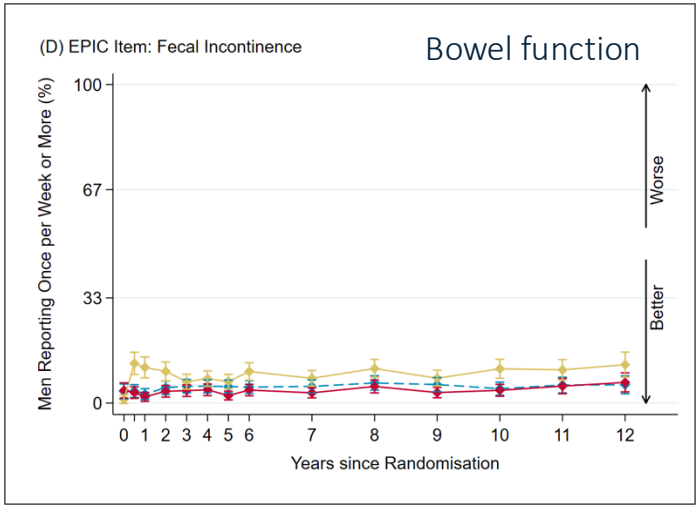
NIHR | National Institute for Health and Care Research

Patient-reported outcomes (PROMs)





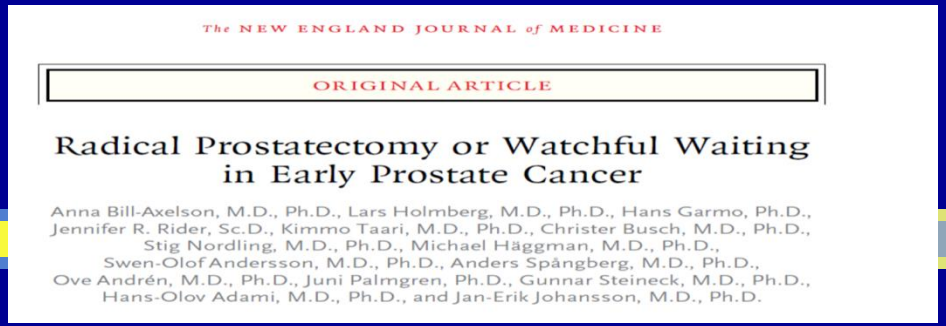




Donovan et al, NEJM Evidence 2023

Does Surgery Work ?

- NEJM – 18 year follow-up
- Best in Int Risk PC and age <65
- Sx vs WW = 40% vs 87% progression or death (excluding low risk patients)
- High Risk Patients were inadequately treated
- NNT to prevent 1 death in study overall 8



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Radical Prostatectomy or Watchful Waiting in Early Prostate Cancer

Anna Bill-Axelson, M.D., Ph.D., Lars Holmberg, M.D., Ph.D., Hans Garmo, Ph.D., Jennifer R. Rider, Sc.D., Kimmo Taari, M.D., Ph.D., Christer Busch, M.D., Ph.D., Stig Nordling, M.D., Ph.D., Michael Häggman, M.D., Ph.D., Swen-Olof Andersson, M.D., Ph.D., Anders Spångberg, M.D., Ph.D., Ove Andrén, M.D., Ph.D., Juni Palmgren, Ph.D., Gunnar Steineck, M.D., Ph.D., Hans-Olov Adami, M.D., Ph.D., and Jan-Erik Johansson, M.D., Ph.D.

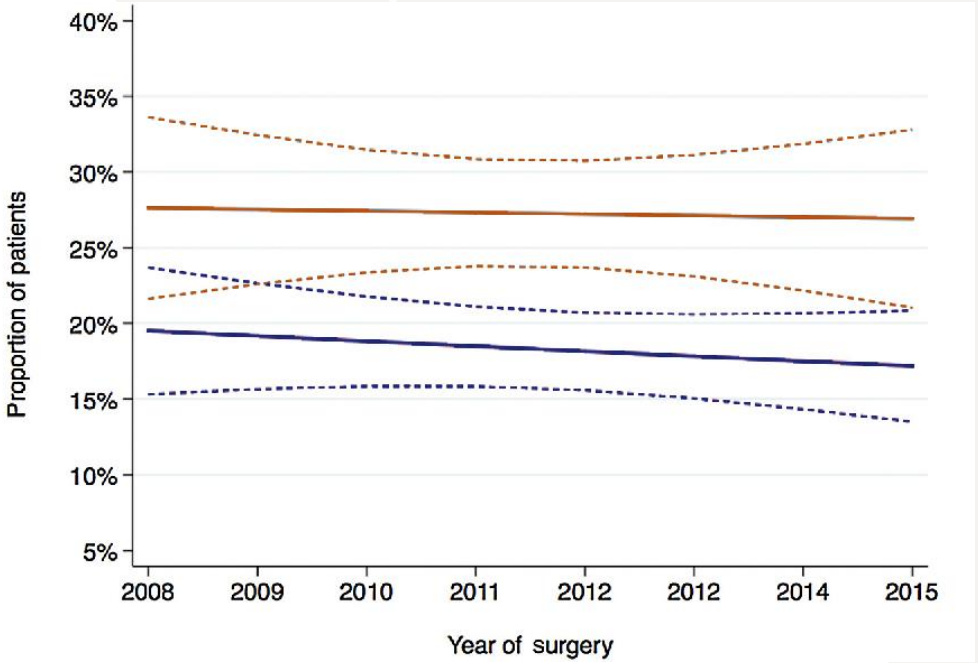
St Vincent's prostate cancer centre

Side-effects from minimally invasive prostatectomy over time- still an issue

Trends in functional outcomes in Memorial Sloan Kettering Cancer Centre over time at 12 (blue) and 24 months (orange)

Erectile Function
RECOVERY

Capogrosso et al, European Urology, 2018



RP vs RT - Quality of life

Quality of life in prostate cancer

Longitudinal assessment of quality of life after surgery, conformal brachytherapy, and intensity-modulated radiation therapy for prostate cancer

Michael J. Zelefsky [a,*], Bing Ying Poon [b], James Eastham [c], Andrew Vickers [b], Xin Pei [a], Peter T. Scardino [c]

- Prospective evaluation of quality of life state-of-the-art RP vs RT
- N = 907; 3 - 48 months follow-up

- Sign. higher incontinence with surgery
- More irritative symptoms with RT (brachy and IMRT)
- Bowel bother higher in IMRT than surgery
- Sexual function better in brachy and EBRT than surgery

RP vs RT - Potential benefits RP

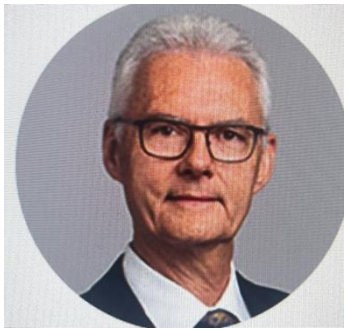
- LUTS improvement
- Salvage RT - Easier
- No radio-recurrent disease
- No 2nd malignancy
- More pathological information
- Less long-term problems

Pre Op Preparation

- Counselling – Nurse , know all options , Partner, GP
- Support – Nurse , psychologist , Partner
- Correct expectations (sexual, urinary, process, cancer, recovery)
- Sexual Preparation (Sex therapist, Understand ED definitions)
- Urinary preparation (Physio , PFE)
- Oncological Expectations (Margins , Nodes , Adjuvant therapy)

Pre Op Team and Counselling

MDT Team

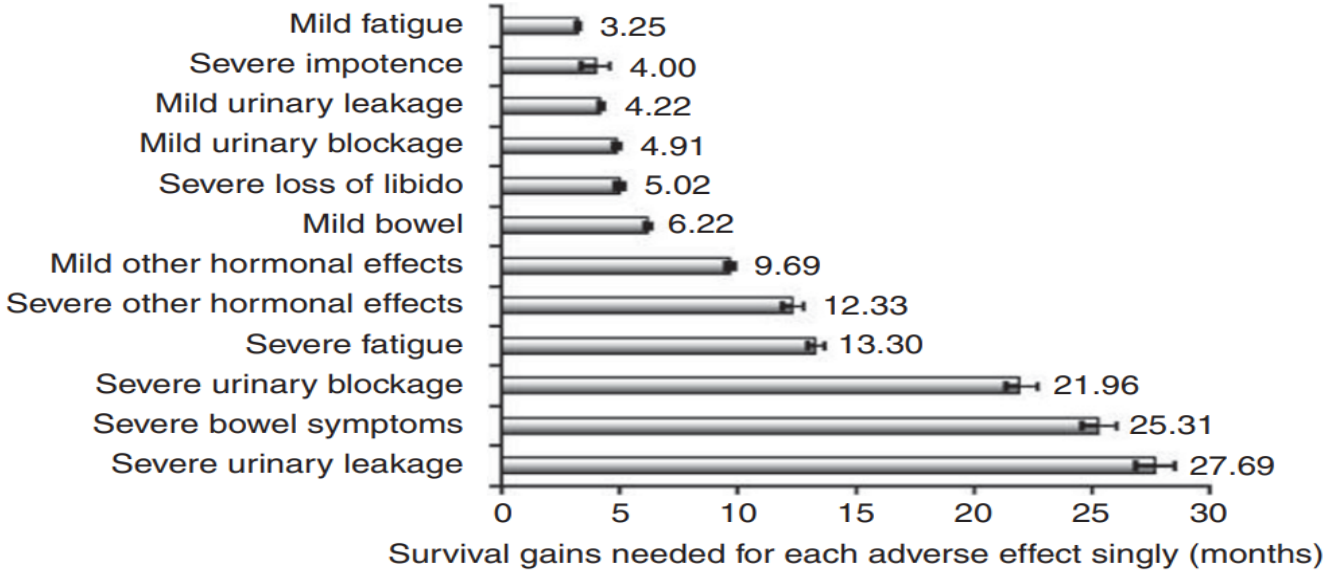


Patients are Willing To Trade off Survival

Garvan Institute of Medical Research

Survival gains needed for localised prostate cancer

MT King *et al*



British Journal of Cancer (2012) 106, 638 – 645

MT King*[,1,2], R Viney[2], DP Smith[3], I Hossain[2,4], D Street[2], E Savage[2], S Fowler[2], MP Berry[5], M Stockler[6,7,8], P Cozzi[9], P Stricker[10], J Ward[11] and BK Armstrong[8]

www.bjcancer.com

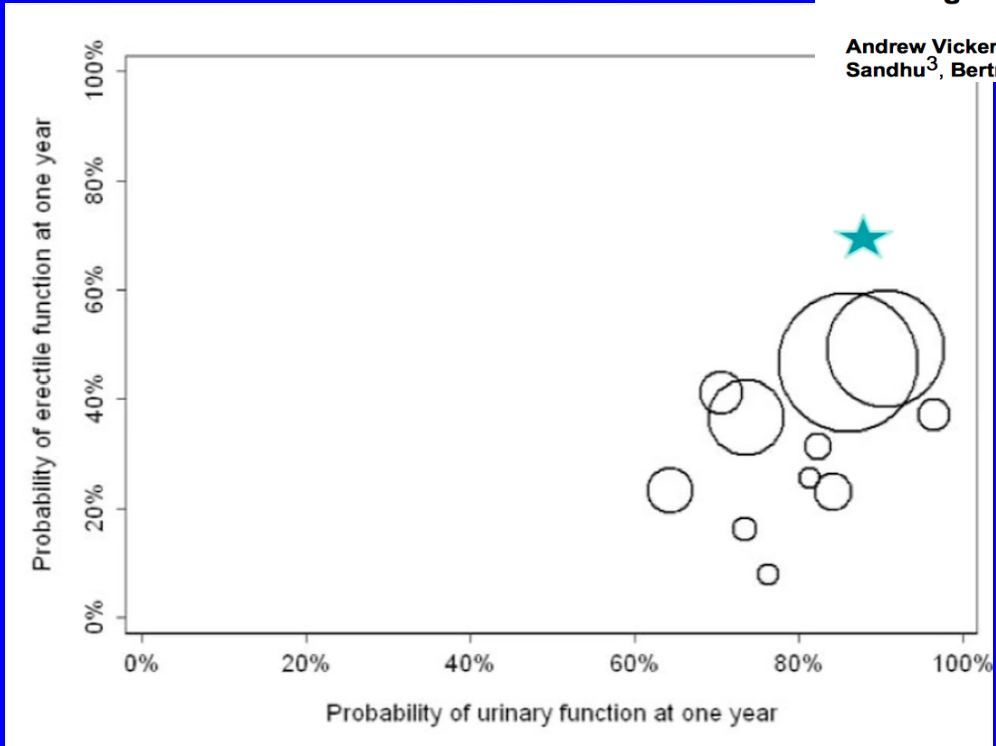
Know your Results

- Margins – pT2 & Overall
- Complication incidence
- Sexual recovery (Timing , Patient specific, Definitions)
- Urinary recovery (Timing, Patient specific , Definitions)
- Recovery (Timing)
- Aim to continue to improve

Radical prostatectomy –The Surgeon is still the key factor

Cancer Control and Functional Outcomes After Radical Prostatectomy as Markers of Surgical Quality: Analysis of Heterogeneity Between Surgeons at a Single Cancer Center

Andrew Vickers[1,*], Caroline Savage[1], Fernando Bianco[2], John Mulhall[3], Jaspreet Sandhu[3], Bertrand Guillonneau[3], Angel Cronin[4], and Peter Scardino[3]

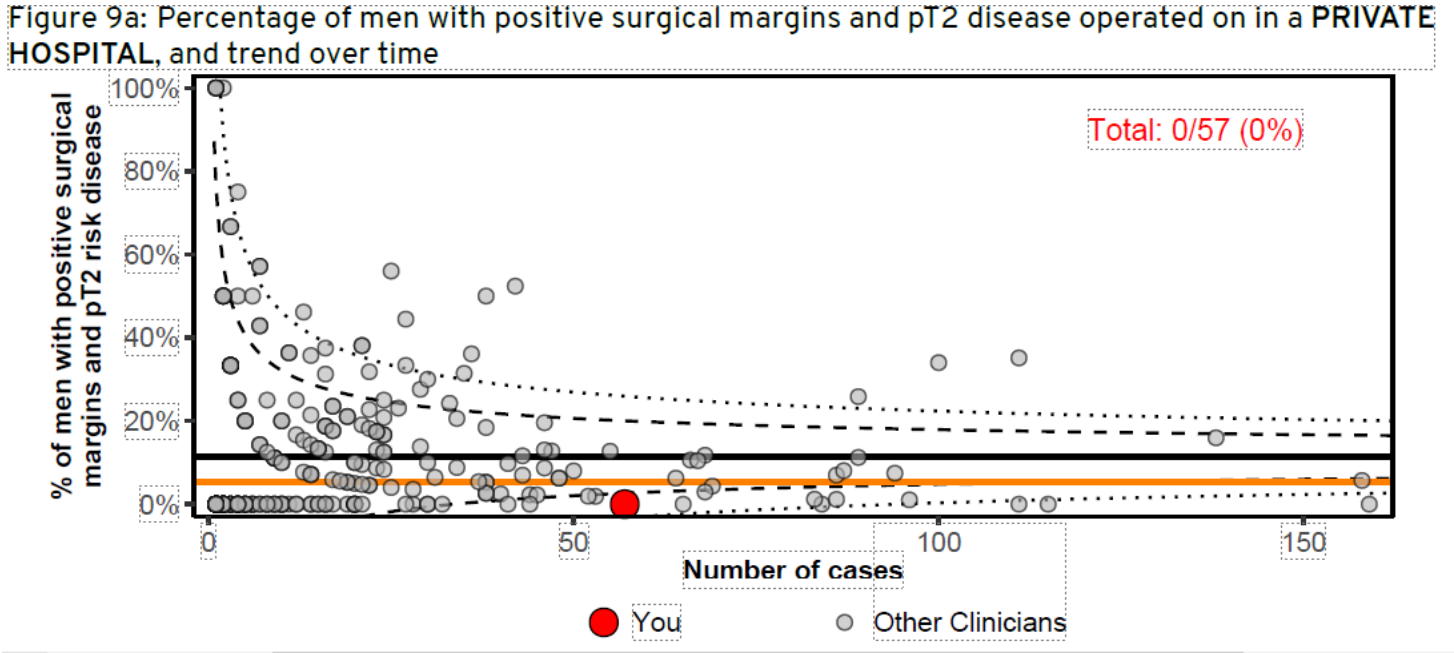


Surgeon Report Card

- pT2 PSM
- Overall PSM
- % of Gl 6 RPs
- Major Complications (3,4)
- Continence (Early and Late – Valid QOL Questionnaire)
- Potency (Early & Late – Valid QOL Questionnaire)
- Recovery

St Vincent's prostate cancer centre

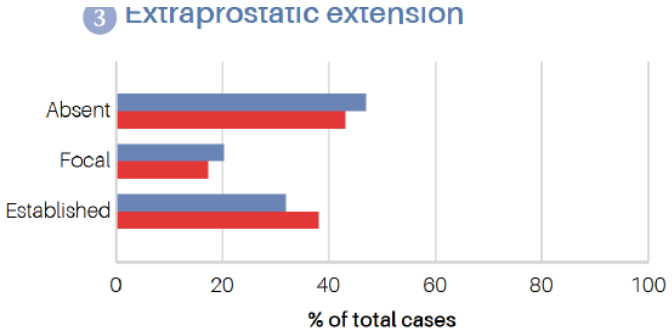
My pT2 Positive Margin Rate - Stricker

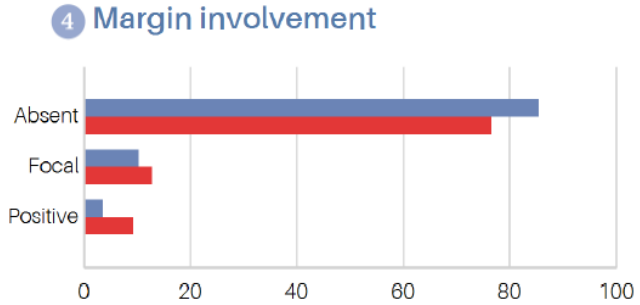


My Positive Margin Rate -Stricker

Margin involvement		
Absent	85.5%	76.6%
Focal	10.4%	12.8%
Positive	3.6%	9.4%
Other involvement		
Seminal vesicle involvement	10.4%	10.3%
Lymph node involvement	8.6%	3.0%
STAGING		
Stage 2	47.1%	42.9%
Stage 3a	42.1%	46.0%
Stage 3b	10.4%	9.9%
With margin involvement		
Stage 2	1.0%	7.8%
Stage 3a	25.8%	32.1%
Stage 3b	26.1%	42.2%

*Combined - All urologists sending to Douglass Hanly Moir Pathology





My Continence Outcomes- Stricker

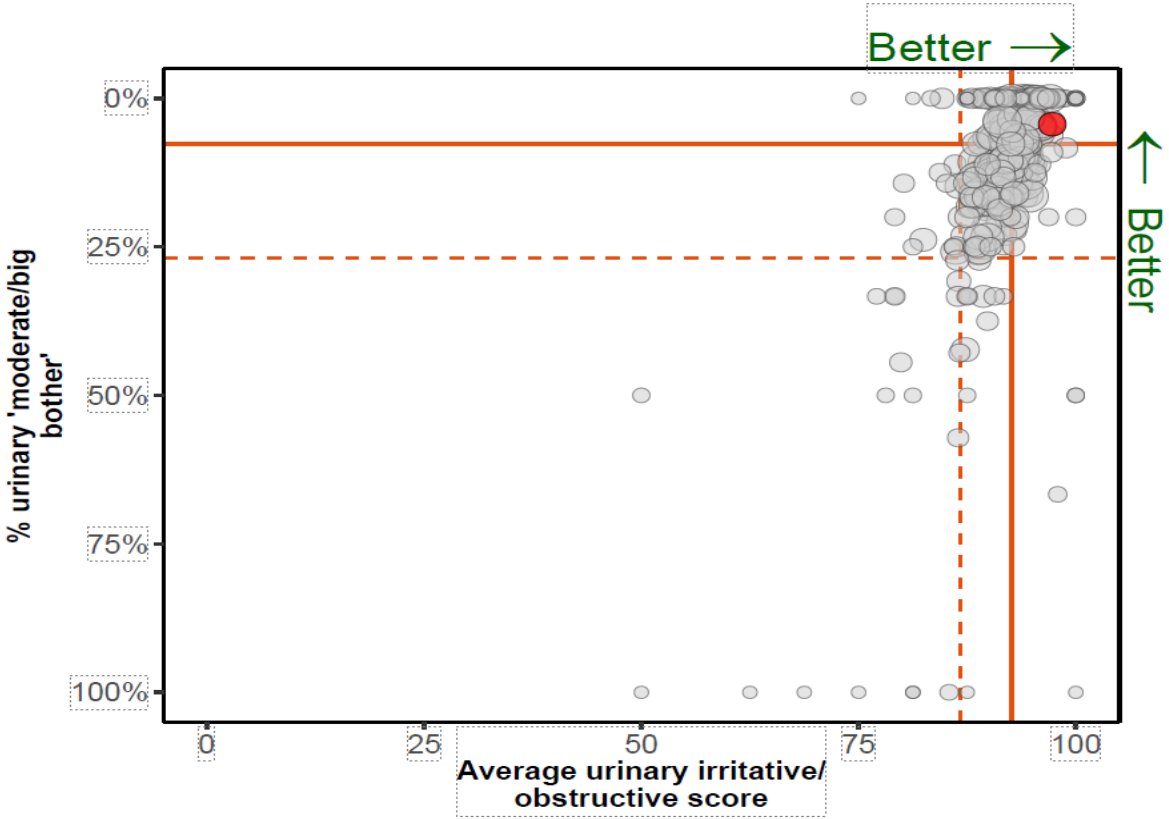
Time	0-1 Precautionary Pads	0 Pads
6 weeks	78%	33%
3 months	95%	72%
6 months	98%	92%
12 months	99%	94%

Table 2. Continence outcomes

Reference	Number of patients	Age (y)	Follow-up (mo)	Definition of continence	Technique	Continence (% at n months)			
						1	3	6	12
Joseph et al. [23]	325	60	6	No pads	No reconstruction	56	93	96	-
Zorn et al. [24]	300	59	24	No pads	No reconstruction	23	47	68	90
Rocco et al. [22]	31	66	6	No pads or 1 safety pad	Posterior reconstruction	84	92	-	-
Tewari et al. [25]	182	61	6	No pads or 1 small liner	Ant/post reconstruction	83	91	97	-
Shikanov et al. [26]	380	58	24	No leak	No reconstruction	-	57	80	92
Patel et al. [27]	1,100	58	18	No pads	Ant/post reconstruction	68 (6 wk)	85	96	97
Haglind et al. [28]	1,847	63	12	<1 pad	Not mentioned	-	-	-	79
Coughlin et al. [29]	157	35–70	24	No pads	Not mentioned	-	-	84	90
Patel[a]	100	58	5	No pads	MAD/LPFP	78 (6 wk)	88	93	-

My Continence Outcomes on Validated QOL-Stricker

Figure 11b: Multi-dimensional representation of self-reported urinary function (irritation and/or obstruction) and urinary bother 12 months after radical prostatectomy

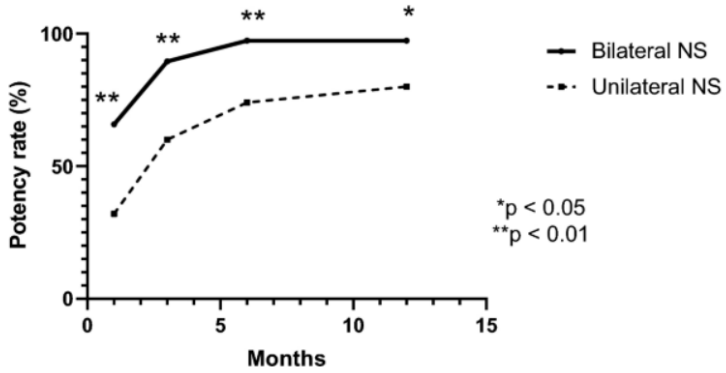


Potency after robotic radical prostatectomy

- These are the graphs you see in studies reporting functional outcomes after surgery
- But what does potency actually mean?
  - For example, this study does not use a validated scoring system and instead, asks the patient whether sexual intercourse or masturbation was possible during a follow up visit.

b) Functional outcome: erection

Number of potent cases (%)	1 Mo	3 Mo	6 Mo	12 Mo	Total number
Bilateral NS	25 (65.8)	34 (89.5)	37 (97.4)	37 (97.4)	38
Unilateral NS	16 (32.0)	30 (60.0)	37 (74.0)	40 (80.0)	50
Total	41 (46.6)	64 (72.7)	74 (84.1)	77 (87.5)	88



Maruo, M., Goto, Y., Miyazaki, K. *et al.* Novel nerve-sparing robot-assisted radical prostatectomy with endopelvic fascia preservation and long-term outcomes for a single surgeon. *Sci Rep* **14**, 926 (2024). https://doi.org/10.1038/s41598-024-51598-3

Methods of Assessing Potency

- Various tools exist to quantify sexual function
  - Sexual Health Inventory for Men (SHIM)
  - International Index of Erectile Function (IIEF)
  - Expanded Prostate Cancer Index Composite (EPIC)
- However, post-operative sexual function does not always correlate with sexual bother[1]
  - Sexual bother being whether the patient is happy with their current sexual function
  - Must consider the patient's pre-operative level of sexual bother and sexual function

1. Steinsvik, E. A. S., Axcrona, K., Dahl, A. A., Eri, L. M., Stensvold, A., & Fosså, S. D. (2011). *Can sexual bother after radical prostatectomy be predicted preoperatively? Findings from a prospective national study of the relation between sexual function, activity and bother. BJU International, 109(9), 1366–1374.* doi:10.1111/j.1464-410x.2011.10598.x

Commonly used definitions of ‘Potency’

SHIM score
>21 or >17

22-25	No ED
17-21	Mild ED
12-16	Mild-to-moderate ED
8-11	Moderate ED
5-7	Severe ED

>3 in these questions of the IIEF

☐ Q3	**When you attempted intercourse, how often were you able to penetrate (enter) your partner?**	0 Did not attempt intercourse 1 Almost never or never 2 A few times (less than half the time) 3 Sometimes (about half the time) 4 Most times (more than half the time) 5 Almost always or always
☐ Q4	**During sexual intercourse, how often were you able to maintain your erection after you had penetrated (entered) your partner?**	0 Did not attempt intercourse 1 Almost never or never 2 A few times (less than half the time) 3 Sometimes (about half the time) 4 Most times (more than half the time) 5 Almost always or always

>3 in these questions of the EPIC

25. Overall, how big a problem has your sexual function or lack of sexual function been for you **during the last 4 weeks**?

No problem	1
Very small problem	2
Small problem	3
Moderate problem	4
Big problem	5

- Out of 32 studies assessed in a 2012 systematic review[1]:
  - 4 used SHIM >21
  - 1 used SHIM >15, 1 used >16, 1 used >17, 1 used >18
  - 5 used erections sufficient for intercourse identified by informal interview
  - 1 used presence of erections
  - 21 studies used the IIEF or EPIC scores with varying score cutoffs

1. Ficarra, V. et al. (2012) ‘Systematic Review and meta-analysis of studies reporting potency rates after robot-assisted radical prostatectomy’, European Urology, 62(3), pp. 418–430. doi:10.1016/j.eururo.2012.05.046.

My Potency Outcomes - Stricker

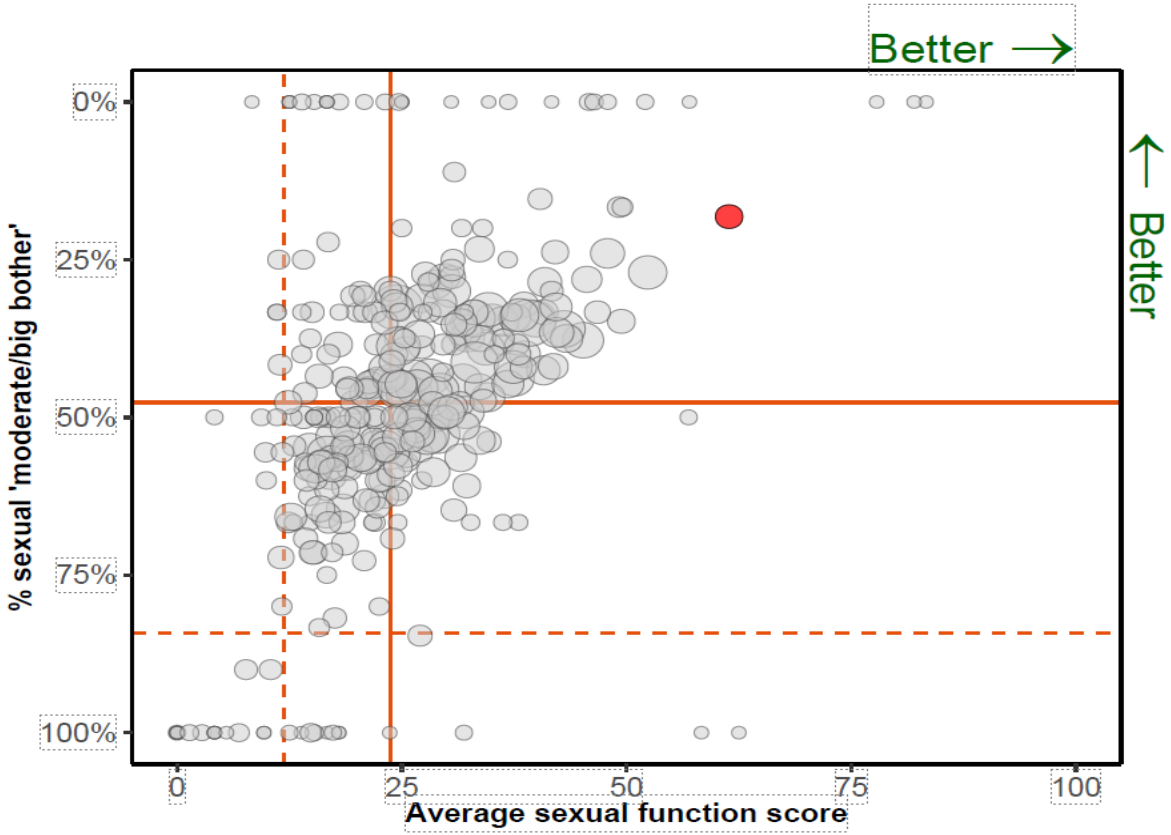
AGE	Recovery	Time
40-50	92%	12-18 months
50-60	85%	12-18 months
60-70	72%	12-18 months

Table 3. Potency outcomes of representative studies

Reference	Number of patients	Age (y)	Follow-up (mo)	Overall potency (% at n months)			
				3	6	12	18
Menon et al. [50]	1,142	60	-	-	-	70	100
Zorn et al. [24]	300	59	24	47	58	74	77
Rocco et al. [13]	120	63	12	31	43	61	-
Finley et al. [51]	62	57	> 18	32	57	77	90
Shikanov et al. [26]	380	58	24	57	63	82	-
Sooriakumaran et al. [15]	1,792	63	24	58	-	73	-
Coughlin et al. [29]	157	35–70	24	-	41	53	-
Patel et al. [27]	404	58	18	69	82	92	97

Sexual Outcomes on Validated QOL- Stricker

Figure 13: Multi-dimensional representation of self-reported sexual function and sexual bother 12 months after radical prostatectomy



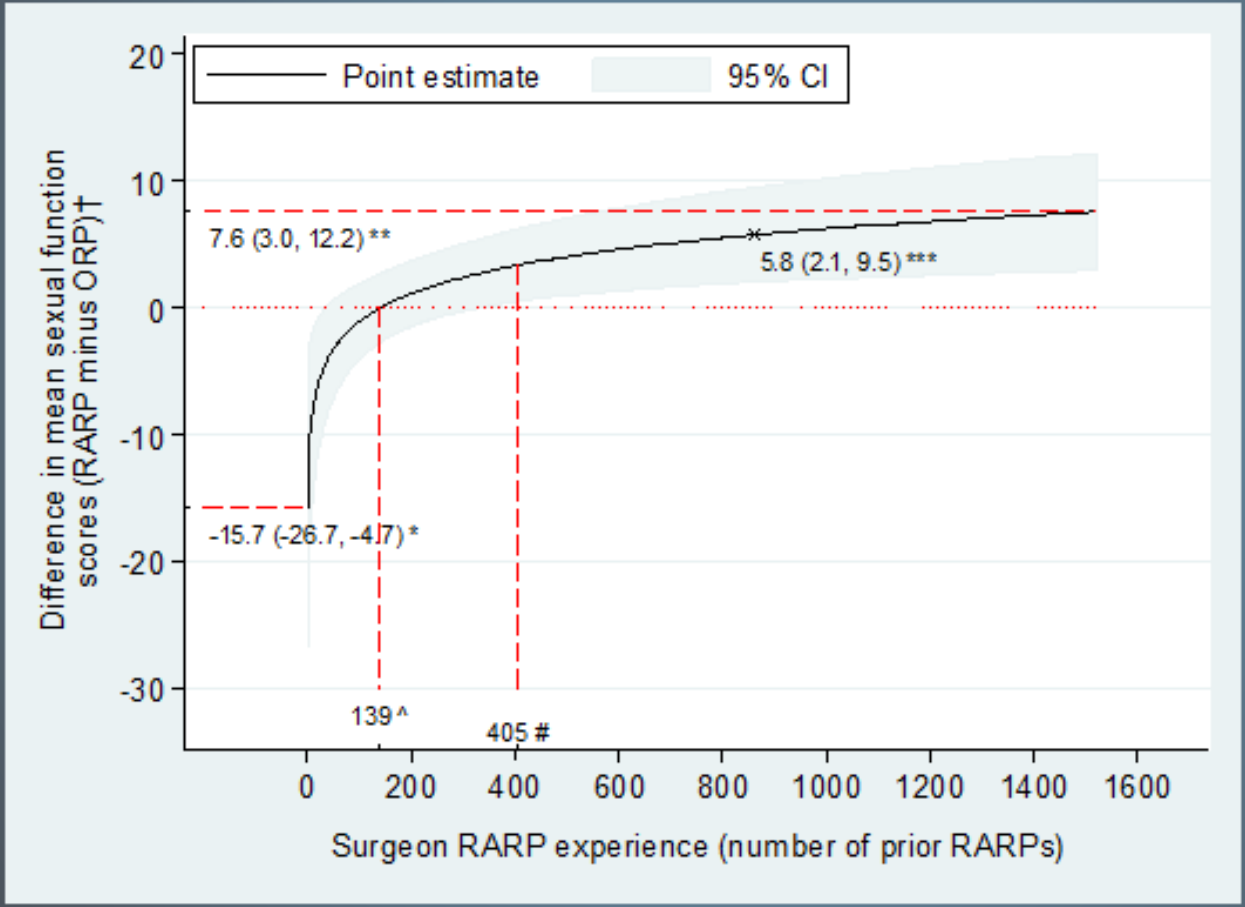
Is there a learning Curve and can it be shortened ?

- It takes about 500 cases to achieve satisfactory results but learning curve continues till over 1000

Doumerc , Stricker et al BJUI 2010
Thompson, Stricker et al Eur Urol 2018

- Fellowship Training shortens learning curve
- High Volume Units have better outcomes

Learning Curve – Sexual Function



The Procedure

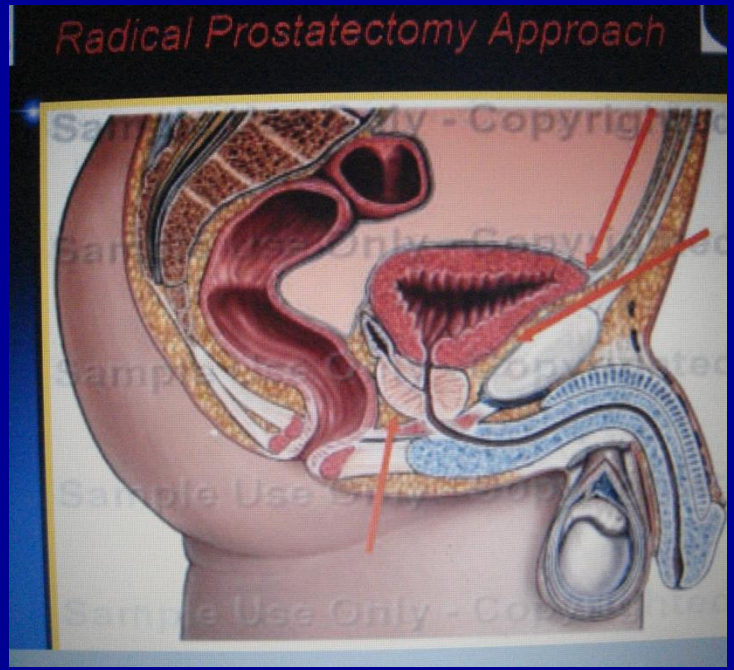
- Planning
- The Team (Preop, Ward , Theatre)
- Continence (Understanding , Technique , Individualise)
- Potency (Understanding , Technique , Individualise)
- Minimise Complications (Haemostasis, Anastamosis, Assistant)
- Oncological (Margins , ? Nodes)
- Recovery (Gentle and Meticulous)
- Potential New Developments (Retzius,Precision,Single Port –CARE)

Operating Team

The Aim Of Surgery

- The Pentafecta (Cure,Continence,Potency, No complications , Rapid recovery)

- Experience Counts "Surgical outcomes more dependent on skill and experience of surgeon/team than whether open or laparoscopic/robotic"

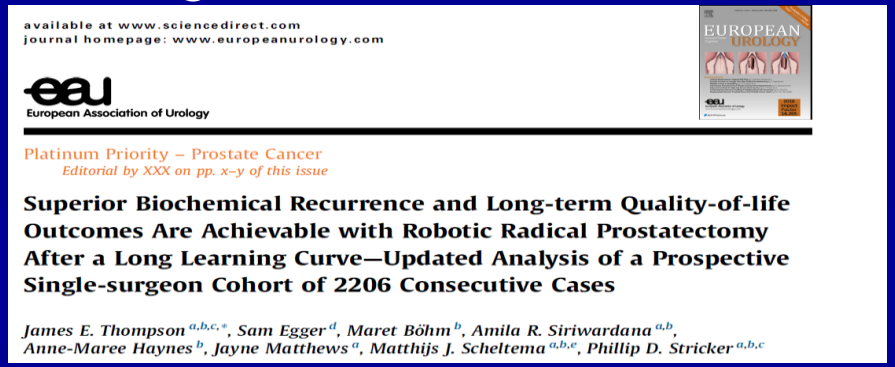


St Vincent's prostate cancer centre

Robot Prostatectomy- Is it really better

My experience after 2800 Robot RPs 2006-2024

- Quicker recovery
- Less Blood loss & Transfusion
- Less complications
- Better Cancer control
- Earlier & more complete return of potency and continence
- Some cases easier – Obese , Underslung , Mesh
- It's easier to teach
- Greater Future Potential
- Now – Gold Standard



available at www.sciencedirect.com
journal homepage: www.europeanurology.com

European Association of Urology

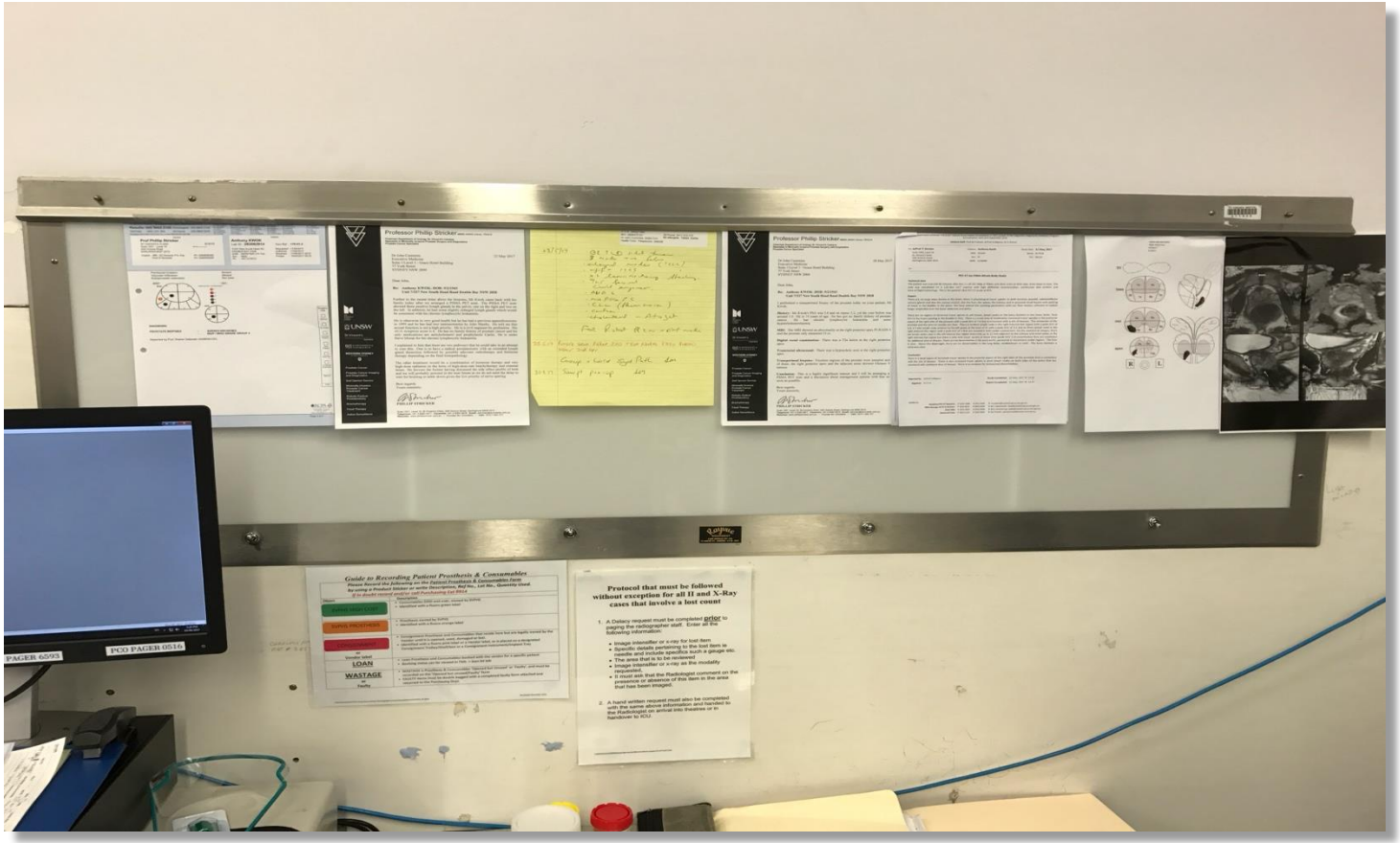
Platinum Priority – Prostate Cancer

Editorial by XXX on pp. x–y of this issue

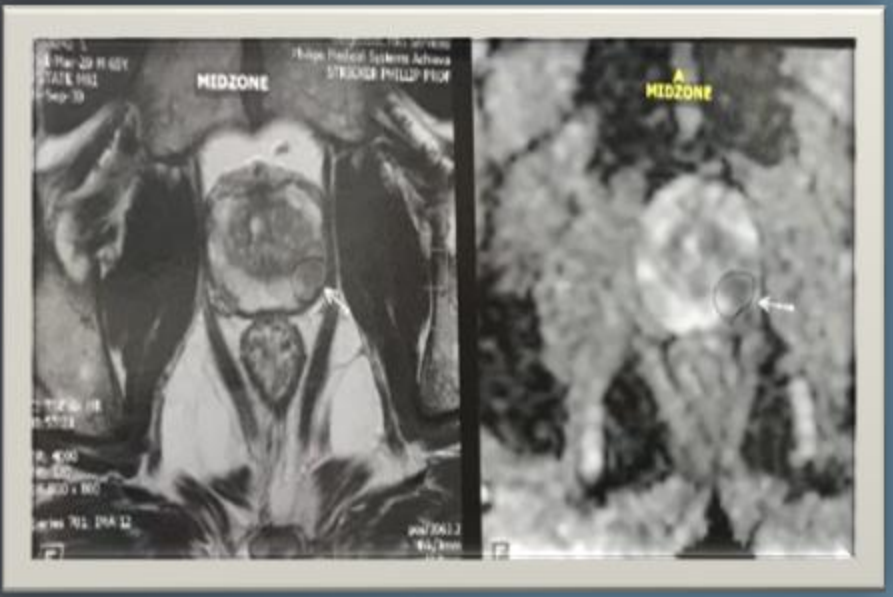
Superior Biochemical Recurrence and Long-term Quality-of-life Outcomes Are Achievable with Robotic Radical Prostatectomy After a Long Learning Curve—Updated Analysis of a Prospective Single-surgeon Cohort of 2206 Consecutive Cases

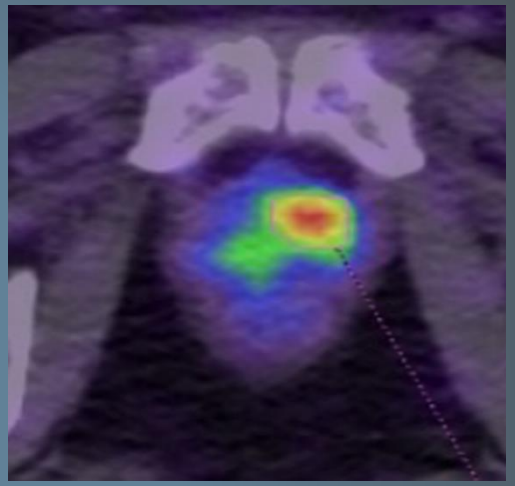
James E. Thompson [a,b,c,], Sam Egger [d], Maret Böhm [b], Amila R. Siriwardana [a,b], Anne-Maree Haynes [b], Jayne Matthews [a], Matthijs J. Scheltema [a,b,e], Phillip D. Stricker [a,b,c]*

Preparation and Planning are Critical

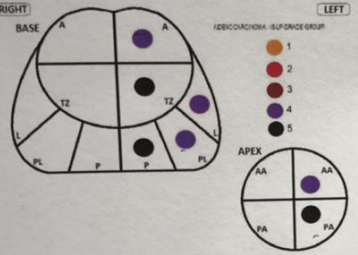


MRI , PSMA and Biopsy help planning





Number of cores involved / Total: 10 of approximately 26
Perineural invasion: Present
Vascular infiltration: Absent
Extraprostatic extension: Suspicious



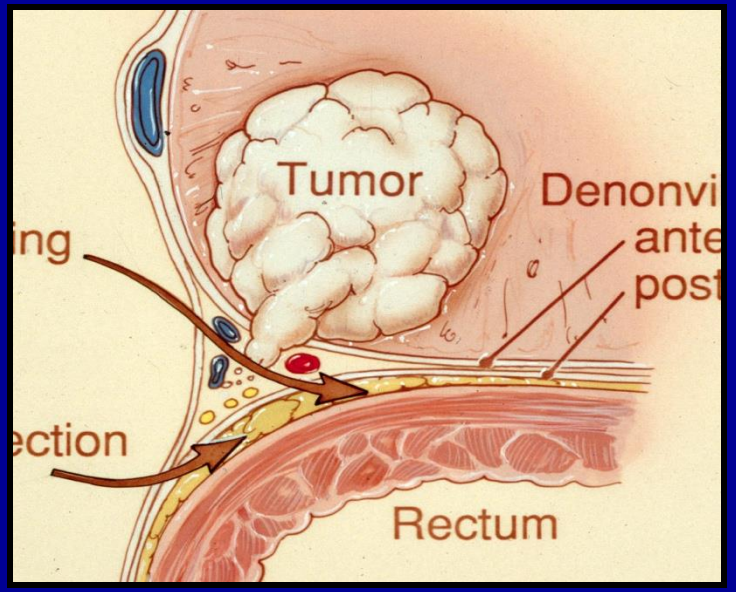
DIAGNOSIS:

PROSTATE BIOPSIES - ADENOCARCINOMA
- ISUP / WHO GRADE GROUP 5

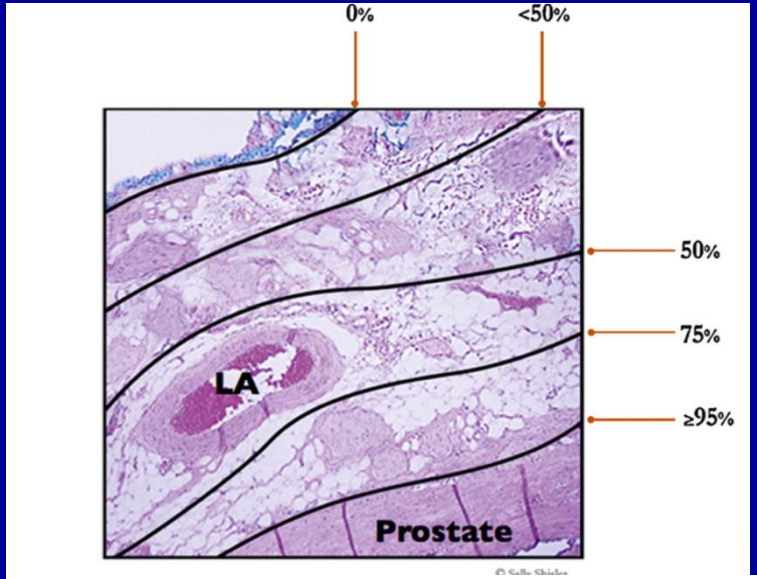
Reported by Prof. Warick Delprado (0298555155)

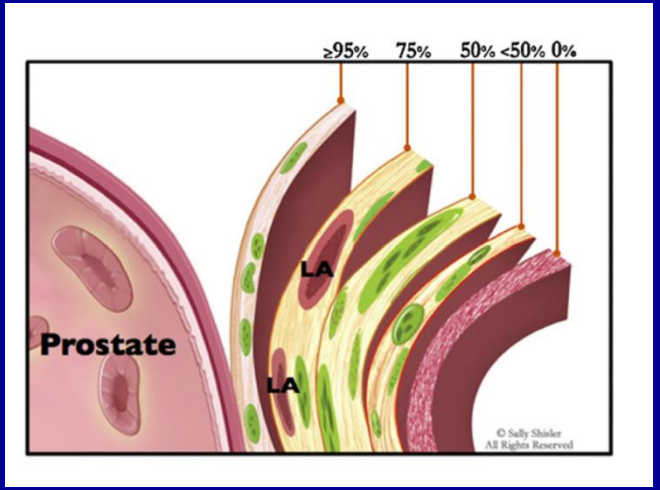
Can you spare nerves and still remove all the cancer?

- The Impact of Nerve Sparing on Incidence and Location of Positive Surgical Margins in Radical Prostatectomy
  Moore, Stricker et al BJUI 2011



Nerve Preservation – Good but not perfect

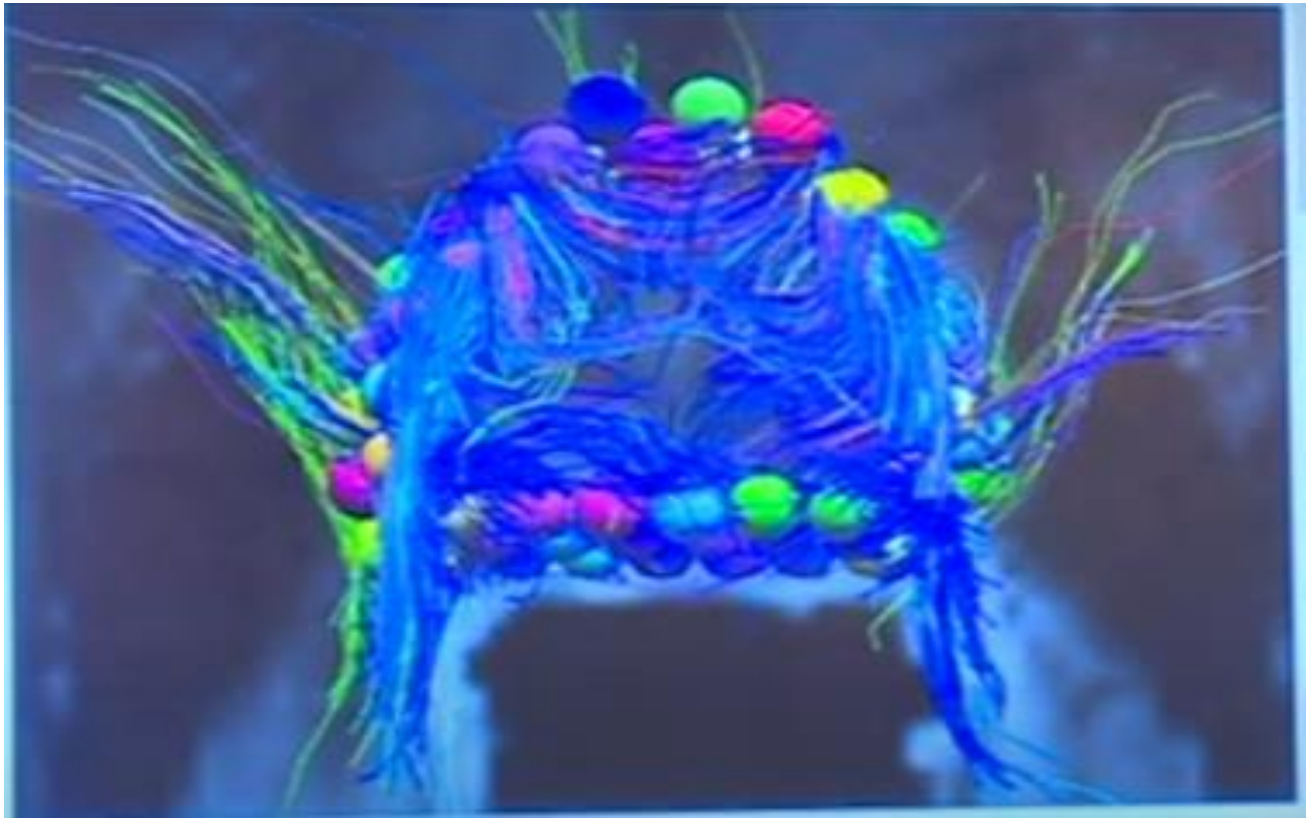




Anatomic Grading of Nerve Sparing During Robot-Assisted Radical Prostatectomy

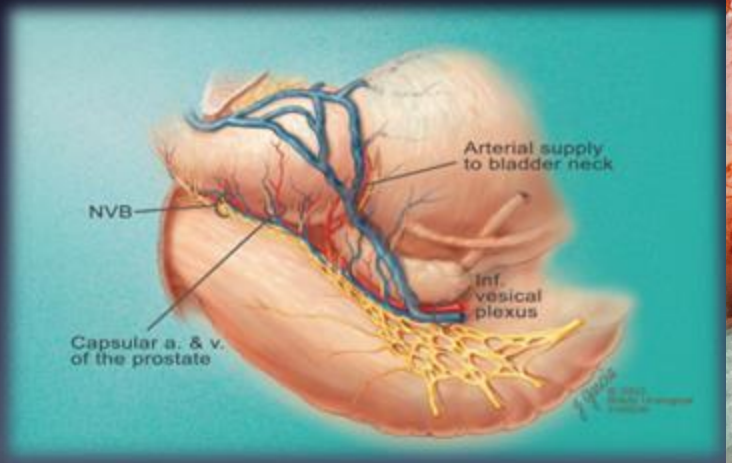
Oscar Schatloff[a], Sanket Chauhan[a,b], Ananthakrishnan Sivaraman[a], Darian Kameh[a], Kenneth J. Palmer[a,b], Vipul R. Patel[a,b,]*

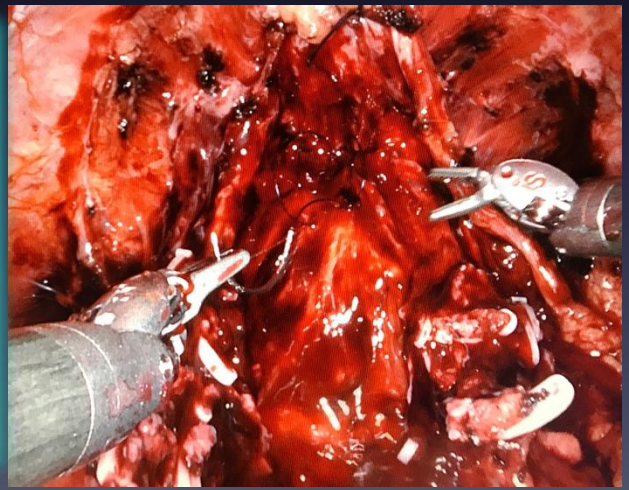
Understanding Potency- MR Tractography



Preserving Potency

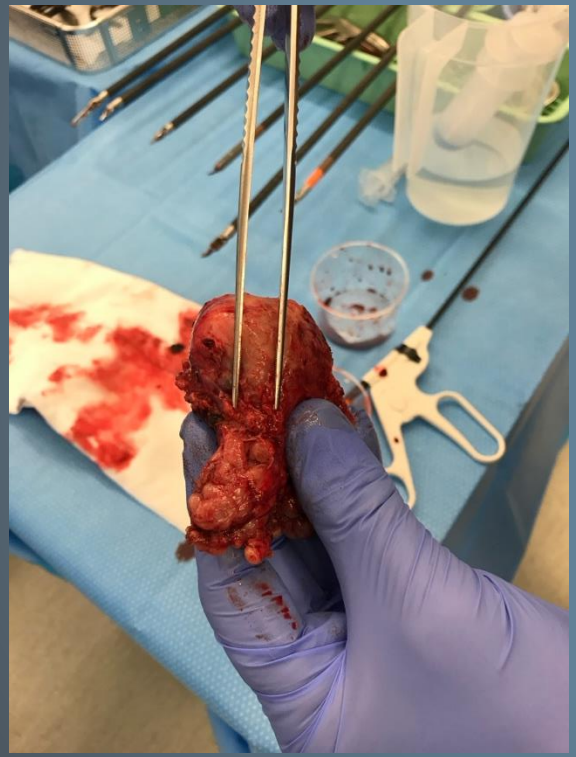
- ✓ NVB preservation
- ✓ Meticulous nerve dissection at apex
- ✓ Preserving accessory pudendal



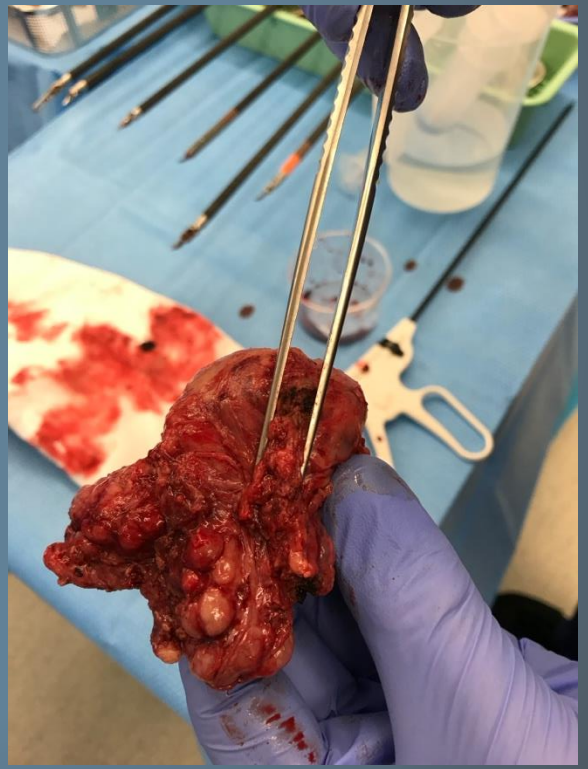


Nerve Preservation

IntraFascial

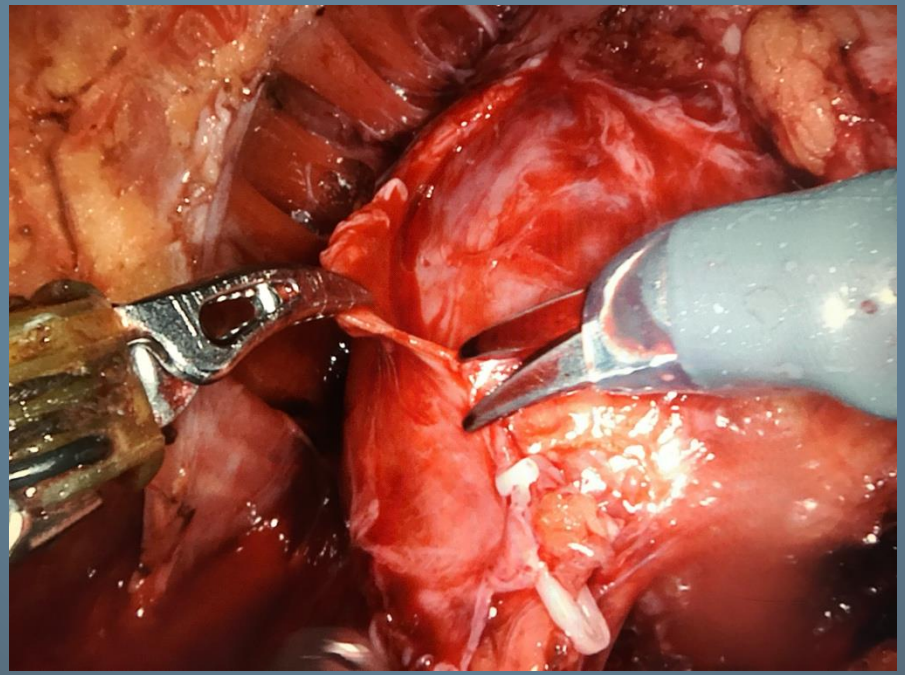


Extrafascial



NVB Preservation

- Selective High Fascial Release



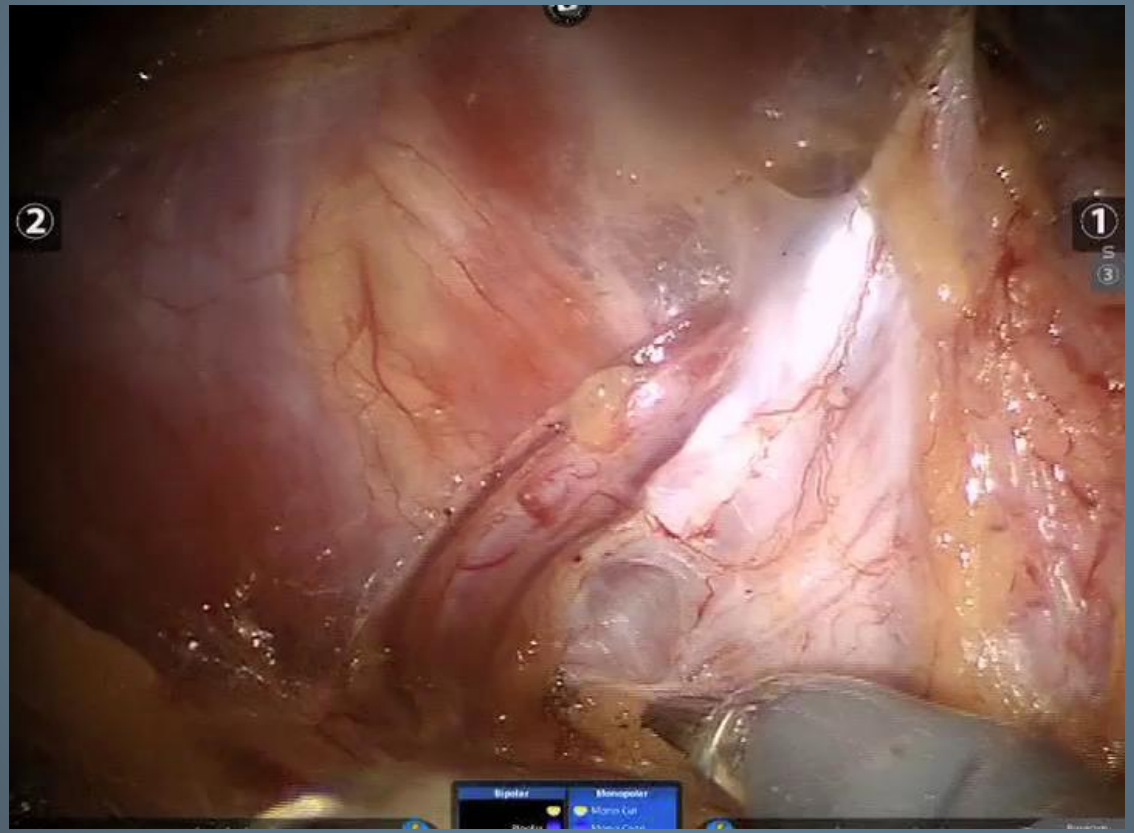
Vascular Supply

- Preserve arterial supply.
- Accessory Pudendal Artery. (In 30% op pts. 75% Apical and 25% Lateral).
- Internal Iliac branches during ELND.

The Incidence and Anatomy of Accessory Pudendal Arteries as Depicted on Multidetector-Row CT Angiography: Clinical Implications of Preoperative Evaluation for Laparoscopic and Robot-Assisted Radical Prostatectomy

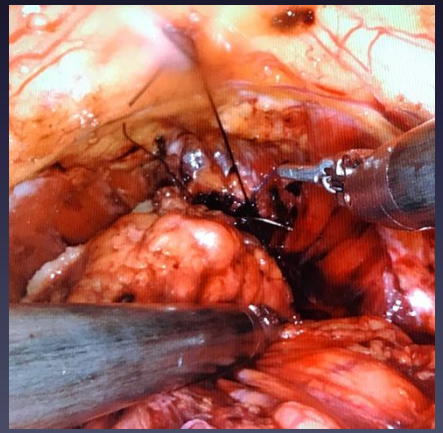
Beom Jin Park, MD,[1] Deuk Jae Sung, MD,[1] Min Ju Kim, MD,[1] Sung Bum Cho, MD,[1] Yun Hwan Kim, MD,[1] Kyoo Byung Chung, MD,[1] Seok Ho Kang, MD,[2] and Jun Cheon, MD[2]

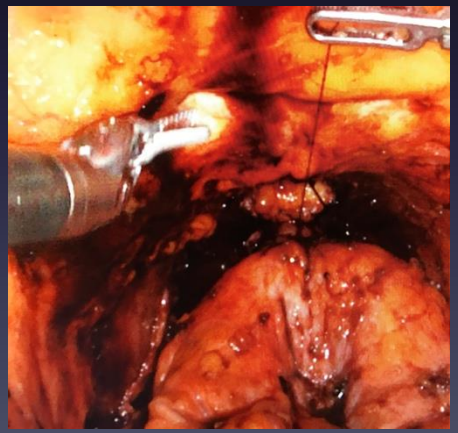
Vascular Supply



Preserving Continence

- ✓ Urethra dissection – Avoid denervation , Very gentle.
- ✓ Urethral suspension
- ✓ Bladder plication





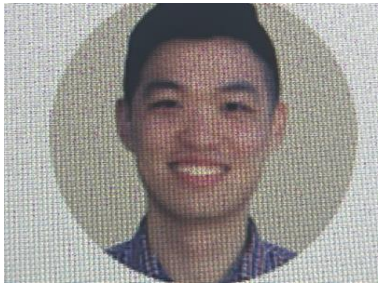
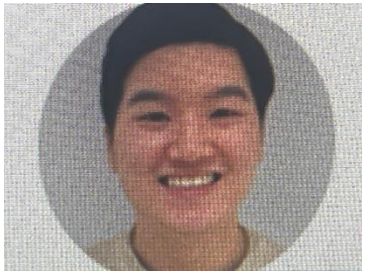
Post Op Support

- The Ward
- Nurse
- GP
- Psychologist
- Physiotherapist –PFE
- Sexual Rehab(PDE5 , VCD , Sex therapist)
- Outcome assessment (Validated QOL)
- Oncological (Followup, Adjuvant Rx, PSA Recurrence)

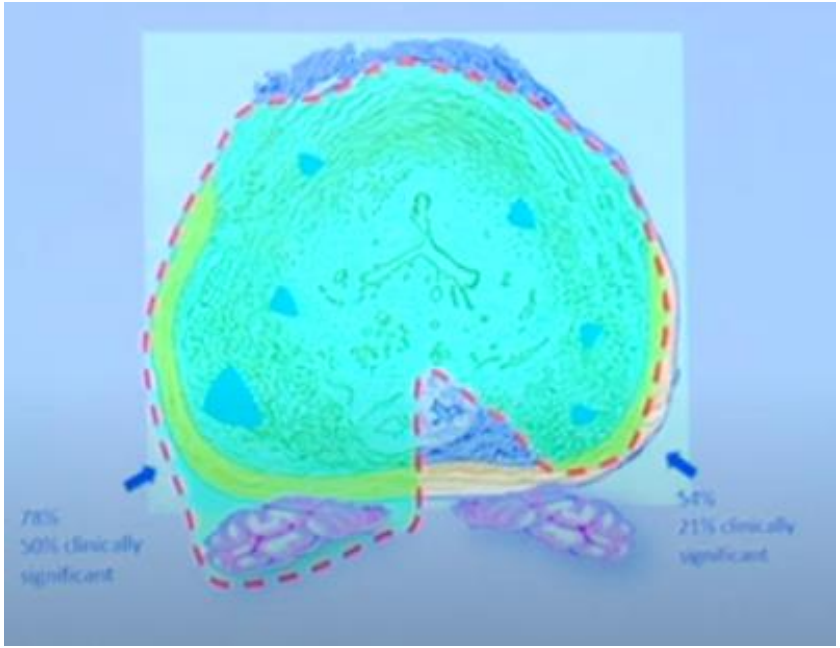
Keep Checking Results

- Margin Rate
- Validated Outcomes (Sexual, Urinary, General, level &bother, Regret)
- Cancer Institute NSW
- My Research Team - Garvan



Precision Prostatectomy



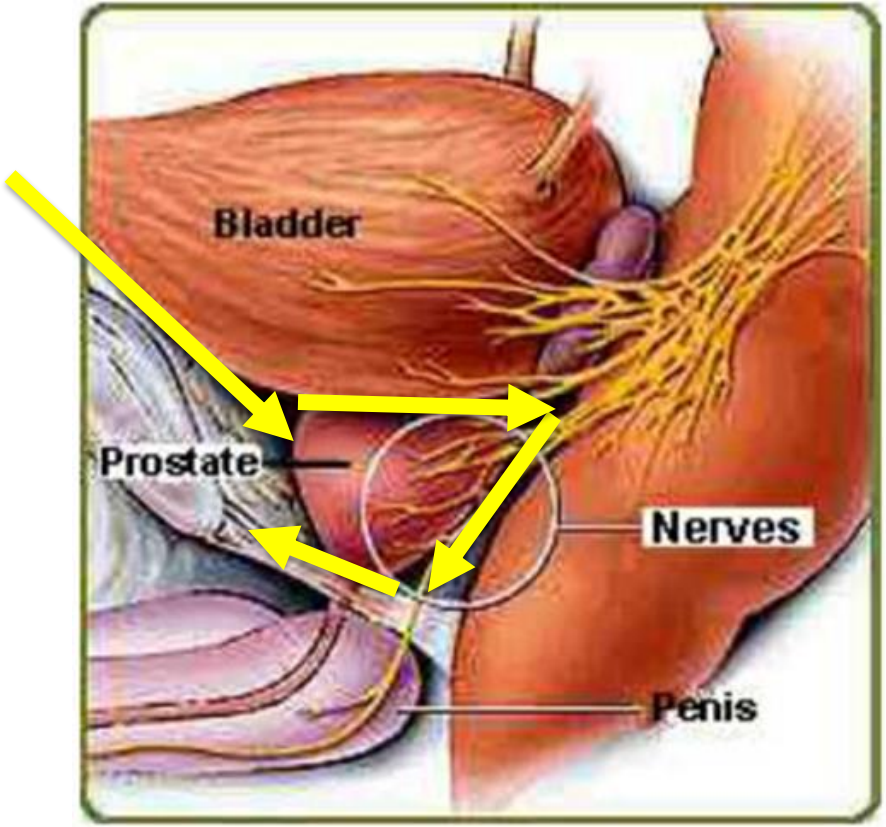
Surgery in Motion

Description of Surgical Technique and Oncologic and Functional Outcomes of the Precision Prostatectomy Procedure (IDEAL Stage 1–2b Study)

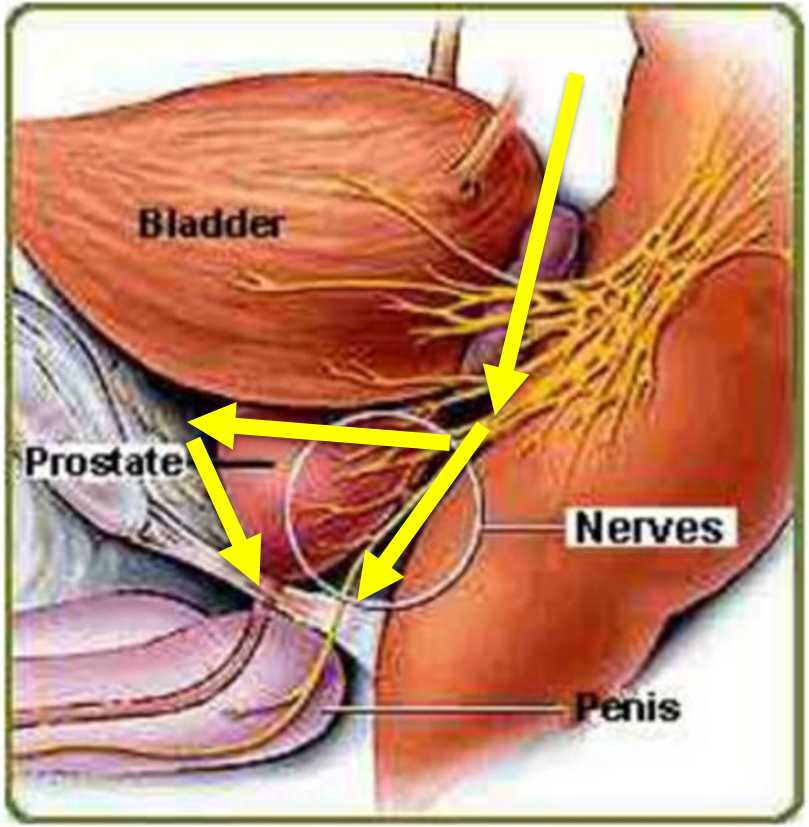
Akshay Sood [a,b,y,*], Wooju Jeong [a,y], Isaac Palma-Zamora [a], Firas Abdollah [a,b], Mohit Butaney [a], Nicholas Corsi [a], Hallie Wurst [a], Sohrab Arora [a], Naveen Kachroo [a], Oudai Hassan [c], Nilesh Gupta [c], Michael A. Gorin [d,e], Mani Menon [a,b,f,*]

[a] Vattikuti Urology Institute, Henry Ford Hospital, Detroit, MI, USA; [b] VCORE Vattikuti Urology Institute Center for Outcomes Research, Analytics and Evaluation, Henry Ford Hospital, Detroit, MI, USA; [c] Department of Pathology, Henry Ford Hospital, Detroit, MI, USA; [d] Urology Associates and UPMC Western Maryland, Cumberland, MD, USA; [e] Department of Urology, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA; [f] Department of Urology, Icahn School of Medicine at Mount Sinai, New York, NY, USA

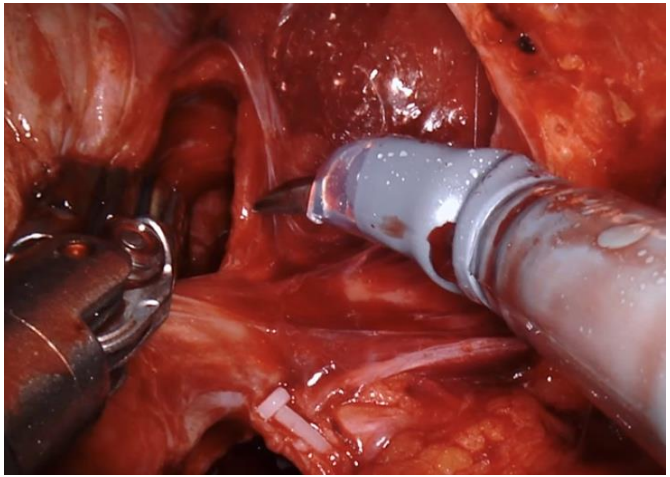
Prostatectomy– Standard Approach

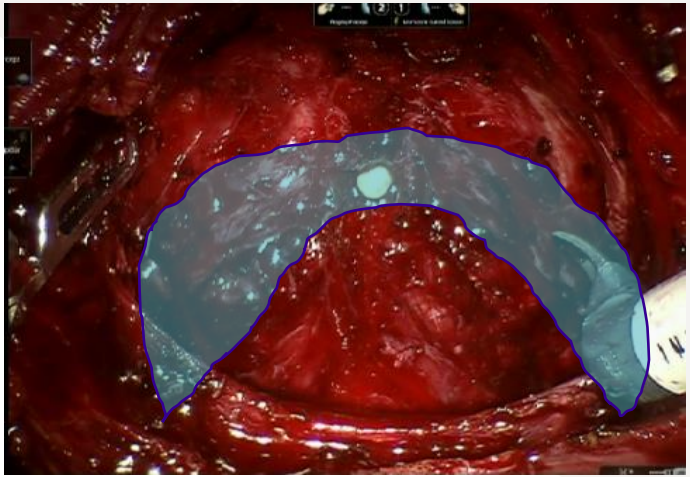


Retzius Sparing- Posterior Approach



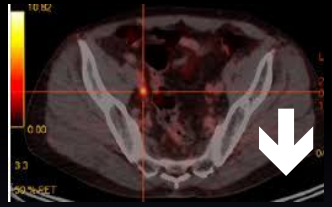
Retzius Sparing

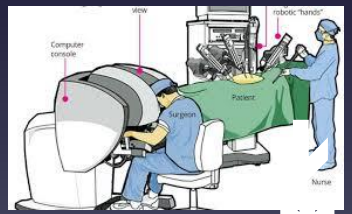




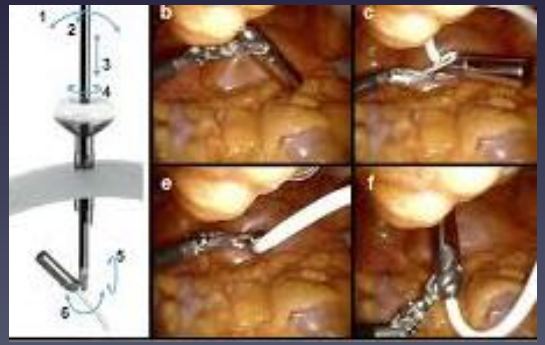
Earlier Continence But increases Positive Margins

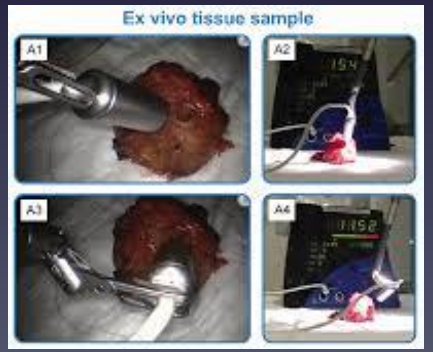
Intraop Tracer Guidance





1. Man diagnosed with PCa, 'high risk' of node involvement
2. PSMA scan is done which may show a 'hot spot'
3. Injection of PSMA – Technetium given just before surgery
4. Robotic removal of prostate
5. Lymph node removal guided by Radio-sensor probe





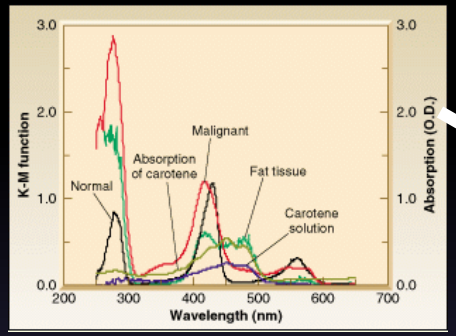
Single Port Surgery

Young Surgeons – Better Training

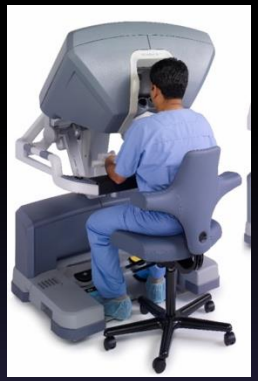
Improved Teaching

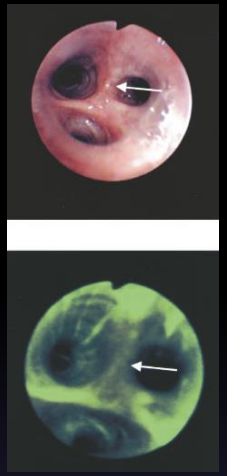
- better visualisation
- Simulation
- Supervision
- Video-based learning

FUTURE – IMAGE FUSION



Spectroscopy

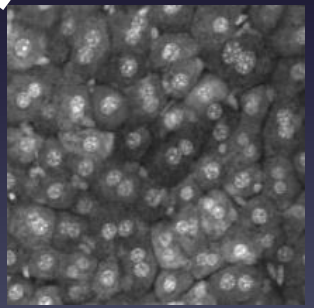




Autofluorescence ("NTF")

Dye fluorescence (ICG)

Ultrasound



Confocal Microscopy

Conclusions & Lessons Learnt over 30 years

- Robot is better
- Never stop learning
- Preparation and Rehab are critical
- Need a great team (Nurse , theatre, assistant, ward , ancillary)
- Need to know your true results
- Choose the Right Rx for the Right Pt at the Right Time to avoid regret
- Tailor the operation to the cancer & patient
- Be a prostate cancer specialist (embrace all treatments for PC)
- Be part of a PC team (Med onc , RT onc , Radiologist , Nuclear Med , Nurse , Researchers , Physio, Sexual , Psychol)

ST VINCENT'S HOSPITAL
SYDNEY

Discussion