

# Eye Care Update – Part 1

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## Financial Disclosure

Dr. Ron Melton and Dr. Randall Thomas are consultants to, on the speakers bureau of, on the advisory committee of, or involved in research for the following companies: ICARE, B+L

### “Remotely” Performed Eye Exams

- Now you can allegedly “perform remote comprehensive eye examinations during day, evenings, or weekends from your home, office or other location of your choice.”
- Such examinations are being “performed remotely by licensed optometrists.”
- “Generate Prescriptions for Eyeglasses and Contact Lenses Remotely.”
- Examine: [www.digitaloptometrics.com](http://www.digitaloptometrics.com)
- Also see [www.for2020now.com](http://www.for2020now.com)!
- Be aware that technology is poised to radically change how eye care is delivered.

### Virtue of Non-Office Hours IOP Measurements

- “Two-thirds of patients experienced peak IOP outside of regular clinic hours, with peak IOP most frequently occurring at night.”
- “We recommend obtaining multiple IOP pressure measurements outside of office hours.”
- The Icare HOME device allows for self-measurement of IOP and your contact lens technician can easily teach most patients how to perform this technique.

*Survey Ophthalmol, March/April 2020*

### Remote Patient Monitoring

- A new and engaging way of involving patients with their chronic disease monitoring
- Via the ICARE HOME tonometer, select patients can help monitor their glaucoma in between their scheduled office visits
- Since January 2019, these types of “remote patient monitoring” are insurance reimbursable.
- Such remote patient monitoring is yet another vehicle by which artificial intelligence will influence patient care.
- For more details, visit [www.icare-usa.com](http://www.icare-usa.com)

### The Future of Optometry in America

“The challenge for the entire profession of eye care, however, is how to efficiently manage the onslaught of increased demand for medical and surgical eye care. Ophthalmology must be prepared to provide for the increasing demand for surgical procedures and therapeutic intravitreal injections, while optometry must be prepared to manage an ever-increasing demand for office-based medical eye care services. Possible disruptions to the current delivery model might include an increased oversight role for ophthalmology, with increased use of physician assistants, nurse practitioners, and ophthalmic medical technicians.”

*Edlow RC. Modern Optometry, March, 2019.*

## Medical (Optometric) Eye Conditions

- Assessing hydroxychloroquine (Plaquenil) retinotoxicity risk
- Diabetic microvascular retinopathy
- The glaucomas
- Acute symptomatic posterior vitreous detachments
- Acute red eyes: allergic, bacterial, viral, chlamydial
- Injuries and abrasions
- Blepharitis
- Meibomian gland dysfunction and dry eye disease
- Zoster ophthalmicus
- Eye pain: trichiasis, ectropion, entropion, lagophthalmos
- Bell's palsy
- Corneal dystrophies
- Optic neuritis
- Epiphora
- Giant cell (temporal) arteritis
- Recurrent corneal erosion

- Contact blepharodermatitis
- Dry Eye Disease
- Superior limbic keratoconjunctivitis
- Phlyctenular keratoconjunctivitis
- Eroding tarsal concretions causing foreign body sensation
- Thygeson's superficial punctate keratopathy
- Transient vision loss from carotid artery disease
- Ocular migraines
- Corneal infiltrates and ulcers/CLARE
- Giant papillary conjunctivitis
- Epithelial basement membrane assessment and monitoring
- The macular degenerations
- Presurgical cataract care
- Postoperative care for numerous surgeries
- Eyelid infections: acute hordeola, styes
- The gamut of contact lens complications
- Episcleritis / scleritis

## Relatively Few ODs are Actively Managing Glaucoma

Deciles of GL TRx Volume (10% per Decile)	# of ODs	% of ODs by Decile	Annual GL TRx Range*	Est. Mean # of Patients Treated Annually
10	178	0.4%	4300 - 27400	1321
9	372	0.9%	2600 - 4300	288
8	560	1.3%	1800 - 2600	183
7	770	1.8%	1400 - 1800	133
6	1,000	2.4%	1000 - 1400	100
5	1,325	3.1%	800 - 1000	75
4	1,750	4.1%	600 - 800	58
3	2,500	5.9%	400 - 600	42
2	4,000	9.5%	200 - 400	25
1	20,000	47.9%	1 - 200	8
0	10,000	23.6%	0	0

\*All Glaucoma Therapeutic Agents (Droplets and Gels)  
Source: IMS Data This Oct 2018

50% of GL Prescriptions in Optometry are written by <7% of ODs

80% of GL Prescriptions in Optometry are written by 20% of ODs

The other 80% of ODs are managing VERY FEW GL patients therapeutically

## Glaucoma and Medical Malpractice

- “Overall the rate of plaintiff verdicts was similar in glaucoma and in ophthalmology as a whole; However, the magnitude of plaintiff awards was higher in glaucoma than in ophthalmology overall.”  
“Common scenarios leading to litigation included failure to diagnose or mismanagement of glaucomatous disease, as well as adverse drug effects, and surgical complications. Many cases could have been avoided with careful examinations, through documentation in the patients' chart, and detailed conversations with patients.”

2020

*Ophthalmology Glaucoma, October*

## Regarding Pupillary Abnormalities

- If there is:
  - No ptosis
  - No EOM dysfunction

Then it's nothing “bad” and a scan is not indicated

### Consider:

Adies, pharmacologic causation, or “discovered” physiologic anisocoria as probabilities

## Management of 3<sup>rd</sup> Nerve Palsy

- Pain vs no pain, pupil involvement, or not
  - Does not matter!
- All patients need emergent CTA or MRA
- Send straight to ED; not to an ophthalmologist
- However, about 95% of 3<sup>rd</sup> N. palsies are simply “microvascular,” and not aneurysmal in nature

Foster PJ, et al. JAMA Ophthalmol 2017;135(3):203-4.

## Qbrexza: The Importance of History!

- The mydriasis was “eventually” attributed to Qbrexza! (Think! Take a good Hx!)
- “Inadvertent contact with the ocular structures can cause mydriasis and blurred vision. A thorough history asking specifically about cloth wipes such as Qbrexza for patients presenting with unilateral mydriasis in the absence of extraocular motor deficits may prevent unnecessary medical costs, neuroimaging, and risk, as well as avoid considerable fear and anxiety for our

## Oxymetazoline 0.1% and Ptosis

- Afrin nasal spray = 0.05% oxymetazoline
- To help with acquired ptosis
- Alpha agonist to stimulate muller muscle
- Used once daily as needed
- Provides about .5mm - .7mm of lid rise
- Approved down to age 13
- Duration of effect is not yet known
- Marked as Upneeq (single use vial) by RVL Pharmaceuticals
- Only available via RVL Pharmacy (Upneeq.com)

*JAMA Ophthalmol. Nov 2020*

## Calculating Hydroxychloroquine Dosage

- About half of patients are overdosed
- “DoseChecker” App is the most exacting way to calculate proper dosing

*JAMA Ophthalmology, February, 2018*

## Qbrexza™ (glycopyrronium tosylate)

- In a class of anticholinergics – therefore can affect accommodation
- Indication: Primary Axillary Hyperhidrosis (excessive underarm sweating)
- Approved in 2018 as a medicated towelette applied directly to skin
- Prescription drug approved down to age 9.
- Potential ocular side-effects:
  - Dilated pupils
  - Dry eyes
  - Blurred vision
  - Angle closure (in anatomically narrow angles)
- Manufacturer: Demira, Inc. Menlo Park, CA

## - Dress For Success – Dress For Survival

- True optometric physicians need to dress like the doctors we are.
- “Patients preferred to see their physicians dressed formally with white coats. They saw these physicians as more knowledgeable, trustworthy, caring and approachable than physicians dressed in other ways; patients also felt more comfortable with physicians dressed formally with white coats.”
- COVID-19 has changed our dress code

*Br Med J. May, 2018*

## British Perspective on Plaquenil

- “New data using modern retinal imaging techniques identify the prevalence of hydroxychloroquine retinopathy at around 7.5% in patients taking the drug for more than 5 years, increasing to 20-50% after 20 years.”
- “HCQ is a drug increasingly used in the treatment of systemic lupus erythematosus, rheumatoid arthritis, and other autoimmune disorders.”
- The new recommended dosage is 5mg/Kg/day

### Least Safe Weight

(400 mg at 6.5 mg/kg = 135 pounds)

(300 mg at 5.0 mg/kg = 100 pounds)

*Eye, 2018*

## Pentosan Polysulfate Sodium (Elmiron) Maculopathy

- Only FDA-approved drug to treat interstitial cystitis (painful inflammation of the bladder)
- FDA-approved in 1996 (same as Xalatan) 100 mg TID
- Like Plaquenil, extended use (about 4 years) can cause a toxic (geographic) maculopathy in approximately 20% of patients.
- Like Plaquenil, visual acuity is initially preserved even with visible maculopathy
- Evaluate annually with OCT and fundus photographs
- Bottom line: in patients taking Pentosan, educate the patient and communicate with their urologist.

Ophthalmology June 2020

## Treatment for Thyroid-related Proptosis

- New breakthrough drug to reduce proptosis
- Tepezza™ (teprotumumab) Horizon Therapeutics
- 75% achieved ~2.5mm reduction in proptosis
- I.V. infusion every 3 weeks for 8 sessions
- Mild to moderate side effects:
  - » Muscle spasm
  - » Alopecia
  - » Fatigue
  - » Hearing loss
  - » Dysgeusia
  - » Nausea
  - » Diarrhea
  - » Hyperglycemia
  - » Dry skin
  - » Headache
- Cost is about \$100,000.00 for 6 month treatment

NEJM January 23, 2020

The Medical Letter on Drugs and Therapeutics

April 19, 2021

FROM ISSUE 1622

Drugs for Allergic Rhinitis and Allergic Conjunctivitis

Summary: Drugs for Allergic Rhinitis and Allergic Conjunctivitis

- An oral second-generation or intranasal H<sub>1</sub>-antihistamine is preferred for initial treatment of intermittent allergic rhinitis.
- Intranasal corticosteroids are the most effective monotherapy for allergic rhinitis symptoms. They can be used in combination with an intranasal H<sub>1</sub>-antihistamine for treatment of moderate to severe symptoms.
- Use of an oral second-generation H<sub>1</sub>-antihistamine or an intranasal corticosteroid for allergic rhinitis also improves symptoms of allergic conjunctivitis.
- Ophthalmic H<sub>1</sub>-antihistamines are at least as effective as oral second-generation H<sub>1</sub>-antihistamines for treatment of allergic conjunctivitis.
- Short-term use of an ophthalmic corticosteroid such as loteprednol can be considered for allergic conjunctivitis that fails to respond to other medications.
- Allergen-specific immunotherapy can alter the natural history of allergic respiratory disease and induce long-term remission.

## Cetirizine 0.24% ophthalmic solution

- Now Indicated for ocular itching associated with allergic conjunctivitis
  - Instill 1 drop in each affected eye BID (8 hr apart)
  - Adverse Effects:
    - Hyperemia (1-7%)
    - Instillation site pain (1-7%)
    - Reduced visual acuity (1-7%)
  - Marketed by Eyeveance as ophthalmic solution
- Zerviate

## The Eye and the ED

- Why people go to the ED with Eye problems

### Most Common ED Diagnosis

Conjunctivitis	33%
Corneal injury	13%
Corneal F.B.	8%
Hordeolum	4%

- Mean ED charge \$989.30 for eye visit
- Eye visits: 1.5% of all visits
- 32,000 eye-related visits per year

Vazini K, et al. Ophthalmology 2016;123(4):917-19

## Same Day Problem Work-Ins

- Average "Urgent Care" visit costs \$168.00
- ER visit is "over 10 times more expensive"
- Antibiotics for viral conjunctivitis is common practice in these settings
- "We've cultivated a culture of "yes". If patients want or need to be seen, then they get an appointment."
- "There are ways to provide same-day care. Such care is good medicine -- and it's good for the practice."

EyeNet October, 2019

### Imaging in the Emergency Department

- MRI – Optic disc edema, diplopia, cranial nerve palsy, decreased vision.
  - Expensive – much less needed than CT
- CT – Non-neuro-ophthalmological conditions
- Most common conditions: “conjunctivitis, corneal abrasion, dry eye syndrome, corneal foreign body, PVD, and blepharitis.”
- “Eye problems account for approximately 2 million ED visits every year, with 44% of these visits being for nonemergent problems.”

*Am J Ophthalmol. March 2020*

### Bacterial Conjunctivitis

- Unilateral or bilateral purulent or mucopurulent discharge of varying degree
- In subtle cases, carefully examine the lacrimal lake under high magnification and look for microparticulate debris which can be evidence of bacterial infection.
- Preauricular lymphadenopathy is uncommon, but can be present in hyperacute cases
- Chemosis may be present in more severe cases
- SPK can be present, especially if staphylococcal etiology. This is usually the result of staph exotoxin chemotoxicity, and tends to be seen mostly inferiorly because of tear film dynamics
- Common etiology: **Adults:** Staph aureus, Staph epidermidis, Strep pneumoniae  
**Children:** Strep pneumoniae, Haemophilus
- Therapy: **Adults:** Tobramycin, Polytrim, or Fluoroquinolone  
**Children:** Polytrim or Polysporin ung
- Treat for five to seven days as a rule

### Superior Limbic Keratoconjunctivitis

- Both sexes affected, women more
- Main symptoms: distressingly irritated eyes
- Dry eyes common companion finding
- Symptoms disproportionate to clinical findings
- Spontaneous exacerbations and remissions
- 25-40% have some thyroid dysfunction
- Tx: difficult- .5% AgNO3, optimum lubrication, pressure patching, therapeutic soft lenses, surgical resection, cryotherapy

### Antibacterial Medications

- Sulfa Preparations
- Erythromycin
- Bacitracin
- Bacitracin / Polymyxin B
- Bacitracin / Polymyxin B / Neomycin
- Chloramphenicol
- Gentamicin
- Tobramycin
- Trimethoprim / Polymyxin B

### Antibiotic Resistance Monitoring in Ocular micRorganisms (ARMOR) Study

- Prospective, multicenter, longitudinal survey of antibiotic susceptibility trends
- Participating sites in the US include community hospitals, university hospitals, and ocular centers
- ARMOR isolates:
  - Staphylococcus aureus
  - Coagulase-negative staphylococci (CoNS)
  - Streptococcus pneumoniae
  - Haemophilus influenzae
  - Pseudomonas aeruginosa

*Asbell PA et al. JAMA Ophthalmol. 2015;1-10*

### MIC<sub>90</sub> Comparisons for ARMOR Surveillance Study Isolates

2020 ARMOR SURVEILLANCE DATA: MIC <sub>90</sub> COMPARISONS FOR STUDY ISOLATES									
	S aureus		CoNS		GNs		MRCNS		
	2016 (n=103)	2020 (n=103)	2016 (n=103)	2020 (n=103)	2016 (n=103)	2020 (n=103)	2016 (n=103)	2020 (n=103)	Source
Bacitracin	0/25	1/2	2/2	0/25	2/4	2/4	4/4	4/4	
Vancomycin	1/1	1/1	1/2	2/2	2/2	2/2	2/2	2/2	
Trimethoprim	2/4	2/2	2/2	2/2	>256	>256	>256	>256	
Moxifloxacin	1/4	1/3	1/16	1/16	1/16	1/16	1/16	1/16	
Ciprofloxacin	2/4	4/16	1/16	2/16	2/16	2/16	2/16	2/16	
Ofloxacin	0/8	>8	>8	1/16	1/16	1/16	1/16	1/16	
Ciprofloxacin	8/128	2/256	2/256	8/64	64/64	64/64	64/64	64/64	
Tobramycin	1/128	>256	2/256	4/16	1/16	1/16	1/16	1/16	
Azithromycin	>512	>512	>512	>512	>512	>512	>512	>512	

As a reminder: the lower the MIC<sub>90</sub>, the more potent the antimicrobial efficacy.  
 \*MIC<sub>90</sub> is using disk-diffusion (Staph. aureus) or broth dilution (all other) as per CLSI recommendations.  
 Source: Asbell PA, et al. JAMA Ophthalmol. 2015;1(1):1-10.  
 Asbell PA, et al. JAMA Ophthalmol. Published Online April 8, 2015.

## Differential Diagnosis of Corneal Ulcers vs. Infiltrates

### Ulcer (Infection)

- ♦ Rare
- ♦ Usually painful
- ♦ Tend to be central
- ♦ 1 to 1 staining defect to lesion ratio
- ♦ Cells in anterior chamber
- ♦ Generalized conjunctival injection
- ♦ Usually solitary lesion
- ♦ Possible tear lake debris

### Infiltrate (Inflammation)

- ♦ Common
- ♦ Mild pain
- ♦ Tend to be peripheral
- ♦ Staining defect size relatively small
- ♦ Rare cells in anterior chamber
- ♦ Sector skewed injection pattern
- ♦ Can be multiple lesions
- ♦ Clear tear lake

### Antibiotics - Systemic

- Penicillins
- Cephalosporins
- Tetracyclines
- Macrolides
- Fluoroquinolones

[www.drugfacts.com](http://www.drugfacts.com)

### Adenoviral Infections

- Common cause of "red eyes"
- Assume adenovirus until proven otherwise
- Often have pre-auricular node
- Non-purulent watery discharge
- Usually starts in one eye and spreads to fellow eye in a few days
- Always evert lids to survey tarsal conjunctiva
- With EKC, spotty sub-epithelial infiltration in 50 to 75% of untreated cases

### Latest on Microbial Keratitis

- 2.5 per 100,000 in the 1950s
- "11 per 100,000 in the 1980s, a rise driven largely by increased contact lens use"
- "27.6 per 100,000 person-years overall, with 130.4 cases per 100,000 person-years in the contact lens-wearing population."
- Microbial keratitis generates 1 million clinical visits in the US each year (58,000 to EDs)
- "Studies published after 2000 demonstrate that contact lens use is now the predominate risk factor in the developed world."
- Nocturnal orthokeratology in children is a "strong risk factor" for MK

Survey Ophthalmol. May/June, 2019

### Keflex® (Cephalexin)

- Children > 2 months
- For skin and soft tissue infections, may be given every 12 hours

Weight (LBs)	Dose (250 mg/5ml)
11	¼ tsp
22	½ tsp
33	¾ tsp
44	1 tsp (250 mg cap)
66	1 ½ tsp
88+	2 tsp (500 mg cap)

### Literature on Adenoviral Keratoconjunctivitis

- Pseudo-membranes are a frequent complication of EKC
- In untreated cases, 50% of corneas develop subepithelial infiltrates – a cellular immune reaction against viral antigens
- AdenoPlus® is highly sensitive, specific, simple and inexpensive
- Bacterial superinfection is rare
- "Topical steroids relieve symptoms, and 5% betadine kills the virus in tears, thus reducing the risk of disease spread."
- Restasis does not affect the natural course of the disease.

Journal of Clinical Ophthalmology, 2013; 73(1): 435-43

## Povidone - Iodine 5% ophthalmic solution

- Broad spectrum microbicide
- Indicated for "irrigation of the ocular surface"
- "Off label" use: Tx adenoviral keratoconjunctivitis
  - Anesthetize with proparacaine
  - Instill 1 or 2 drops of NSAID
  - Instill several drops Betadine 5% in eye(s), close eye(s)
  - Swab or rub excess over eyelid margin
  - After 1 minute, irrigate with sterile saline
  - Instill 1 or 2 drops of NSAID
  - Rx steroid qid x 4 days
- No reports in clinical trials of adverse reactions.
- Avoid use if patient is allergic to iodine
- Marketed as Betadine 5% ophthalmic prep solution (30 ml opaque bottle) by Alcon surgical
- CPT 99070 supply code

## Latest on Betadine and Iodine Allergy

- Seafood allergy is caused by various protein allergens. Therefore, an allergy to seafood is not a contraindication to the use of betadine.
- Allergy to iodinated contrast media is not related to the iodine, but to other intrinsic chemicals.
- "The current literature suggests that iodine itself is not an allergen; it is required for thyroid function and other normal biological processes and does not have the complexity necessary for antigenicity."
- "There are currently no reports of anaphylaxis secondary to topical ophthalmic use of povidone-iodine."

*J Cataract Refract Surg. 2020;46(5):795-796.*

## Insights Into Povidone-Iodine

- ~~(Betadine)~~ works well on the ocular surface
- Betadine is a broad spectrum antimicrobicide
- "Brief application of povidone iodine (PI), 5% - 10%, to the ocular surface is commonly used world wide since the 1980s."
- Toxicity is concentration and duration dependent
- It is preoperative standard-of-care
- Effectively kills bacteria that are resistant to topical antibiotics
- "Dilute PI solution is widely available, easy to make, inexpensive, and has been studied extensively."

*Survey Ophthalmol, Nov-Dec, 2018*

## Intranasal Betadine: Effects on Covid-19

- "Povidone-iodine nasal antiseptic solutions at concentrations as low as 0.5% rapidly inactivate SARS-CoV-2 at contact times as short as 15 seconds."
- Virus transmission pathway: "Infection of ciliated cells of the upper airway within the nose as the dominant site of infection, followed by subsequent aspiration and seeding of the lungs."
- Perhaps betadine has another role in addition to its effect on adenoviral ocular infection.

*JAMA Otolaryngol Head Neck Surg, October 2020*

## Hypochlorous Acid

- Pure hypochlorous acid (HOCl) is released from neutrophils
  - Essential part of body's immune response
- In the body, HOCl:
  - Kills microorganisms
  - Neutralizes inflammatory toxins released from pathogens
  - Helps suppress the body's inflammatory response
  - Prevents biofilm formation
- Ophthalmic strength HOCl has comparable microbial spectrum to Betadine
- Covers some bacterial strains missed by Betadine (*Serratia marcescens*)
- Onset of activity twice as fast as Betadine (1 min vs 2 min)
- Remains active with a toxicity level 1000x lower than Betadine

*Antimicrobial Activity Comparison of Pure Hypochlorous Acid (0.01) with other Wound and Skin Cleaners at Non-Toxic Concentrations. Hoon, Rani, Najafi, Wang, Debabov; SAWC Spring 2013 and WHD*

## Perspective on Posterior Vitreous Detachment

- Occurs mostly between ages 50 and 70 (peak incidence 62)
- No association with refractive error, except patients with  $-3.000$  or more go to P.V.D. 5-10 years earlier
- 80-90% of breaks associated with P.V.D. are in the superior quadrants

## Acute PVD and Retinal Tears

- The rate of an acute retinal tear associated with an acute symptomatic PVD is about 8% at the initial visit, and 1.5% of eyes without a tear on the initial visit are found to have a tear on follow-up examination.

Ophthalmology, January 2018

## AAO-PPP on PVD Patient Care

“Patients presenting with an acute PVD and no retinal breaks have a small chance (~2%) of developing retinal breaks in the weeks that follow. Selected patients, particularly those with any degree of vitreous pigment, vitreous or retinal hemorrhage, or visible vitreoretinal traction, should be asked to return for a second examination promptly if they have new symptoms or within 6 weeks following the onset of PVD symptoms.”

Preferred Practice Guidelines, AAO, Oct, 2019

## Follow-up After Initial PVD Event

- About 2% of patients with normal findings will develop a subsequent retinal tear.
- In this study, 45% of these retinal breaks “were found more than 6 weeks after presentation.”
- At the Wills Eye Hospital Retina Service; “60% of patients in our study had at least a 4-6 week follow-up. Most physicians in our practice do not routinely follow up patients beyond this timeframe.”
- Only about half of these subsequent events were symptomatic, therefore there may be a need to re-evaluate acute PVD patients more frequently than is currently common practice.

Ophthalmology, April 2020

## What About Scleral Depression

- “An examination using a 28 diopter lens with scleral depression did not provide any additional benefit to an examination without depression during indirect ophthalmoscopy.”
- “In many areas around the world ophthalmologists have progressively shifted from indirect ophthalmoscopy with 28 diopter-type lenses to new fundus lenses at the slit lamp to improve the comfort of the patient without scleral depression.”

Am J Ophthalmol, November 2018

## Verbatim Quote From Deposition

Attorney: “And what discussion did you have about follow-up?”

Plaintiff: “There wasn’t a discussion about follow-up.”

Attorney: “You all didn’t talk about your need to come in if it gets worse?”

Plaintiff: “I don’t recall any discussion about follow-up.”

- Neither did the optometrist’s medical record!!
- Learn from this horrid law suit experience!

## Treatment of Vitreous Floaters

- Treatment options:
  - Live with them
  - Vitrectomy
  - Vitreolysis
- YAG laser – angle of focus can be changed to reach floaters; special vitreous lenses allow the laser beam to focus on floater
- Advantages: simple, noninvasive, no pain or discomfort
- Disadvantages: healthy eyes getting elective surgery, risk of retinal detachment, possibly worsening of symptoms
- Clear visualization of floaters key to successful treatment
- Treatment may require more than one laser session; symptomatic vitreous opacifications (SVO); only SVO’s > 4mm from retina treated



### Vitreolysis for Symptomatic Floaters

- Two options: YAG laser or vitrectomy
- Newer “Reflex Technology” enhances YAG success
- Floater material is both fractionated and vaporized
- Multiple sessions may be required
- Weiss ring easier to treat than amorphous clouds
- About half of patients obtain symptomatic relief
- Complications are few, but can be serious

*Survey Ophthalmol, March 2020*

### Insights into Myodesopsia

- “In bothersome cases there is profound degeneration in contrast sensitivity function qualifying the condition as a disease that can be referred to as vision-degrading myodesopsia, so as to distinguish such cases from vitreous floaters that are not clinically significant.”
- Limited vitrectomy has demonstrated a high safety profile with exceptional efficacy and cost-efficiency.
- About 15% of patients developed cataracts in about 1 year.

*Am J Ophthalmol., August, 2019*

### Timing and RD Repair: Is there a hurry?

- Preoperative VA is the strongest predictor of postoperative VA
- When central vision is affected, about 30% of patients ultimately achieve 20/40 or better
- “There is no difference in VA outcomes among patients who underwent repair within the first week of onset.”
- VA can improve for months to years after surgical repair
- There was no association between duration of macular detachment and postoperative VA
- “Clinical evidence suggests that the duration of macular detachment has a minor, if any, effect on visual outcome when repair is performed within about one week. Similarly, many fovea-sparing RD’s can likely be deferred for a short period without affecting visual outcomes.”

### Malpractice Risks Regarding Retinal Detachments

- Uptick in legal claims for diagnostic errors
  - Especially retinal detachments
- “And by far the most frequently missed diagnosis in our entire study was RD—nothing else came close.”
- 85% of these missed RD’s presented with risk factors specific to RD
- “The primary pathogenic mechanism—and the biggest risk factor—for RD is PVD.”
- Comprehensive ophthalmologists (and optometrists) should have a low threshold for referral to a retinal subspecialist.”

Reference: EyeNet, April, 2018