

# Post Surgical Scleral Lens Fitting: Glaucoma



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# Disclosure

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- EyePrint  
Prosthetics
- Mojo Vision



# Glaucoma

- The 2<sup>nd</sup> leading cause of blindness worldwide.
  - Affecting 79.6 million people [ BJO, PubMed: 16488940]
- Requires good communication if co-managing
- Commit to the learning curve
  - These eyes can be complicated
  - Have all the tools



# Considerations When Fitting Glaucoma Patients

Age

Medications

Ocular Surface Disease

Lids- Keratinization/ Cicatricial

Limbal Stem Cell Deficiency

Corneal Epithelial Defects

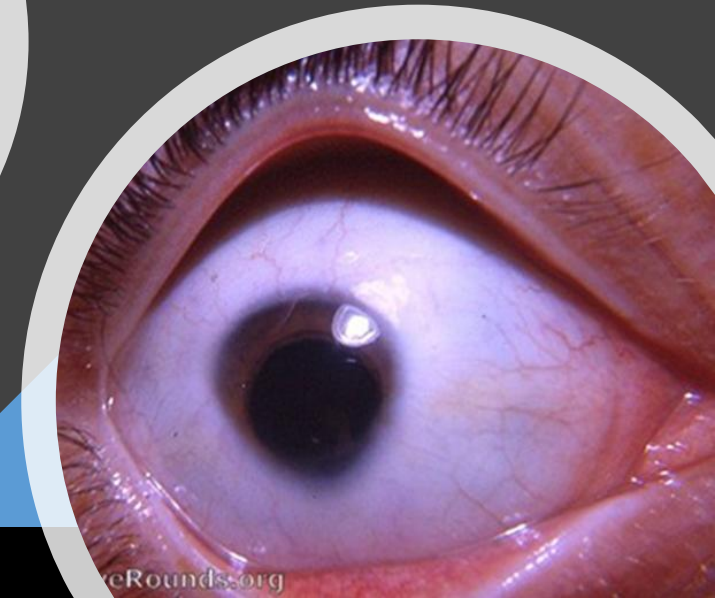
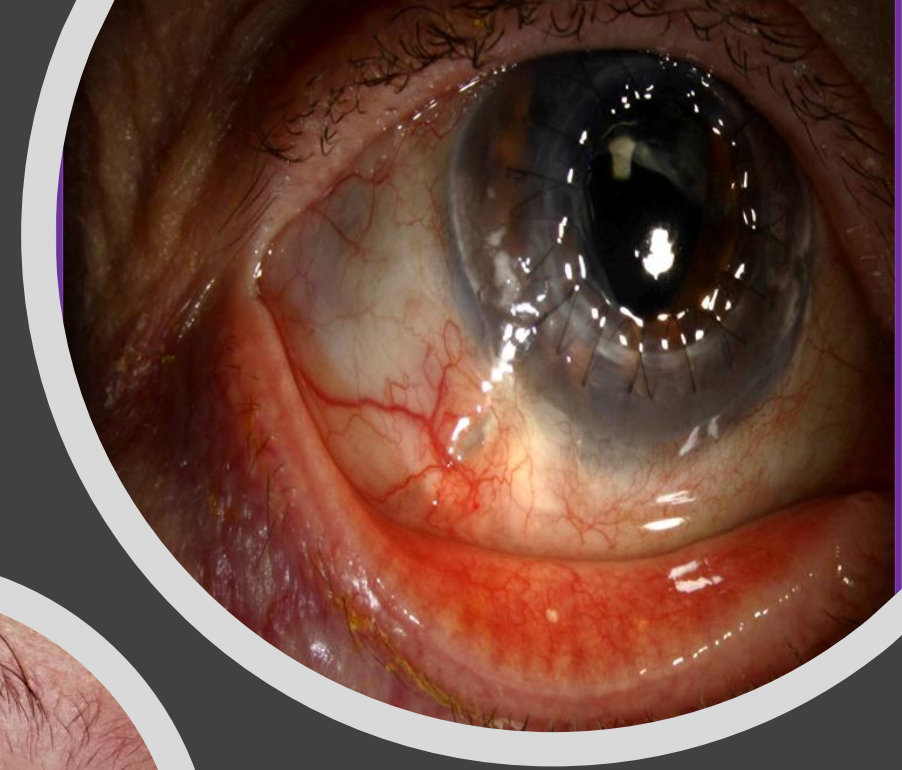
Scleral Keratinization

Cornea of Unusual Shape or Size

Corneal Transplants/ Artificial  
Cornea

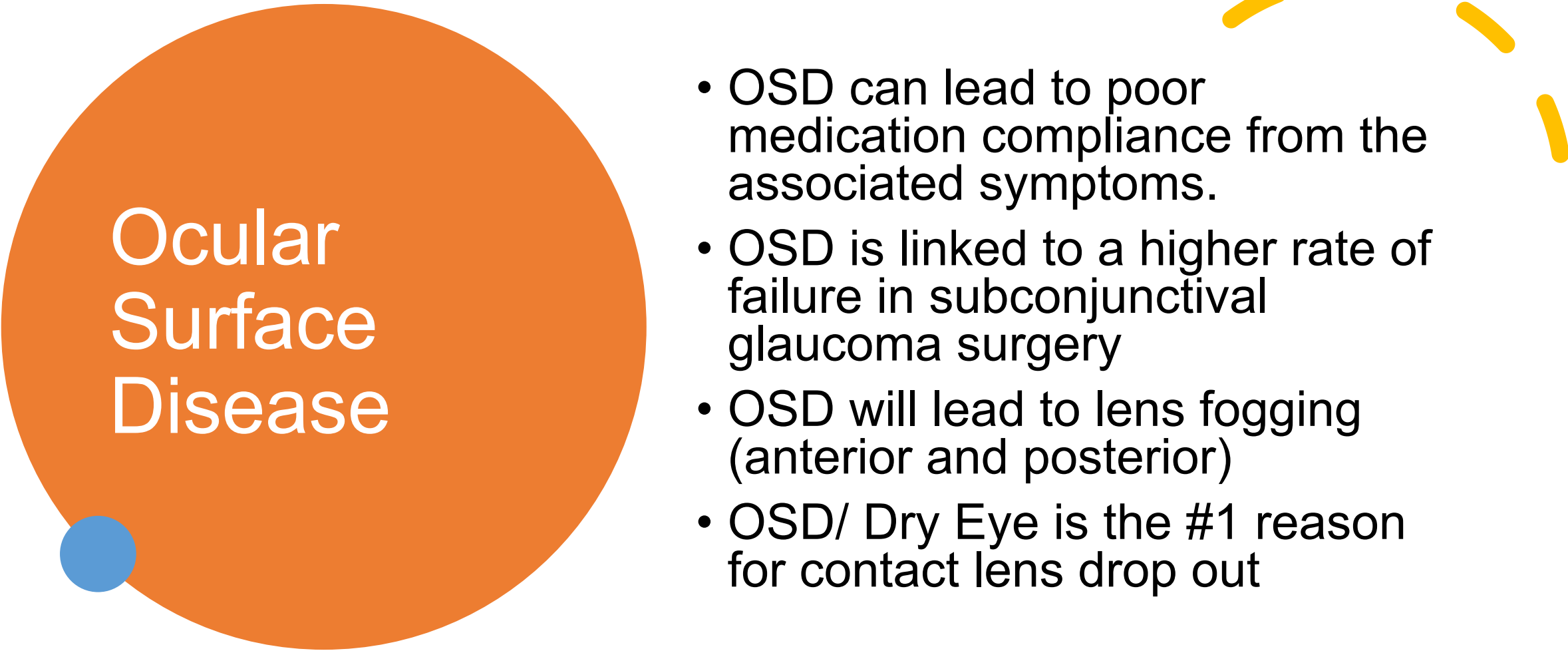
Glaucoma Surgeries

Inflammatory Episodes/ Granulomas



# Glaucoma Drug and Ocular Surface Disease

- Estimated up to 60% of glaucoma patients on topical anti-glaucomatous medications have ocular surface disease.
- Topical glaucoma medications can cause burning, irritation, itching, tearing, and decreases in visual acuity within three months of medication initiation.
- Primary open angle glaucoma (POAG) patients have a higher risk of ocular surface disease in part due to a 22% lower basal tear turnover rate in comparison to patients without glaucoma



# Ocular Surface Disease

- OSD can lead to poor medication compliance from the associated symptoms.
- OSD is linked to a higher rate of failure in subconjunctival glaucoma surgery
- OSD will lead to lens fogging (anterior and posterior)
- OSD/ Dry Eye is the #1 reason for contact lens drop out

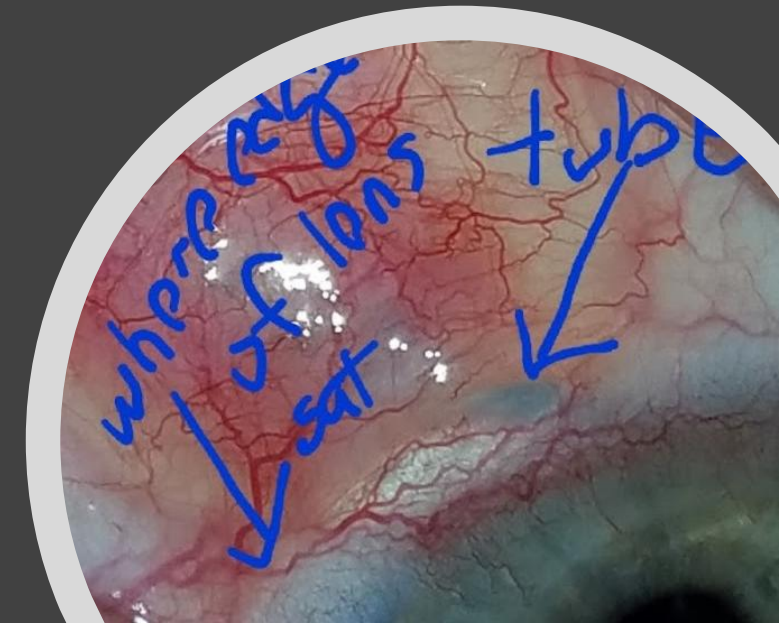
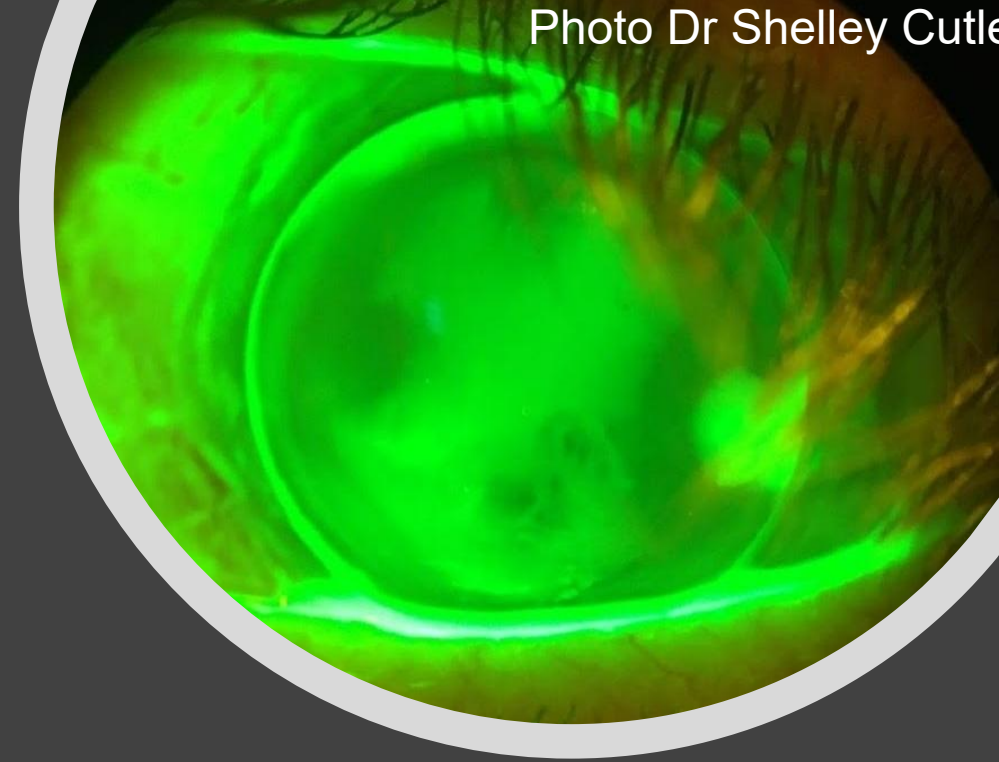
# Tip#1: Manage the Ocular Surface Disease



- Recognize and Treat OSD
- Lid Hygiene
  - Wash Lids After Drop Instillation
  - Lid Debridement
  - Topical PolySaccharides or Barrier Cream
  - Judicious Steroid Pulsing
- Remove the Preservative (BAK free)
  - Compounded drug
  - BAK alternatives (Purite, Ocupure, SofZia)
- Consider Surgical Options

## Tip#2: If You Can Get Away with Fitting a GP Lens: Fit a GP Lens

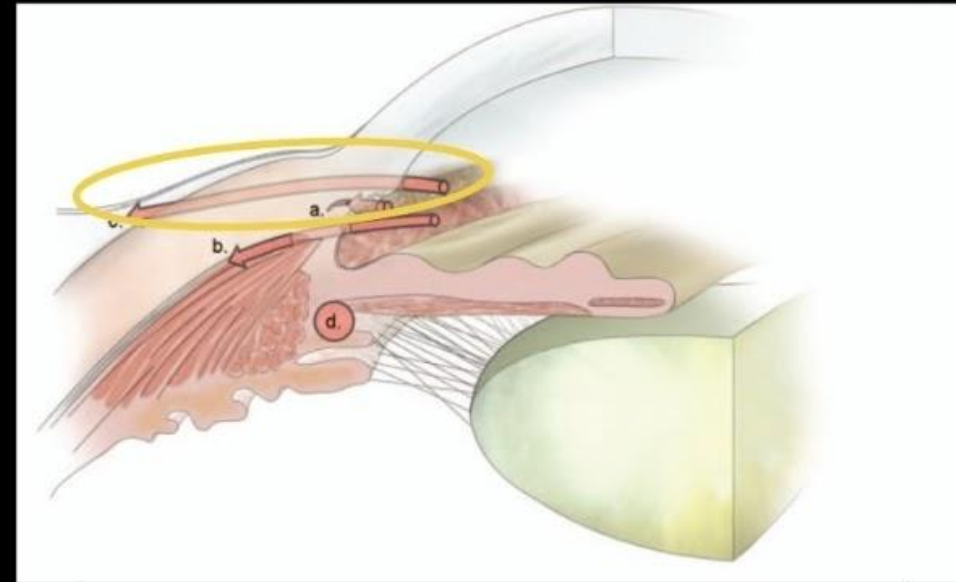
- Keep it away from the bleb or patch graft
- Steepen BC if necessary to get it to drop/ ride lower
- Soft lenses can erode tubes as well
  - I've seen more conjunctival erosions with soft lenses than other modalities
  - Many surgeons tell patients they cannot wear lenses after tube/ trab surgery





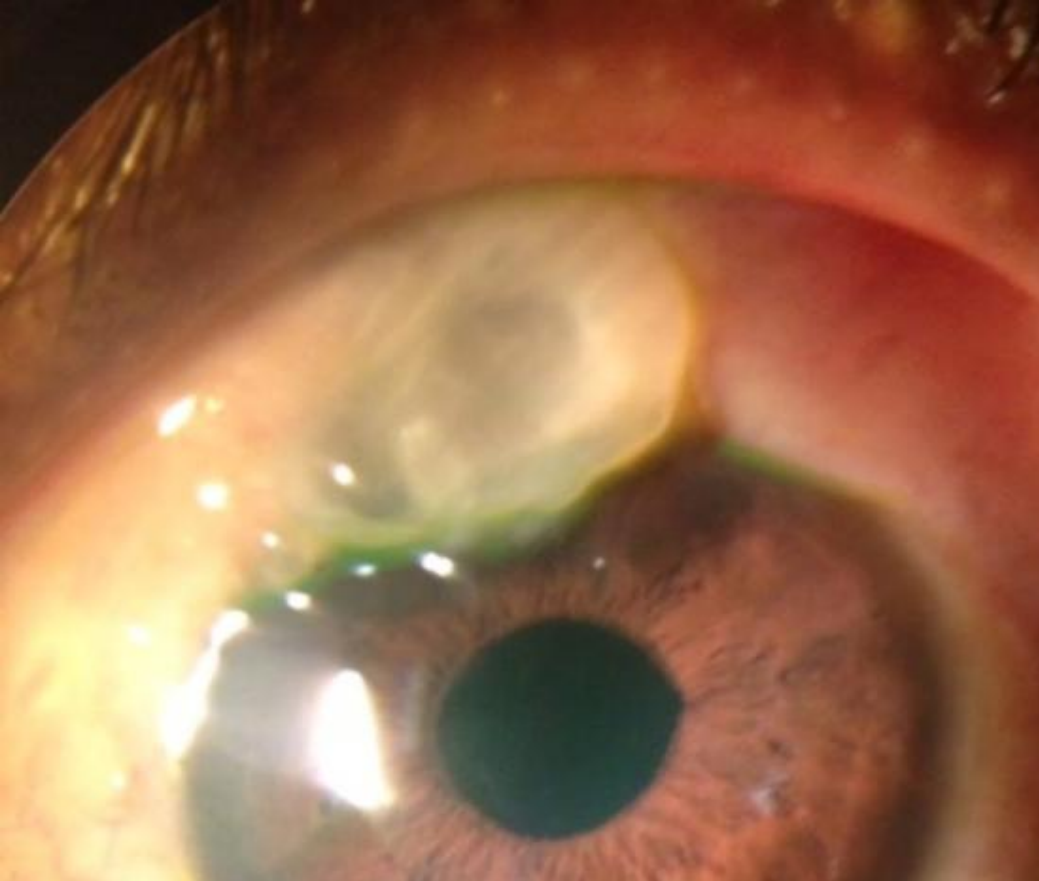
**Tip#3:** Know  
What Type  
of Surgery  
You are  
Dealing With.

## Mechanisms of IOP Lowering

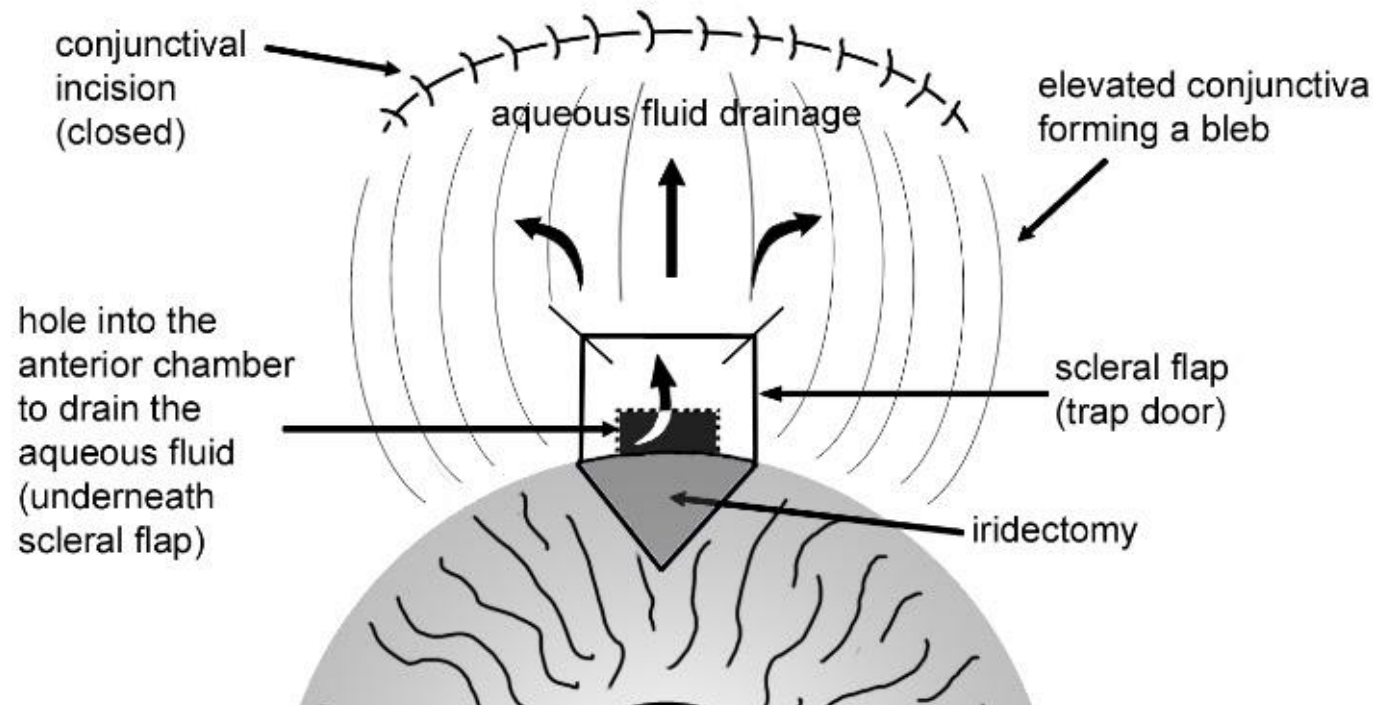


A	B	C	D
Schlemm's canal	Suprachoroidal space	Subconjunctival space	Ciliary body

Gillmann K, Mansouri K. Minimally Invasive Glaucoma Surgery: Where is the Evidence? *Asia Pac J Ophthalmol.* 2020; 9(3):203-14.



**Tip#4:** Know the Difference Between a Trabeculectomy (Bleb) and a Tube Shunt (Patch Graft)



## Trabeculectomy

- Used when dramatic IOP lowering is necessary
  - More IOP lowering than other procedures
  - May have advantage in NTG
  - Can be effective for many years

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# Bleb Complications

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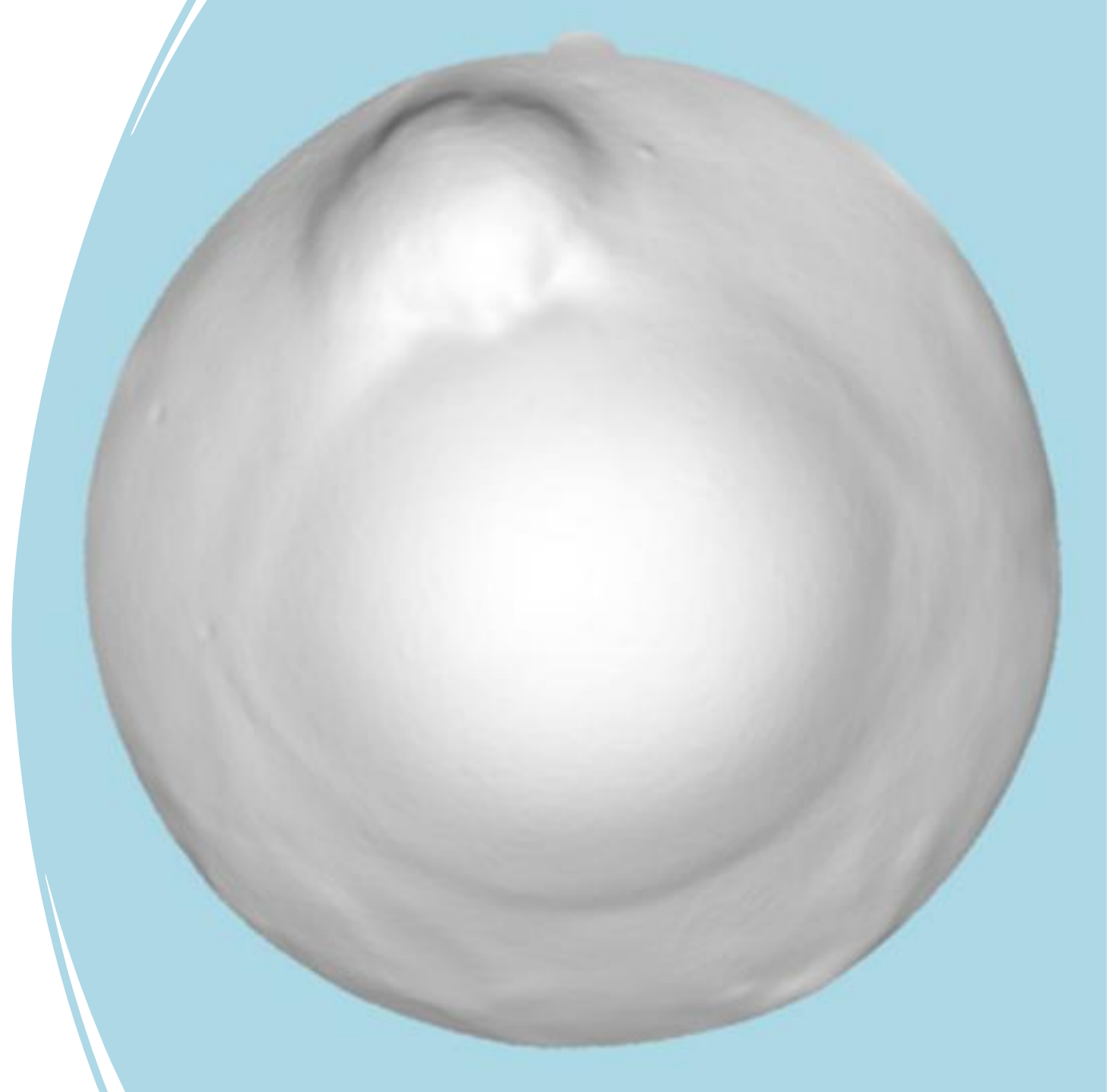
- Blebitis
- Endophthalmitis
- Leaks
- Failure
- Suprachoroidal Hemorrhage

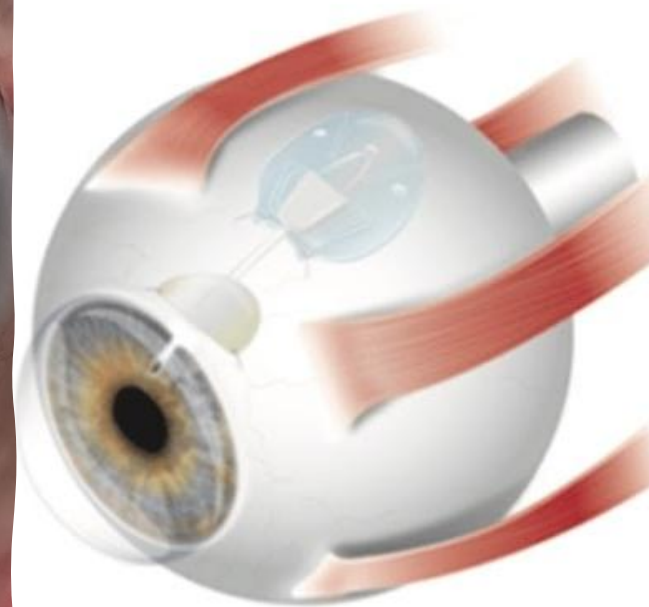


# The Problem with Blebs and Scleral Lenses

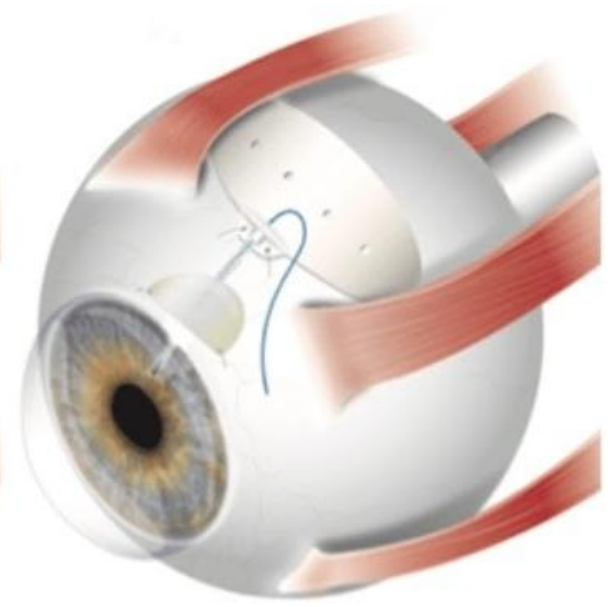
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- Blebs are located adjacent to the cornea, often crossing the limbus
  - Surgeons hate doing bleb revisions
- Blebs “breathe”
- More easily eroded than tube shunts
- Can have extreme elevations





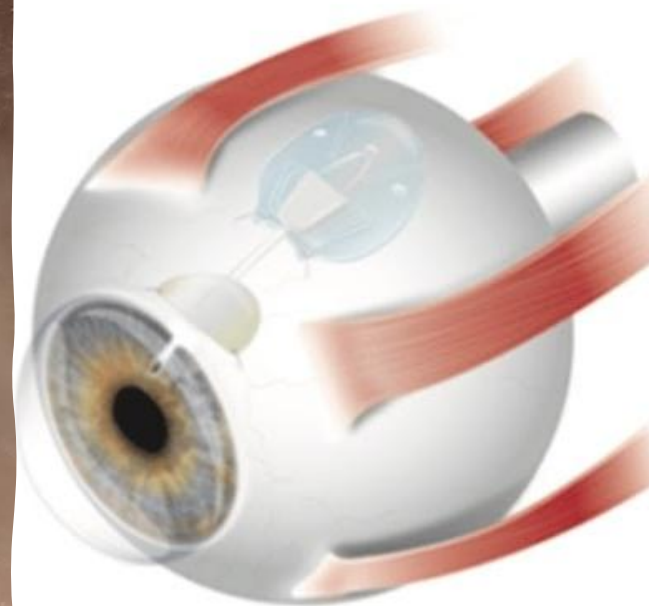
AHMED VALVE



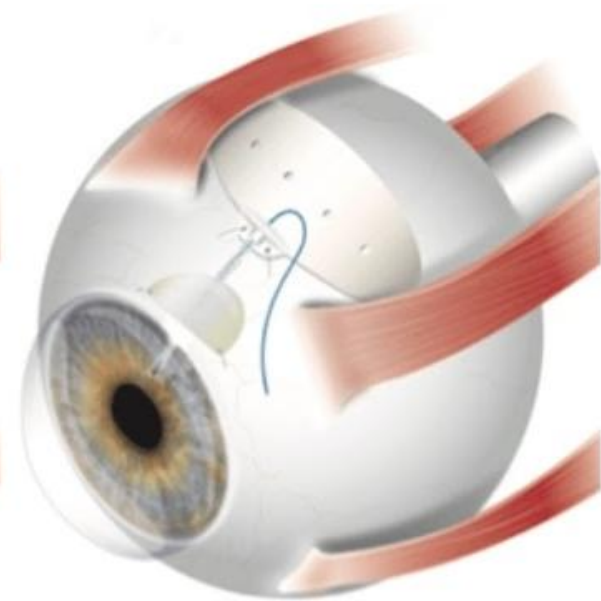
BAERVELDT SHUNT

# Tube Shunts

- Advantages:
  - Less follow up
  - More resistant to Scarring
  - Lower risk of Infection



AHMED VALVE



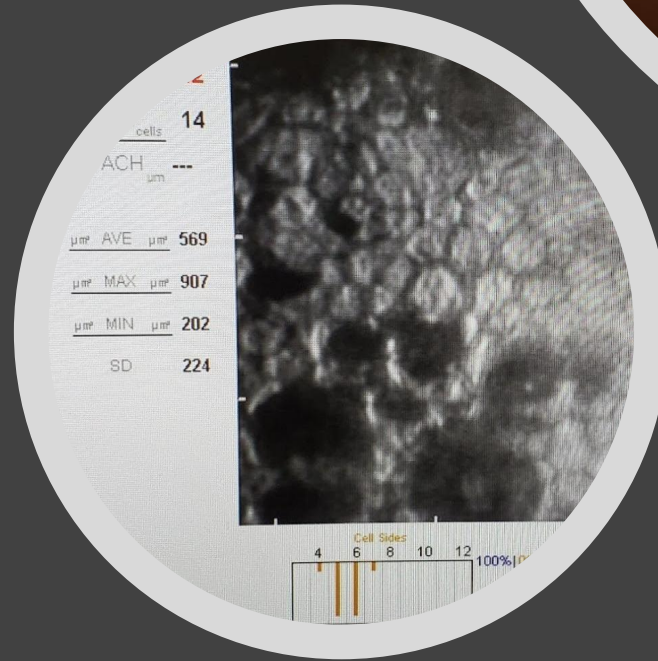
BAERVELDT SHUNT

# Tube Shunts

- Disadvantages:
  - Takes up valuable real estate
  - Fewer future options
  - Higher final IOP
  - Tube erosion

# Tube Shunt Risks

- Hypotony
  - Early (Ahmed), Late (Baerveldt)
- Failure
- Exposure
- Diplopia
- Corneal Decompensation







Pericardium



Cornea  
a



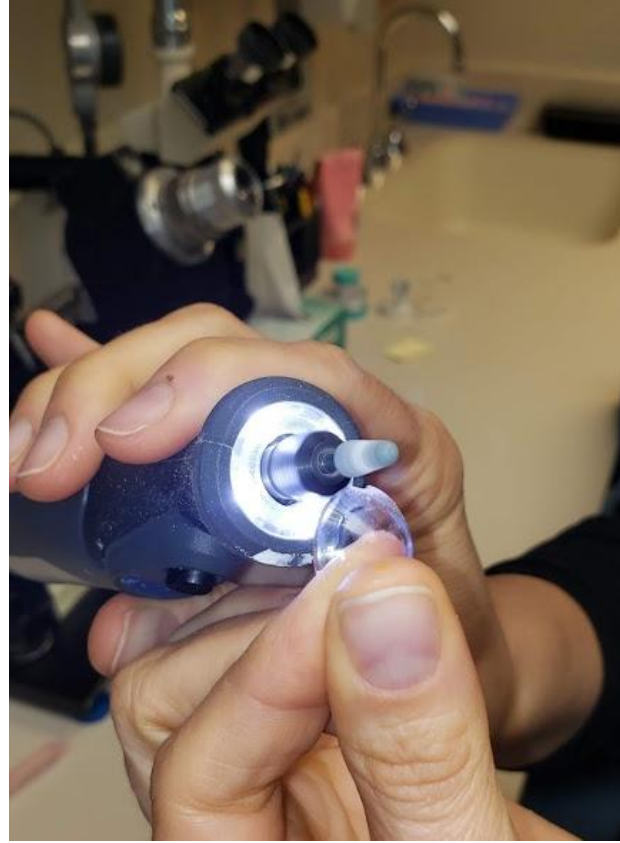
Sclera



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# Notching



Vaulting



Anterior Display Report

Right /





# Dispensing

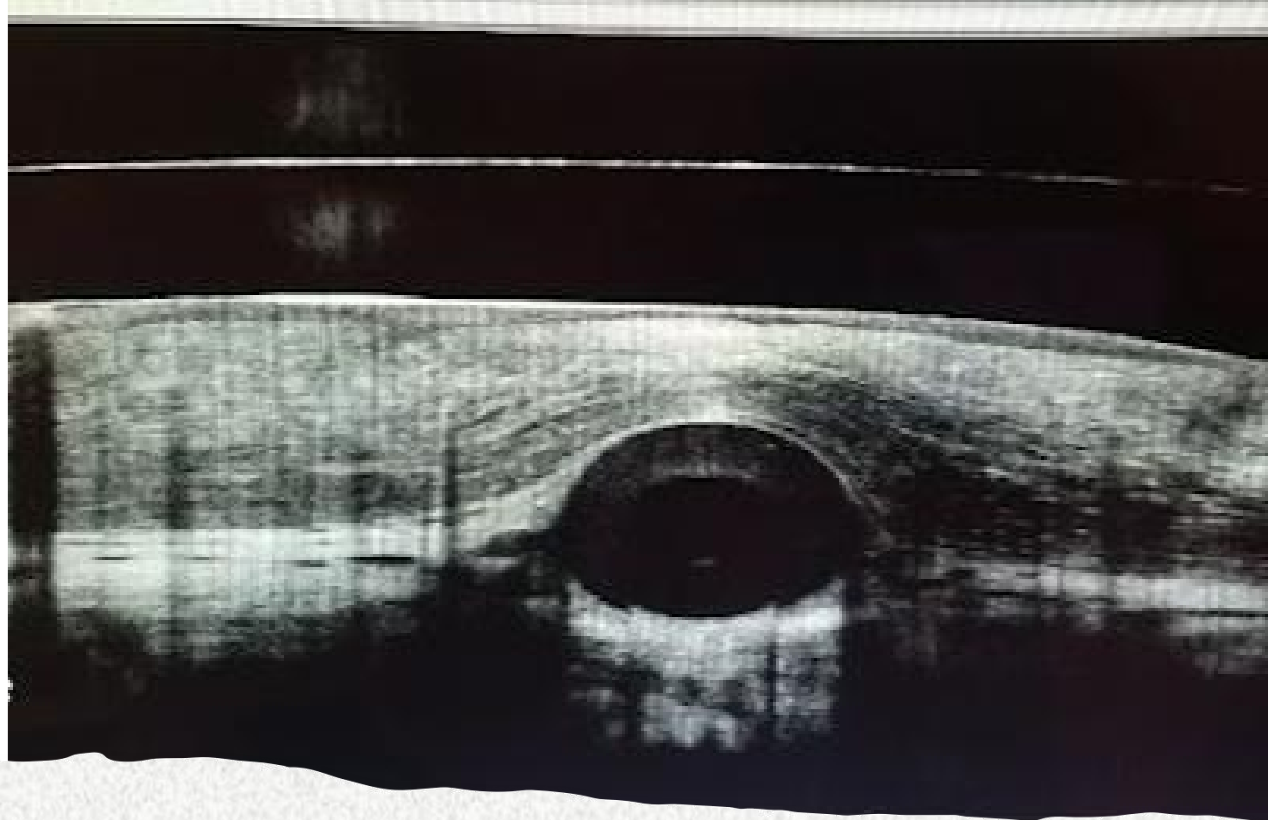
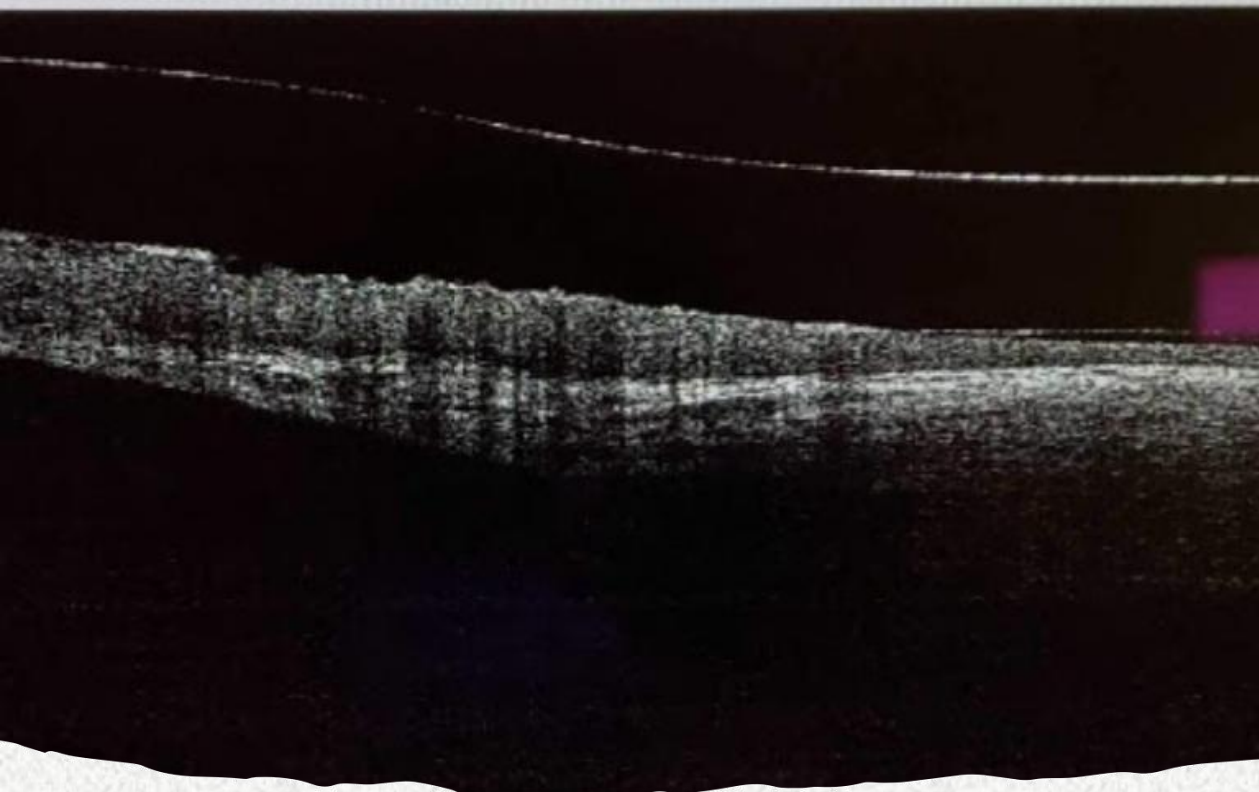
- Will often have leakage around tube
- Insert using gel
- Conjunctiva will remodel
- Debris
  - Mucin/steroid



The Ideal Fit Has  
No Hyperemia  
and No  
Compression

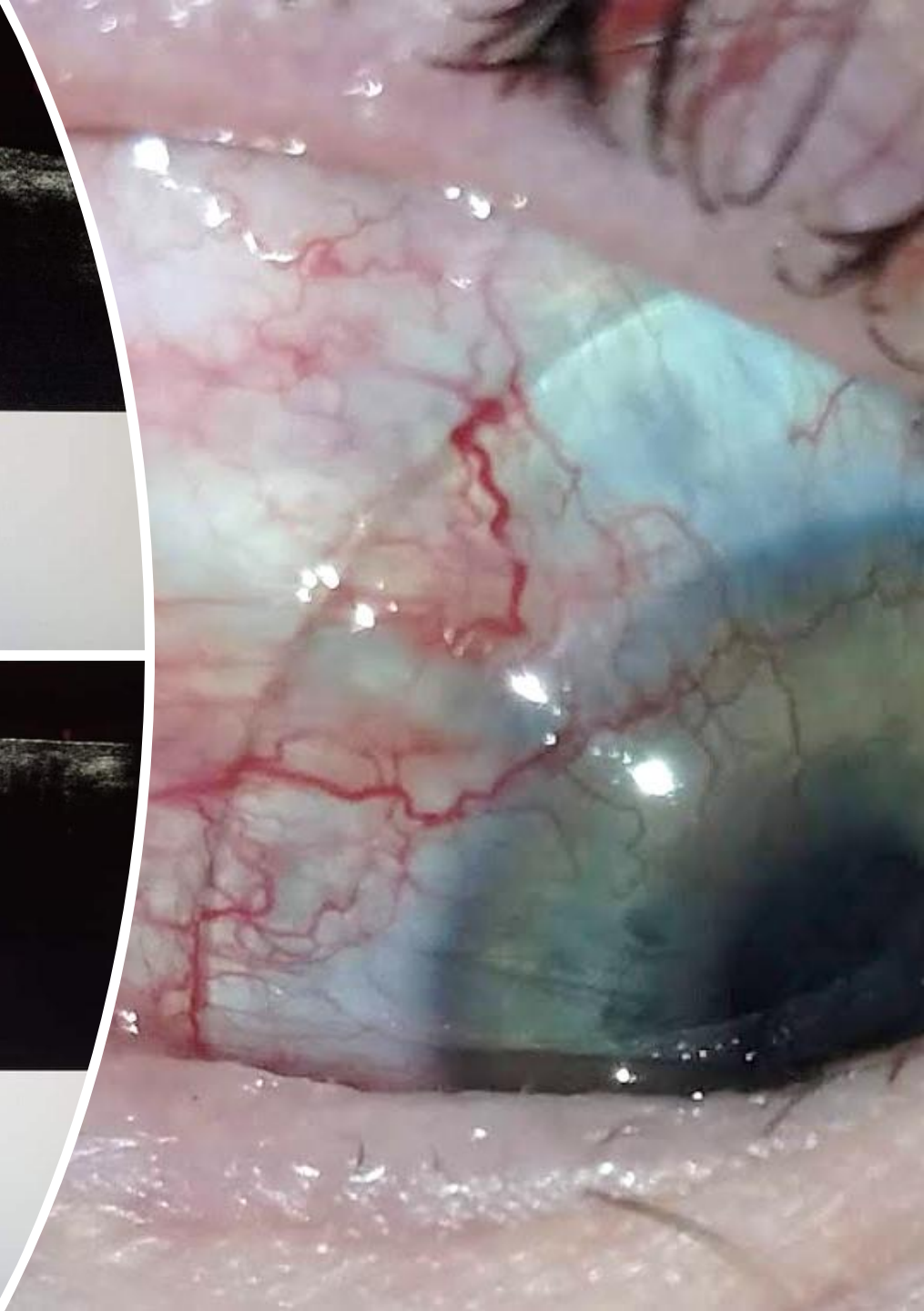
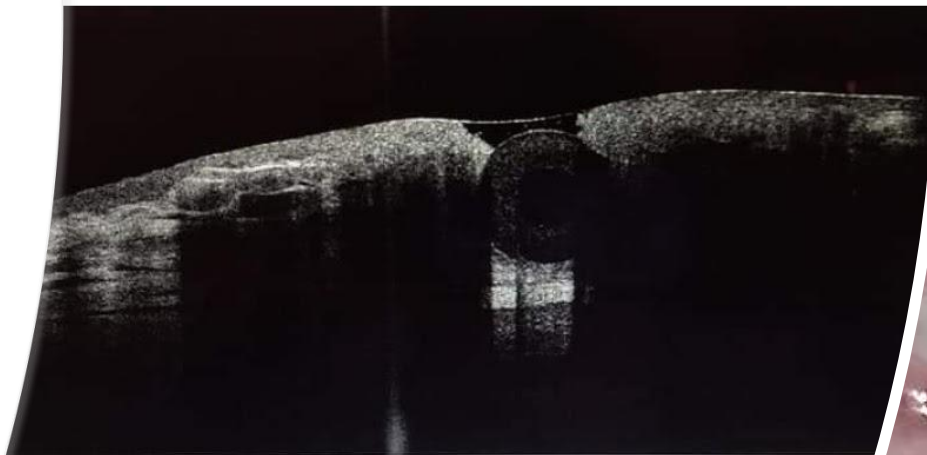
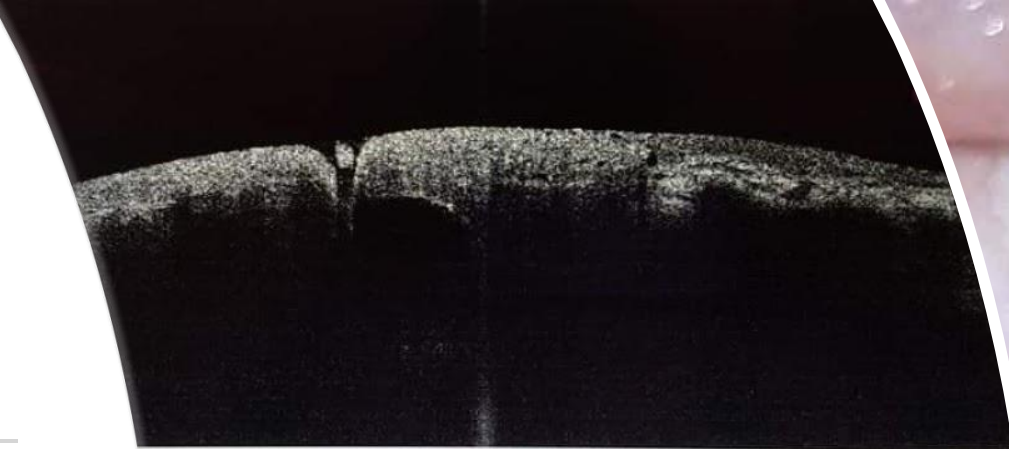






## Watch for Tube Compression

- Blanching over tube
- FL staining
- Holes on OCT
  - Transverse
  - Longitudinal
- Follow every 3 months



# Thank You

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