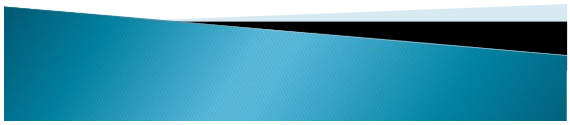
Postops Gone Wild!

Robert P. Wooldridge, OD, FAAO



1

Disclo$ure

- Speakers Bureau for Aerie, Avantis, Bausch & Lomb, Glaukos, Reichert

2

When things go bad

- When surgery goes well, postop care is easy! But…
- Surgery doesn't always go well and even when it does, some patients still develop postoperative problems

3

Postop Care of Cataract Patients

4

What can go wrong in first 1-2 days?

- Pain
- Loss of vision

5

Night of Surgery

- 76yo M calls at 9:00PM C/O severe pain in surgery eye

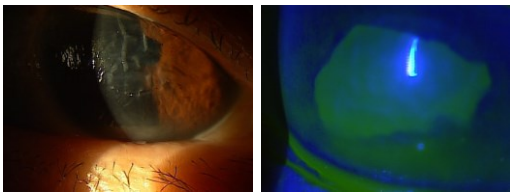
6

Causes of Postop Pain

- Days 0-1
  - Betadine wash during surgery
  - Punctate keratitis
  - Corneal abrasion
    - Lid speculum
  - Very high IOP
- Days 2-4
  - Cornea usually healed
  - Elevated IOP still possible but less likely
  - Endophthalmitis concern
    - Deep pain or FBS?
    - Loss of vision?
    - Are pain and LOV getting worse?

7

Corneal Abrasion



8

Abrasion/PEK Management

- Cycloplege!
- Bandage CL
- Maintain normal postop drops
  - Antibiotic, steroid, NSAID
- Tylenol/Ibuprofen

9

Post-op Vision Rule # 1

Always be able to account for the patient's VA!

10

Poor VA Day 1-2

- Corneal edema
- AC hemorrhage/cell/flare
- Refractive error/poor IOL Rx choice
- Pre-existing problem

11

Causes of Poor VA After Surgery

- Refraction
- Media Opacity
- Retinal Damage
  - Pre-existing
  - Acquired post op
- Optic Nerve damage
  - Pre-existing
  - Acquired post op
- Amblyopia-
  - Pre-existing

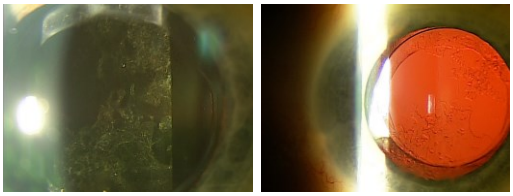
12

Posterior Capsule Opacification (PCO)

- Look AT and THROUGH Posterior Capsule
  - Gauge view of fundus
- Use retro illumination
- Test Contrast Sensitivity c/s glare
  - Also valuable for evaluating cataracts
- Vector Vision
- BAT
- M&S Screen

13

Posterior Capsule Opacity



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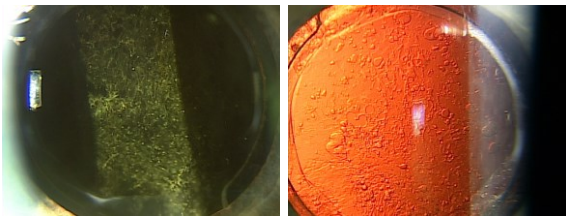
Posterior Capsule Opacification



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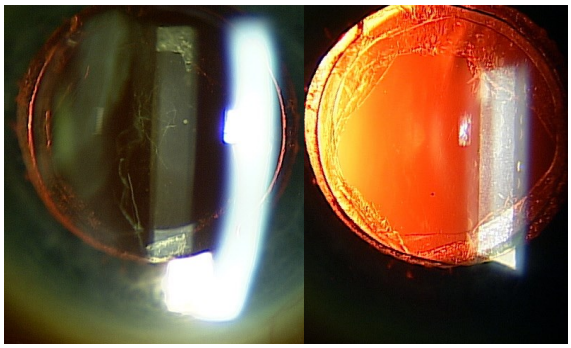
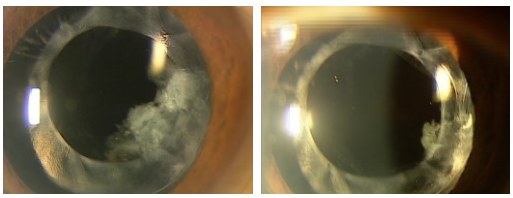


16

Elschnig Pearls Pre and post YAG



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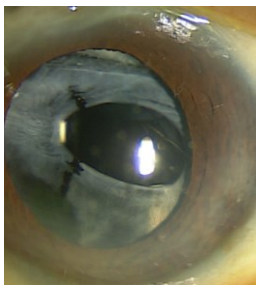
Capsular Phimosis

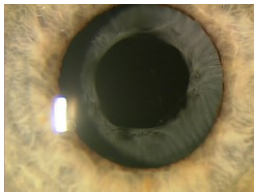
- AKA Anterior Capsule Contraction Syndrome[1]
- Contraction and fibrosis of the AC by metaplastic lens epithelial cells
- Risk factors
  - Small capsulorhexis
  - PXE, uveitis, etc
- Treatment
  - YAG Ant Capsulotomies
  - More effective if done sooner

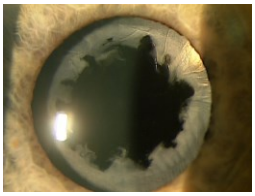


1.Davison, J. A. Capsule contraction syndrome. J. Cataract Refract. Surg. 19, 582–9 (1993)

18

Phimosis Pre and Post YAG





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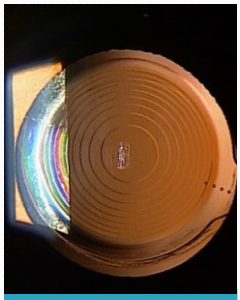
Residual Refractive Error

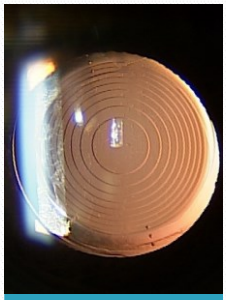
- Deferral of Toric IOL–residual astigmatism
- Inaccurate IOL power calculation
  - Inability to get good pre-op measurements
- Corneal edema/distortion
- Options for surgical correction
  - IOL exchange
  - Limbal Relaxing incision (LRI)
  - LASIK/PRK

20

Toric IOL Off axis



Before repositioning



After repositioning

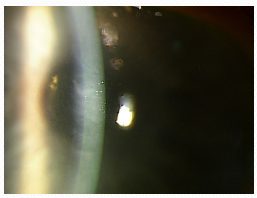
21

Corneal Edema

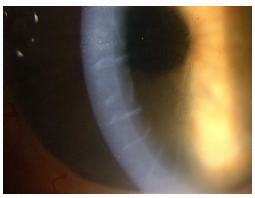
- Normal vs. abnormal levels
  - Epithelial v. stromal?
- Possible causes
  - Hard nucleus
  - Extended surgery time, intra-operative complications
  - Corneal guttata
  - Elevated IOP

22

Stromal Edema

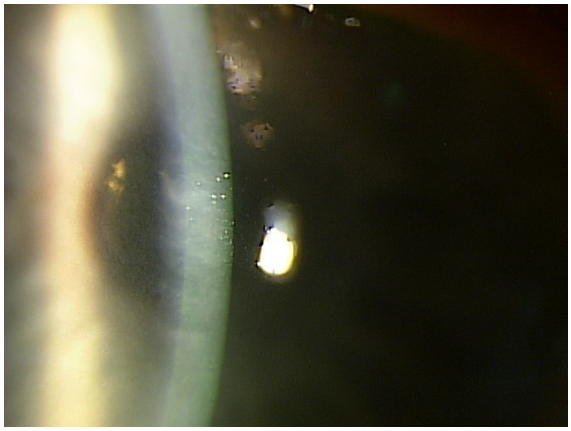


Endothelial folds



Thick stroma

23



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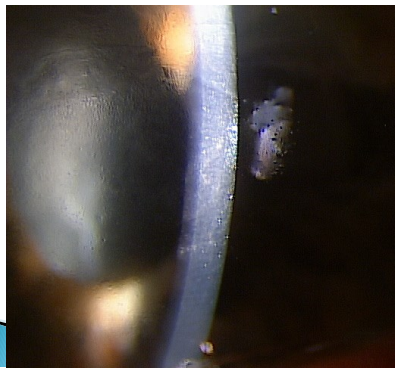
Microcystic Epithelial Edema (MCE)



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Corneal Edema Management

- Management
  - Dependent on cause
  - Increase steroid dosage
  - Tincture of time
  - Possible surgery later
  - If caused by elevated IOP in early postop period
    - Burp the wound

26

Elevated IOP-Possible Causes

- Early causes
  - Retained viscoelastic material
  - Inflammation
    - With/without retained lens material
  - Pre-existing glaucoma
- Late causes
  - Steroid response
  - Inflammation
    - With/without retained lens material

27

Elevated IOP Management

- Mild elevation-topical meds
- Severe elevation- Wound Burping

28

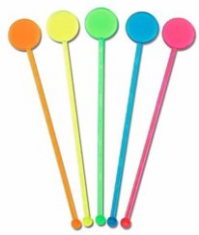
Burping the Wound

- Get consent
- Use Fluorescein
- Use sterile instruments
  - Punctal dilator
  - spactula
- Topical Ab
- Burp the PORT incision!!
  - NOT the primary temporal incision!
- Start slowly, CHECK IOP frequently!
- WATCH AC DEPTH
- If the AC is FLAT, you've gone too far!
- If the cornea is CONCAVE, you've gone too far!

29

Not Appropriate for Burping

- Needle/syringe
- Toothpick
- Swizzle stick
- Chop stick
- Plastic utensils
- Spork
- pencil



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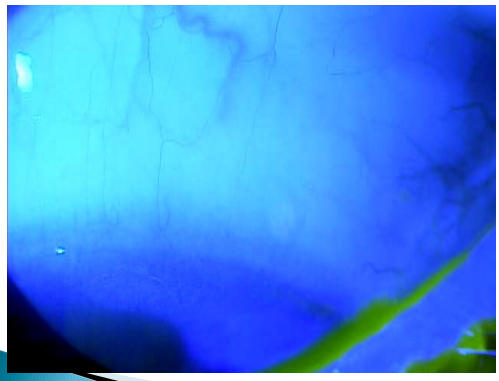

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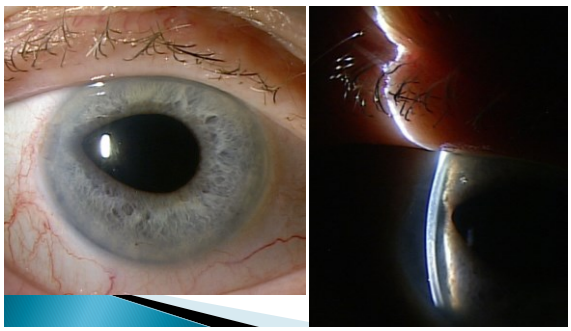
What happens when a patient burps his/her own wound?

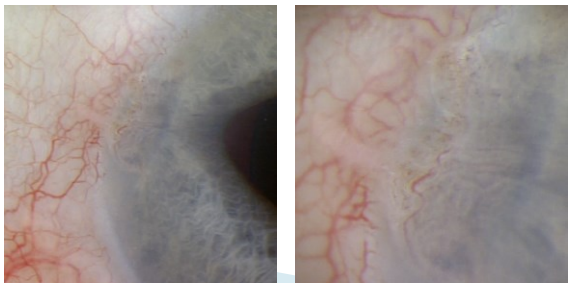
32

Peaked Pupil



33

Peaked Pupil



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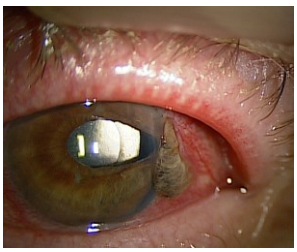
Lionel

- Returns from vacation
- Fell and struck LE 6 days ago
- No pain
- Only slight reduction
- in VA



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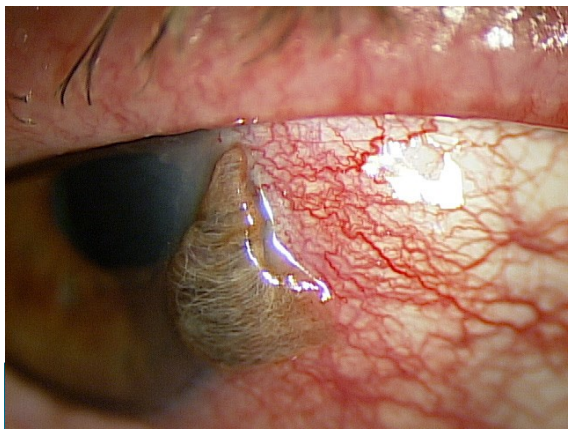

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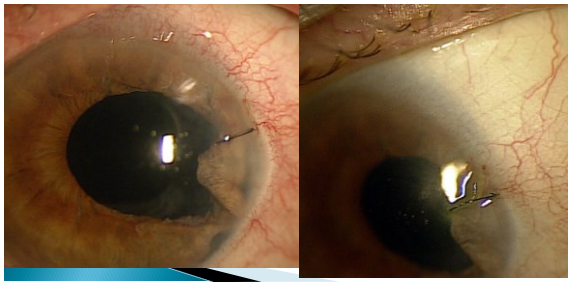
Post repair-Exposed suture



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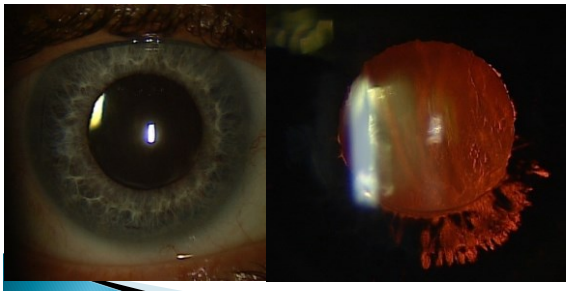
IOL haptic causing TID



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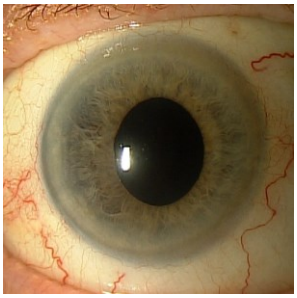
Waldo

- 73yo M monitored as pseudophakic glaucoma suspect
  - S/P PPV OU for retinal detachment
- Calls 9:00PM C/O sudden painless LOV OD
  - Cannot read but can count his fingers
- What to do?
  - Meet me at the office in 20 minutes
  - See me tomorrow AM
- Differential diagnosis?
  - Retinal detachment?
  - Vitreous hem?
  - CRVO?
  - CRAO?

39

Waldo

- VA
  - R CF L 20/70
- CVF FTHM OD
  - FTFC OS
- Clues:
- Negative APD OU
- Refraction
  - OD + 10.75+0.75x 103
  - 20/30



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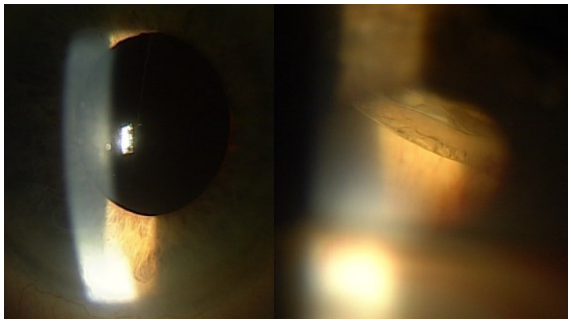
Where's Waldo's IOL?



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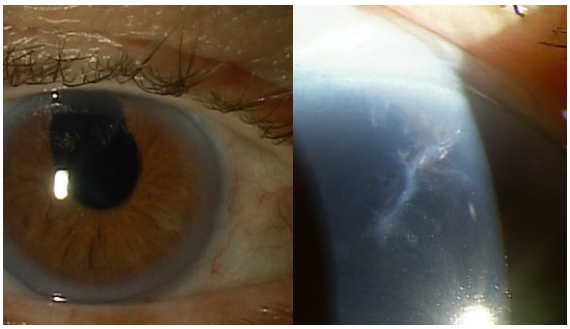
Randy Subluxed IOL after old penetrating injury



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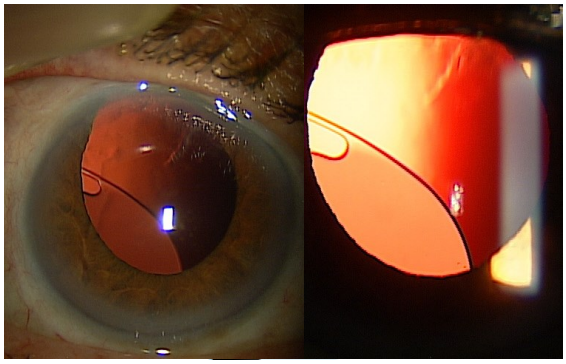
Peekaboo IOL



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Torn Posterior Capsule

- Causes
  - S—t happens
  - PXE–loose, fragile zonules
- Reposition in bag
  - With small tear

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IOL Repositioning Options

- Anterior Chamber IOL
- Iris sutured IOL
- Posterior sulcus
- Scleral sutured posterior chamber IOL
- Yamane technique
  - Intrascleral sutureless posterior chamber IOL[1]

1. Yamane S, Sato S, Maruyama-Inoue M, Kadonosono K. Flanged Intrascleral Intraocular Lens Fixation with Double-Needle Technique. Ophthalmology. 2017 Aug;124(8):1136-1142.

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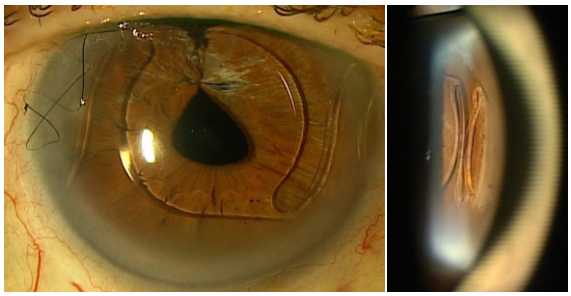
AC IOL with iris suture repair



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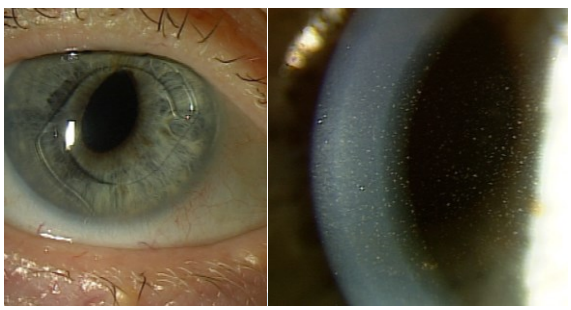
AC IOL



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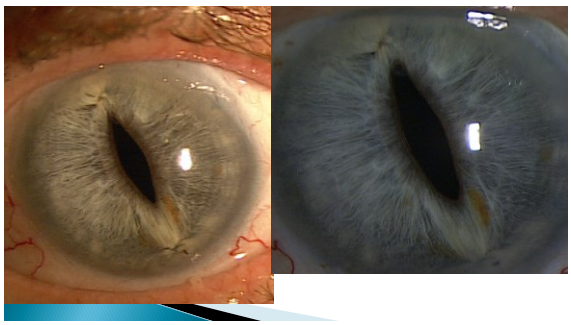
Iris-sutured IOL post-op



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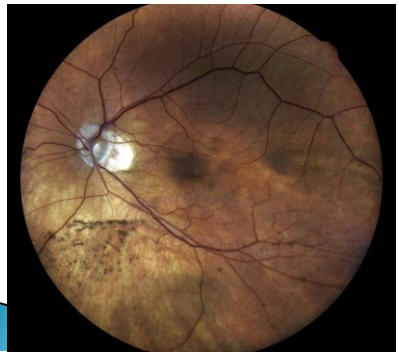
Ted Eidon Photo



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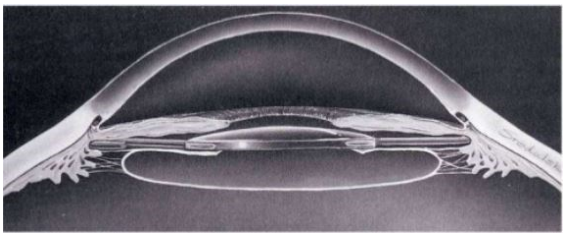
Sulcus Fixated IOL



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Shin Yamane, MD, PhD

- Department of Ophthalmology & Micro-technology Yokohama City University, Medical School, Yokohama, Japan

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Yamane Technique[1]

- Sutureless IOL fixation
- Haptics buried within sclera
- Requires specific IOL
  - C2 Lucia 602 Lens (Zeiss)
  - polyvinylidene fluoride (PVDF) haptics
- Thread haptics inside needle in AC
- Pull needle with haptics into sclera
- Cauterize haptic tip
- Bury haptic in sclera

1. Yamane S, Sato S, Maruyama-Inoue M, Kadonosono K. Flanged Intrascleral Intraocular Lens Fixation with Double-Needle Technique. Ophthalmology. 2017 Aug;124(8):1136-1142.

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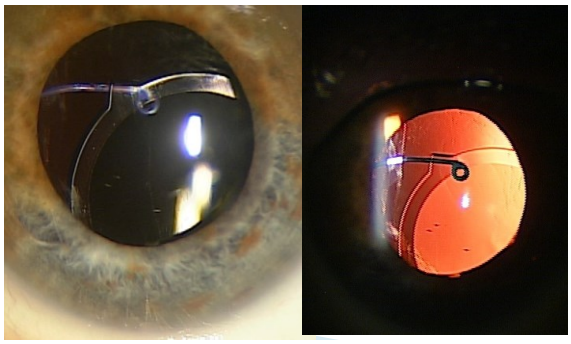
Subluxed IOL Repair



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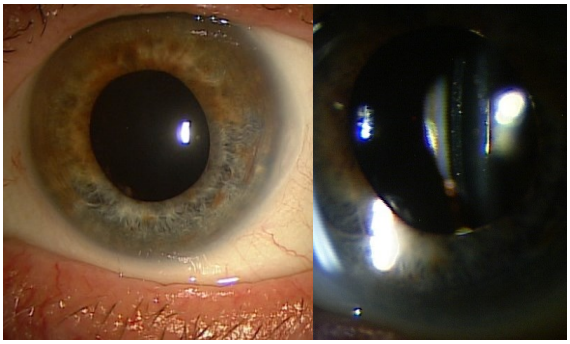
Post Repair 8/06/2019



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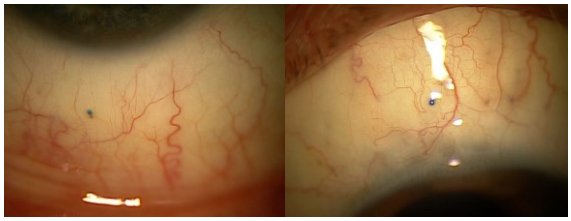
Yamane Technique: scleral-fixated haptics



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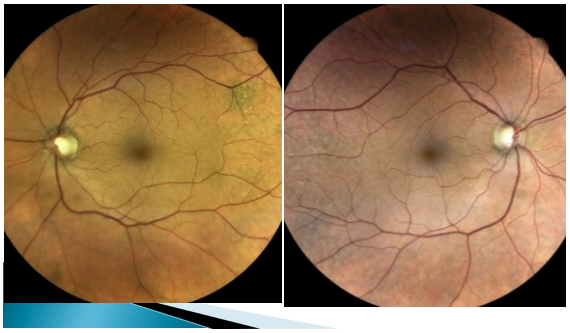
What's wrong with these pictures?



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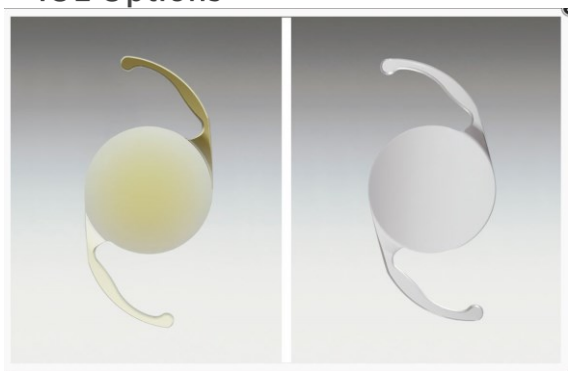
IOL Options



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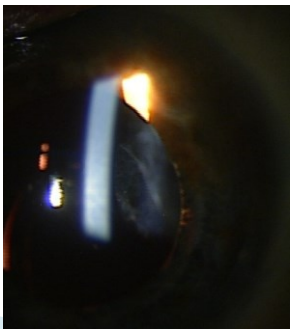
Vitreous Prolapse

- Accompanies torn posterior capsule and/or broken zonules
- Check for
  - vitreous to wound
  - Vitreous/corneal touch
- Treatment
  - Usually just monitor
  - (+/–) Anterior vitrectomy



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Retained Lens Material

- Where is it?
  - Ant chamber
  - Vitreous
- What is it?
  - Cortex or nucleus?
  - Cortex more easily resorbed
- Complications
  - Inflammation
  - Increased IOP
  - Corneal endothelium damage with nucleus in AC

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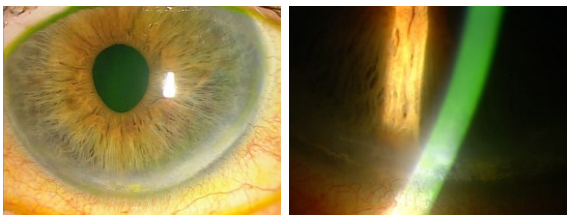
Ranae



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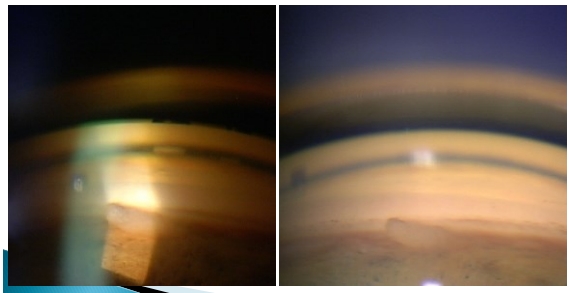
Ranae



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Marie

- 1 day post phaco/IOL
  - VA sc 20/50
  - 2+ Pek 3+ AC cells
  - IOP 42
  - Burped wound
- Day 2
  - VA 20/40- IOP 50; AC 1+ cells
  - Burped wound IOP 13
  - Add Travatan, Simbrinza
- Day 5
  - VA 20/30 IOP 40
  - Burped wound
  - DFE: reveals retained lens cortex
  - Surgical consult: removed retained cortex

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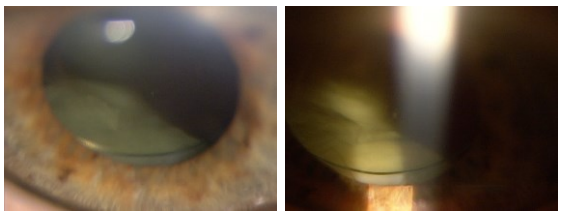
Fluffy Cortex posterior to IOL



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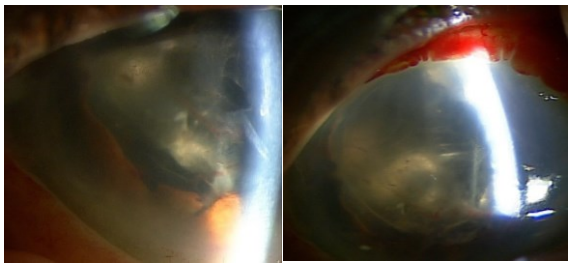
Retained Lens Material (Dora)



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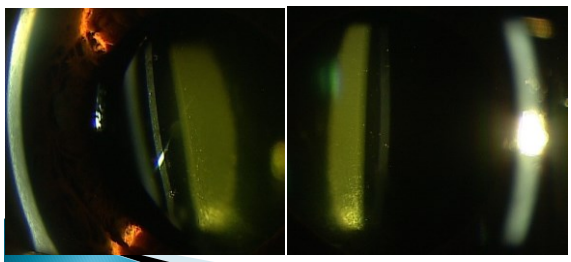
RLM-Treatment Options

- Consult surgeon
  - Send photos
- Manage inflammation
  - Durezol QID
- Manage IOP
  - Medicate as necessary
  - PGA not the first choice
- Surgical removal if necessary
  - Based on lens material, complications

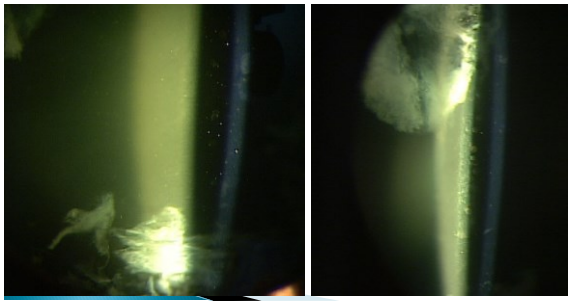
65

What's wrong with this IOL?



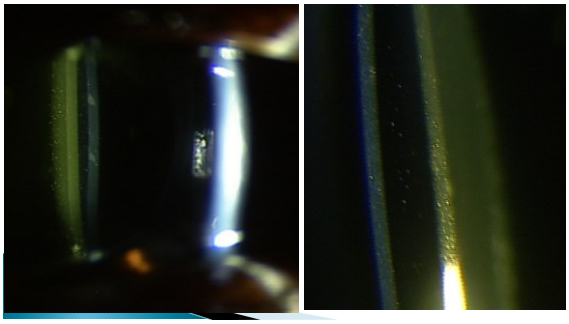
66

Alia OD



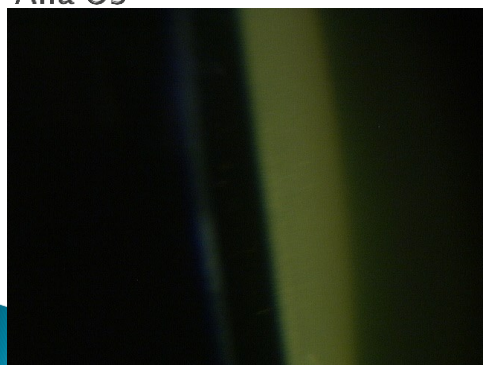
67

Alia OS



68

Alia OS



69

Alia Post YAG OU

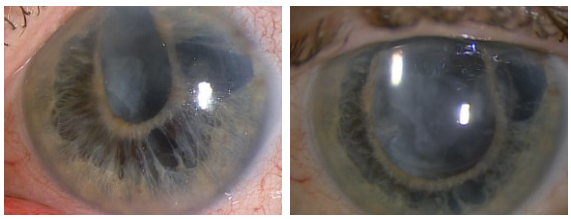
70

Larry

- Phaco/IOL 4/27/17
  - Post cap tear during surgery
  - Iris damage
  - Monitored by MD until 5/5/17
  - Referred to retinal specialist
- Sees me 5/15/17
  - VA 20/400 IOP 53
  - Azopt, Combigan, Diamox administered in-office
  - Referred for surgical repair

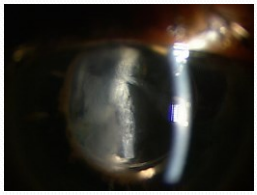
71

Larry



72

Larry

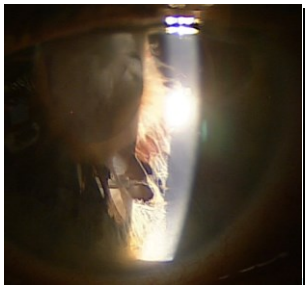


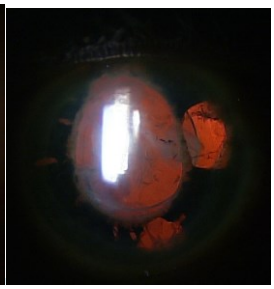
Retained lens material

MCE due to high IOP

73

Iris Trauma





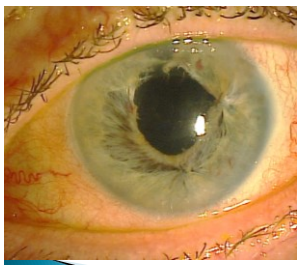
74

Surgical Repair

- Vitreoretinal surgeon
  - Pars plans vitrectomy
  - Removal of retained lens material in vitreous and posterior capsule
- Anterior segment surgeon
- Positioned IOL
- Removed lens material in AC
- Sutured iris

75

Larry Post Repair



- VA 20/20
- Persistently elevated IOP
- Managed with topical meds
- Quiet eye

76

Iris Damage

- Mild, moderate or severe
  - Mild–common, inconsequential
  - Moderate–probably no treatment necessary
  - Severe–Mgt dependent on symptoms
- Options for management
  - Nothing
  - Reposition IOL if necessary
  - Iris suture if severe
  - Artificial iris?

77

Intraoperative Floppy Iris Syndrome (IFIS)

- Small pupil syndrome initially described by Chang and Campbell in 2005
- Triad of
  - floppiness or billowing of the iris,
  - progressive intraoperative miosis and
  - iris prolapse through the surgical wounds
- Occurs in about 2% of cataract surgeries in the US
- Can occur in men OR WOMEN
- HTN is an independent risk factor

1.Enright J et al Curr Opin Ophthalmol 2017, 28:29–34
2. Chang DF, Campbell JR. J Cat Ref Surg 2005; 31:664–673.

78

Complications

- Short-term complications
  - Increased rates of posterior capsule rupture, vitreous loss, retained nuclear fragments, postoperative intraocular pressure spikes, iridodialysis, hyphema, and corneal endothelial loss
- Long-term consequences
  - permanent pupil deformity, and vision loss secondary to endophthalmitis, macular edema, or retinal detachment.

79

Alpha-1 antagonists

- tamsulosin (Flomax and Jalyn),
- silodosin (Rapaflo),
- alfuzosin (Uroxatral),
- doxazosin (Cardura)
- terazosin (Hytrin)
- prazosin (Minipress)
- Notably, gender, race, and diabetes are not independent risk factors for IFIS.

80

Agents with possible association

- Neuromodulators
  - benzodiazepines,
  - duloxetine (Cymbalta, a serotonin-norepinephrine reuptake inhibitor [SNRI])
  - donepezil (Aricept, acetocholinesterase inhibitor)
- Other agents
  - finasteride (Propecia, 5a-reductase inhibitor)
  - beta blockers labetalol and carvedilol

81

IFIS in Women

- Tamsulosin used for chronic urinary retention and off-label to facilitate passage of urinary stones in both men and women
- IFIS has been associated with antipsychotic medications and hypertension, which may affect either gender.

82

IFIS Pre-operative Management

- Male and female patients should be asked about current or prior use of a1-antagonists, particularly tamsulosin (Flomax, Jalyn), but also alfuzosin (Uroxatral), doxazosin (Cardura), terazosin (Hytrin), and prazosin (Minipress)
- Antipsychotics with a1- antagonist activity, including chlorpromazine (Thorazine), zuclopenthixol (Clopixol), and quetiapine (Seroquel)
- **Discontinuing tamsulosin does not reduce the risk of IFIS!**
  - **No need to discontinue it**

83

Pre-operative Management

- Poor preoperative dilation is associated with IFIS and should be noted,
  - although IFIS can occur in the setting of normal preoperative dilation.
- Atropine 1% TID x 2 days prior to surgery
  - *May* help decrease intra-operative miosis

84

Intra-operative Management

- Intracameral epinephrine and phenylephrine reduce iris floppiness and promote pupillary dilation
- Ophthalmic viscosurgical devices
  - Healon, Viscoat, etc
- Iris retractors and pupil expanders

85

Post-operative Management

- Depends on postop complications
- Combination agents for increased IOP
  - Acetazolamide short-term if necessary
  - Avoid prostaglandins if possible
- Avoid burping wound!
- Increase steroid for inflammation
- Shield while sleeping
- Avoid pressing on eye

86

Endophthalmitis Stats[1]

- Systematic English literature review 1963-2003
- Overall incidence 0.128%
- Increasing since 2000
  - 1970's: 0.327%
  - 1980's: 0.158%
  - 1990's: 0.087%
  - 2000-2003: 0.265%
- Incision type has impact
  - clear corneal cataract extraction (1992- 2003) 0.189%
  - scleral incision 0.074% (relative risk, 2.55 [95% confidence interval, 1.75-3.71])
  - Limbal incision: 0.062% (relative risk, 3.06 [95% confidence interval, 2.48-3.76]) for limbal incision.

1.Mehran T; Behrens A; Newcomb R Arch Ophthalmol. 2005;123:613-620

87

Bascom Palmer Experience 2000-2004

- Incidence:0.04% (7/15,920) for cataract surgeries of all methods,
- Clear cornea 0.05% (6/11,462)
- cataract surgery by methods other than clear cornea 0.02% (1/4,458)
  - (P = .681, Fisher's exact test).
- Potential risk factors for endophthalmitis may include intraoperative complications, relative immune compromise, application of lidocaine 2% gel before povidone-iodine preparation, and inferior incision location

AJO 2005 139:6, 983-987

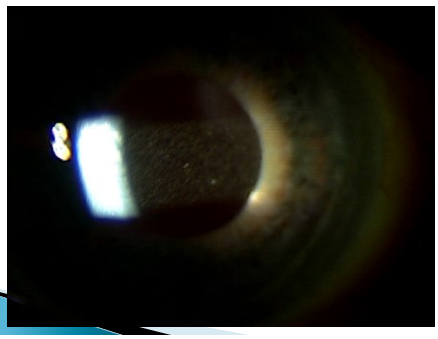
88

Endophthalmitis

- Timing
  - Day 2-4 post op
  - Later onset possible
- Signs/Symptoms
  - Decreased VA
  - Pain
  - Redness
  - Increasing symptoms post surgery
  - Increasing/severe AC cells/flare
  - Vitreous cells
    - Examination of vitreous

89

AC 4+ Cells 2+ Flare



90

Management

- Immediate call to phaco surgeon and referral to retinal specialist
- Likely vitreous tap with culture
- Intravitreal injection antibiotics
- Possible vitrectomy with AB's

91

What have we learned?

- Myriad of possible postop. complications
  - Mild, moderate, severe
- We can handle many of them
- Careful observation/frequent FU is critical with potentially serious findings
- Good communication is key
  - With patients
  - With surgeons
- Always tell patient "If you have any problems, like increasing pain or loss of vision, call us right away."
- BE AVAILABLE TO OUR PATIENTS 24/7

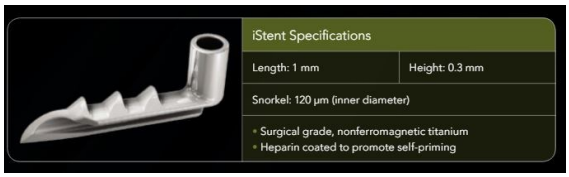
92

MIGS

- iStent
- iStent Inject
- Cypass
- Hydrus Stent
- Xen
- Goniotomy
  - Trabectome
  - Kahook Dual Blade (KDB)

93

Specifications



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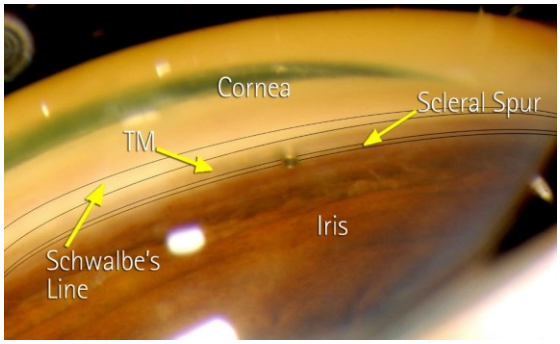


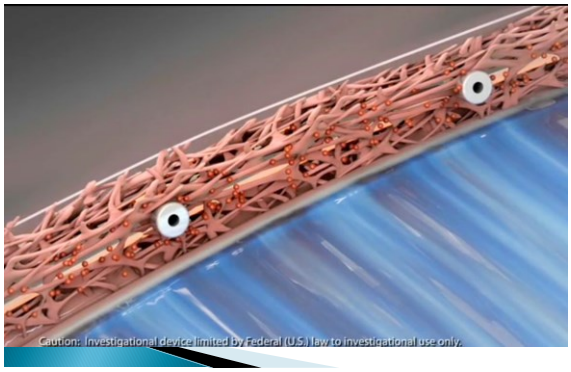
95

iStent Inject

iStent in injector

96

iStent Injectss in position



97

iStent Pre-op Care

- Review risks and benefits of possible medical and surgical treatment options
- Do NOT promise that the patient will be able to stop some or all of their glaucoma medications
- Continue current glaucoma medications through day of surgery
- Confirm patient's VF, ONP and OCT are up to date
- Gonioscopy – evaluating for synechia, iris processes, narrow anatomical angles, angle recession or any other abnormalities of the angle structure that may interfere with placement of the iStent

98

iStent Post-operative Care

- Use normal postoperative medications
  - Antibiotic, steroid, NSAID of choice
- Continue current glaucoma medications
- Watch for IOP rise related to steroid response
- Evaluate IOP in context of target IOP
  - Degree of damage, patient age, likelihood of progression
- If indicated, decrease medical treatment in stepwise fashion
- Perform gonioscopy to confirm iStent position

99

Post-op Complications

- Mildly increased AC reaction one Day 1
  - Expected; usually no treatment indicated
- Hyphema
  - Occasionally happens
  - Usually no treatment necessary
- Elevated IOP
  - Maintain preop glaucoma medications
  - Add meds as indicated
- Poor placement of iStent
  - Need to do gonioscopy to confirm!

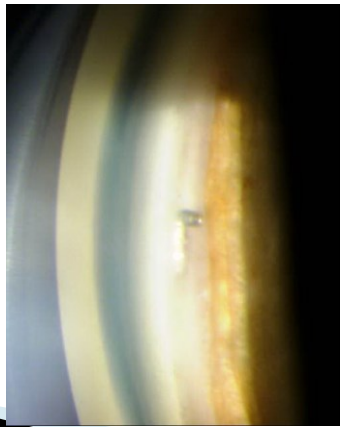
100

iStent Positioning

- Some iStents you can see externally
- Some you can't
- Gonioscopy necessary to judge positioning
  - Not necessary immediately unless obvious problem exists
  - 1 week-1 month

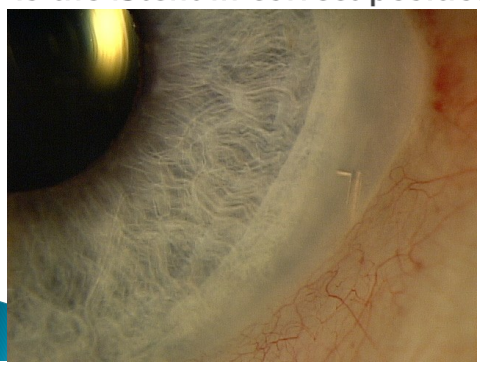
101

Good Placement



102

Is the iStent in correct position?



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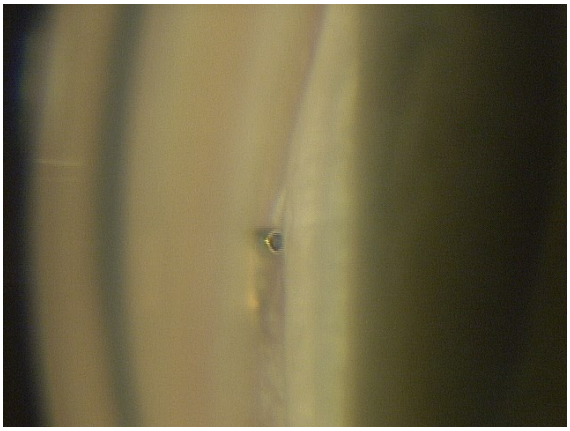
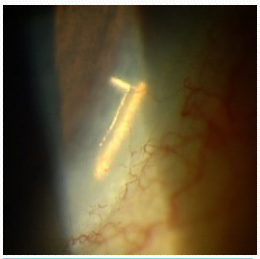
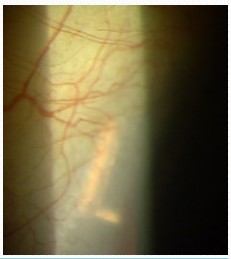


104

Erma



OD

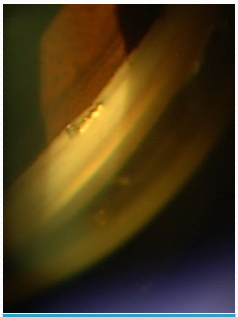


OS

105

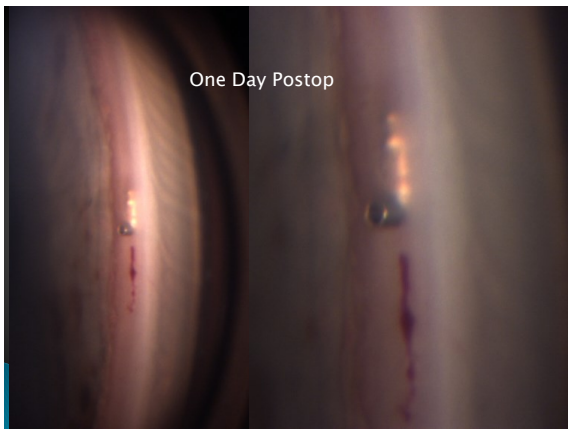
Erma Gonioscopy

OD



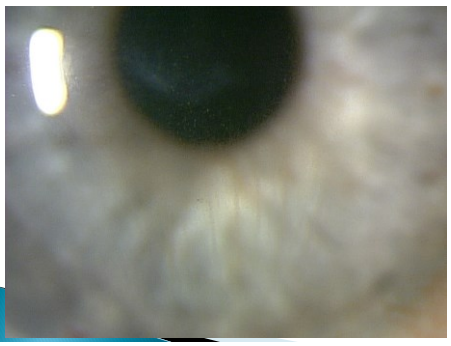
OS

106



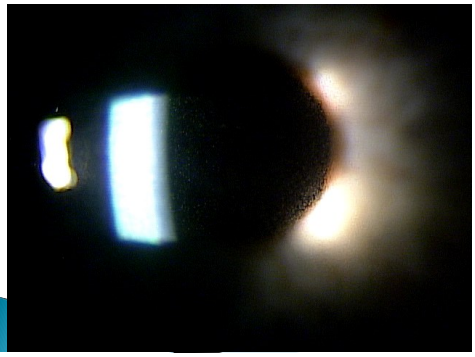
107

AC hemorrhage



108

AC Hemorrhage

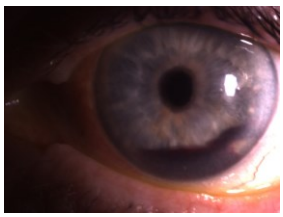


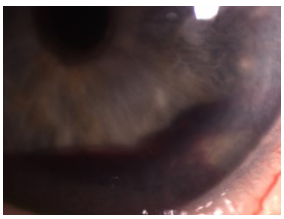
109

Blood in Inferior Angle

110

Hyphema: one week postop





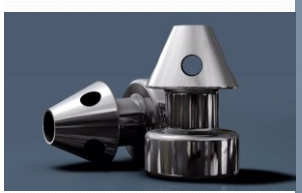
111

Big Hems, Little Hems, Hems that Fill the Chamber

- Mild AC hems common within first week postop
  - Usually do not require intervention
- Moderate hems usually clear spontaneously
  - Usually do not require intervention
- Severe hems
  - Watch IOP
  - Surgical consult with severe hem and very high IOP
- Ask patient about anticoagulants

112

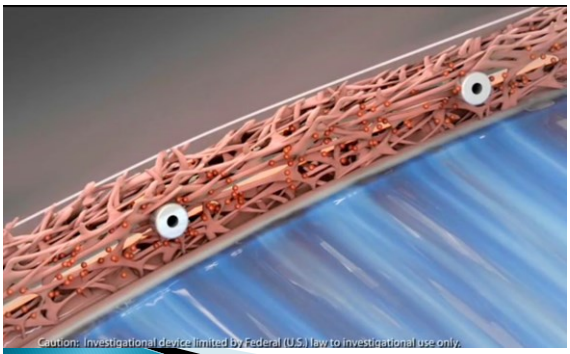
iStent 2



iStent in injector

113

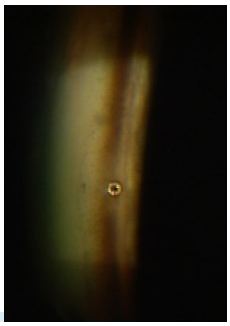
2 iStents in position



114

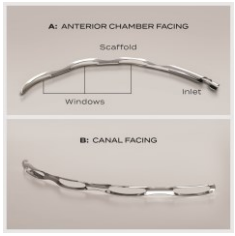
iStent Inject Postop Problems

- Same potential complications as iStent
- TWO stents



115

Hydrus® Microstent

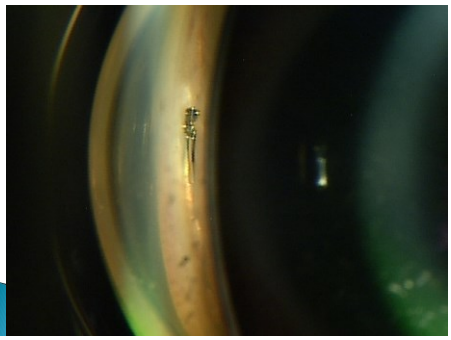


Hydrus is a registered trademark of Ivantis, Inc.

- Flexible, 8 mm
- Nitinol (highly biocompatible material used in cardiovascular stents)
- Contoured to match canal curvature
- Three open windows face anterior chamber
- The canal-facing surface is completely open for unobstructed collector channel access

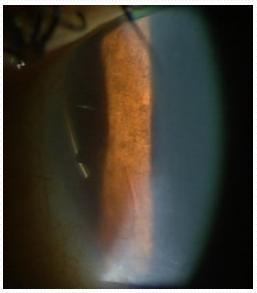
116

Good Insertion

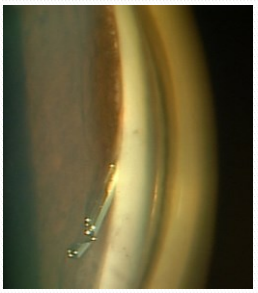


117

Partial Insertion



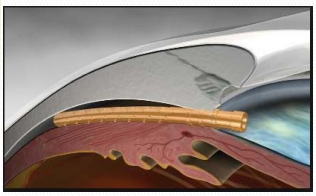
External View



Gonio View

118

Cypass Shunt

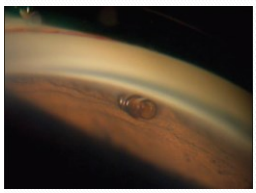


Approved for use in conjunction with cataract surgery

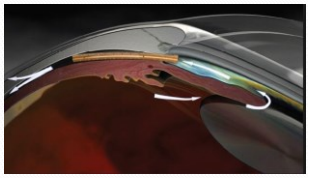
Supra-ciliary Space

119

Cypass Aqueous Flow



Cypass in position



Aqueous Flow

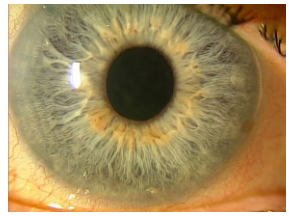
120

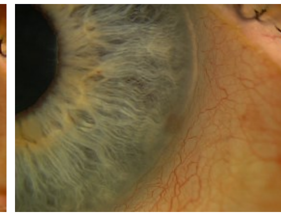
Kathy

- 1 Day postop still on Travatan,Tim,Azopt
  - VA sc 20/40 IOP 04
  - D/C Travatan and Azopt
- 1 Week postop.
  - VA sc 20/30 IOP 06
  - D/C Timolol
- 1 month postop.
  - VA 20/30 IOP 07 (on no glaucoma meds.)
- 2 months postop.
  - VA cc 20/15 with +0.50DS
  - IOP 12

121

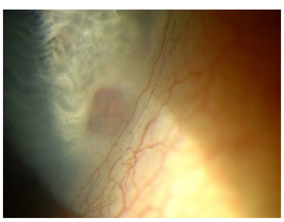
2/07/18 1 Week Postop.

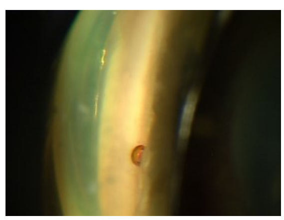




122

2/07/18 1 Week Postop.





123

Cypass Complications

- Stent placement
- Early hypotony
  - Decrease glaucoma meds as necessary
  - Monitor weekly?
- IOP spike
  - It happens
  - Manage aggressively-Diamox if necessary
- Corneal endothelial loss
  - Compass-XT Study

124

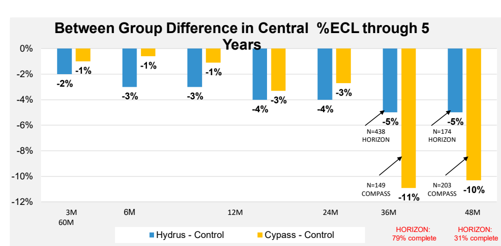
Compass-XT Trial

- At 5-year FU, 27.2 % (44/162) of implanted patients had more than 30% loss in endothelial cell density (ECD).
- Cell loss corelates with the amount the CyPass extends into the AC as assessed by the number of retention rings visible
- Mean endothelial cell loss (ECL) over years 2-5
  - 0 rings visible (55 patients): 3.1%
  - 1 ring visible (65 patients) 8.4%,
  - 2 rings visible (26 patients) 21.0%
  - 3 rings visible (eight patients)31.4%
- The 5-year endothelial cell loss data suggest that the general rate of cell loss does not plateau at 5 years post-implant.

Reiss G Clifford B et al AJO 2019 Dec;208:219-225.

125

Hydrus[1] vs. CyPass[2]: Difference in ECL



1. Data on file – Ivantis, Inc.
2. Lane S. Overview of the results from the 5 yr follow up study of the CyPass ® MicroStent. https://drive.google.com/file/d/1jl1JhJjHXNnYXwJ8BCPb4xNIlsZDtxJ5/view. ESCRS. September 2018.

126

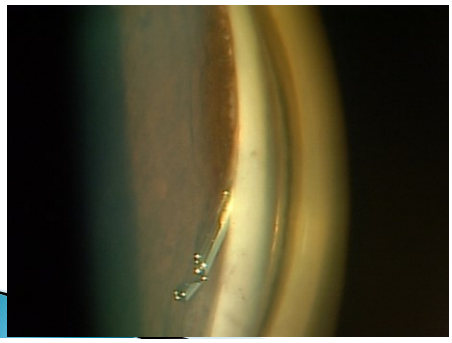
FDA Recommendations

- All patients that have the CyPass device should be evaluated periodically for ECD using specular microscopy until the rate of loss stabilizes.
- Eye care providers should evaluate all patients with CyPass to assess device positioning by visualization of the number of retention rings visible on the proximal end of the device.
- Patients with two or more rings visible upon examination should be evaluated for ECL ASAP.
- Based on the ECD levels, and other factors such as age and time post-implantation, the surgeon should determine if additional surgical interventions (that is, trimming, repositioning, removal) are appropriate.

Alcon letter Sep. 18, 2018

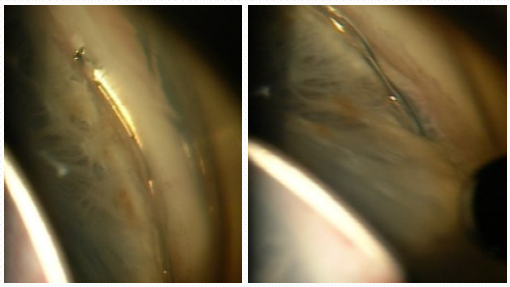
127

Hydrus Stent: Short Sheeted



128

A Stent Too Far



Trailing end looks OK | Leading edge

129

XEN® Gel Stent

Innovative approach

- Requires a small corneal incision[1]
- The first ab-interno approach to create a new pathway for aqueous flow from the anterior chamber to the subconjunctival space in refractory glaucoma patients[1]
- XEN® is the first procedure that creates a low-lying, ab-interno bleb in refractory glaucoma[2]

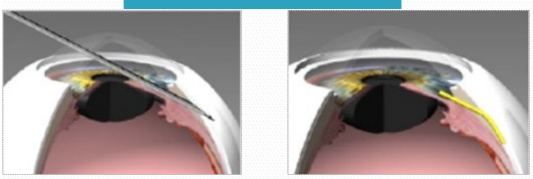
Gel stent design

- 6-mm length, 45-micron lumen diameter[1] —about the length of an eyelash[3]
- Gelatin, cross-linked with glutaraldehyde[1]
- Hydrates and minimally swells, softens, and becomes flexible after implantation[1]
- Preloaded, disposable injector[1] with a 27-gauge, double-beveled needle[2,4,5]

130

Xen Gel Stent

Minimally Invasive
Inserted using the XEN® Injector via an ab-interno approach, through a small corneal incision.[1]



In the clinical investigation, standard ophthalmic surgery techniques, viscoelastic, and mitomycin C (0.2 mg/mL) were used before injection.[1]

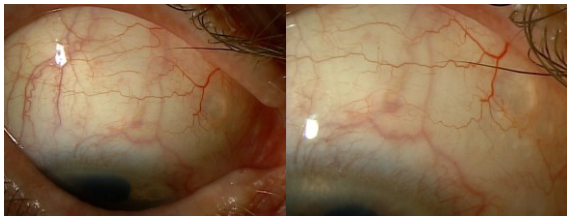
131

Xen Complications

- Hypotony
- Bleb scarring
  - Needling of bleb
  - 5FU/Mitomycin injection
- Blebitis
- Endophthalmitis

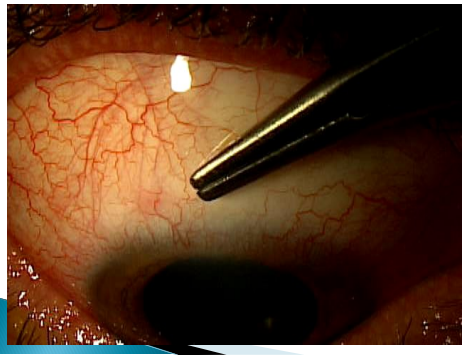
132

Quiet Xen Bleb



133

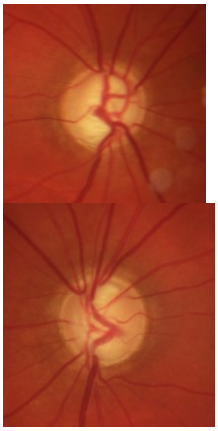
Xen Tube Manipulation



134

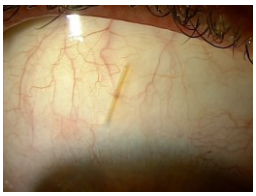
Troy

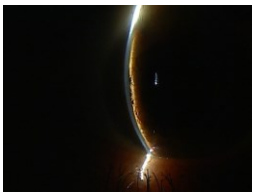
- 52yo M S/P Xen OD
- IOP running 05-07 > 1 year



135

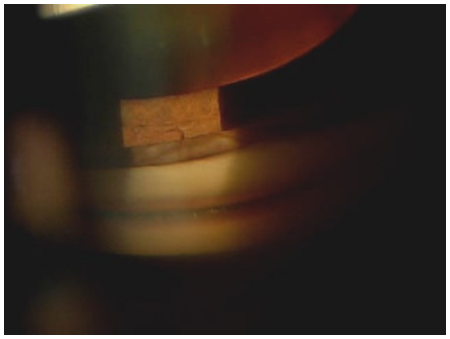
Troy S/P Xen





136

Dialysis Cleft video

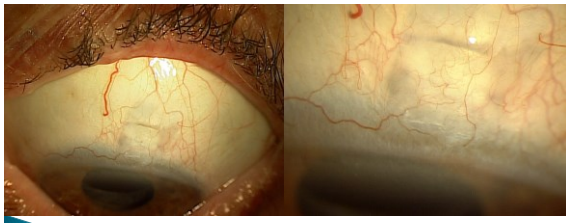


137

Trabeculectomy Complications

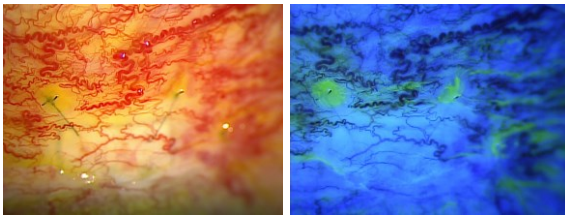
138

Quiet functioning bleb



139

Exposed Scleral Flap Sutures



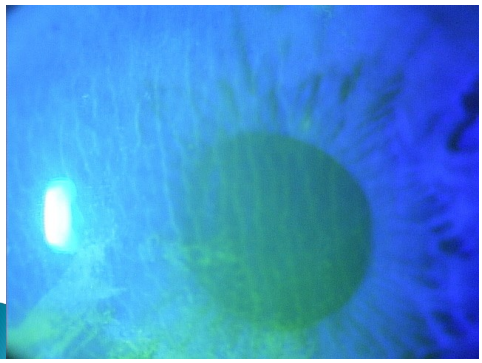
140

Goldielocks Scenario

- Filtering too much!
  - Leaking incision
  - Button hole leak
  - Bleb dissection (360 bleb)
- Filtering too little!
  - Scleral flap tied too tight
  - Scleral flap scarred down
  - Conj. bleb scarring down
  - Internal sclerostomy closed

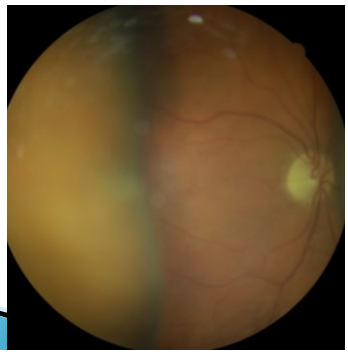
141

Epithelial Folds due to Hypotony



142

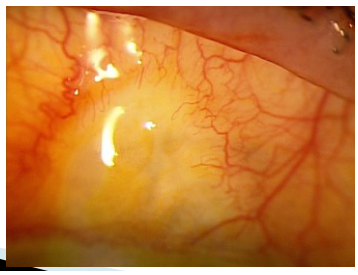
Choroidal Detachment



143

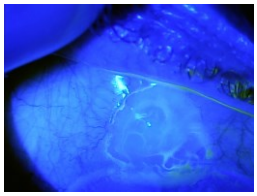
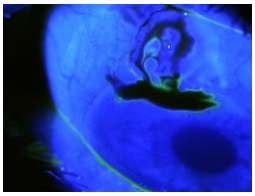
Carol

- Chronically leaky bleb
- IOP 12-20 despite leak
- Treated with
  - BCL
  - Prokera amniotic membrane
  - BCL with dry A. M.



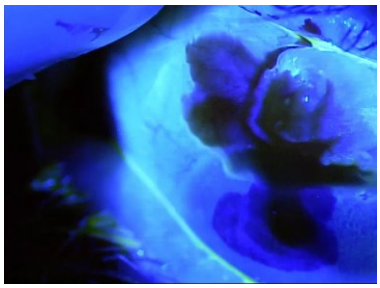
144

Carol W

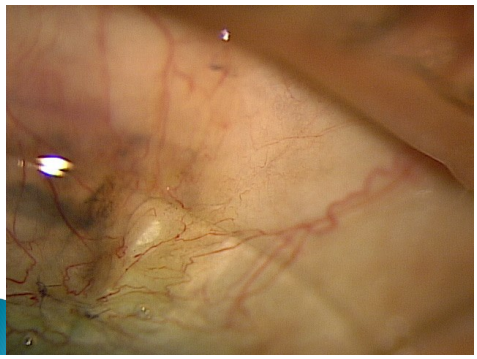
145

Carol W Video



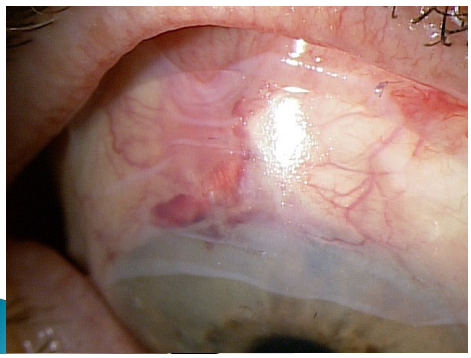
146

Tiny Hole with BCL



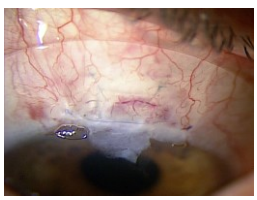
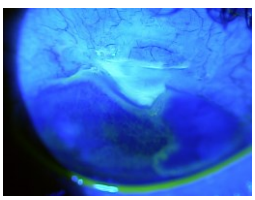
147

BCL with Amniotic Membrane



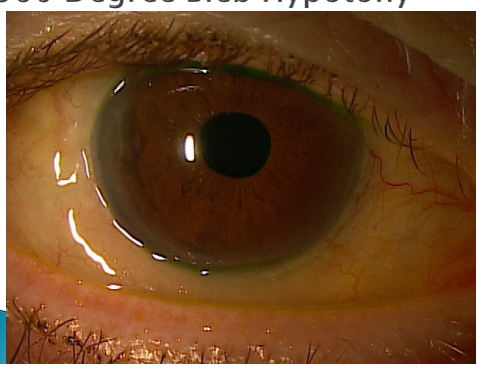
148

Blake Post Amniotic membrane

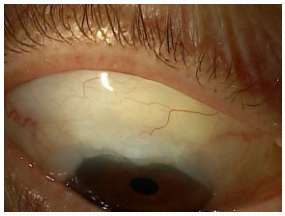
149

360 Degree Bleb Hypotony

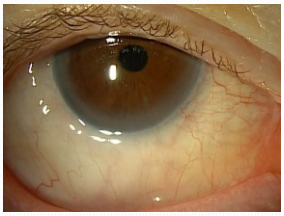


150

Dissecting bleb with hypotony



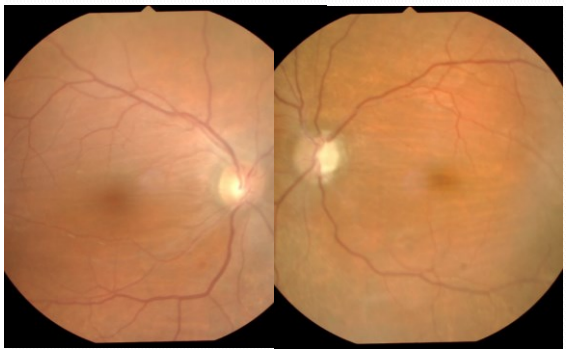
Superior



Inferior

151

Choroidal Folds Deonne



152

Elevated IOP Postop

- Filtering too little!
  - Scleral flap tied too tight
  - Scleral flap scarred down
  - Conj. bleb scarring down
  - Internal sclerostomy closed

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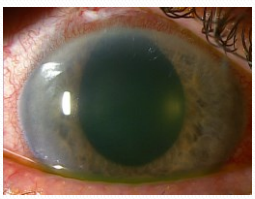
Management of Flat Bleb With High IOP

- Treatment based on cause and time frame
- Fist week postop
  - Scleral flap tied too tight-suture lysis when safe
  - Conj. bleb sticking down-bleb massage
- One Week-Two months
  - Scleral flap scarring down-burp flap/suture lysis
  - Conj. Flap scarring down-5-FU injection
    - +/- needling
    - Maintain steroid dosage
  - Internal sclerostomy closed-YAG opening?

154

Mark 1 week PO OD

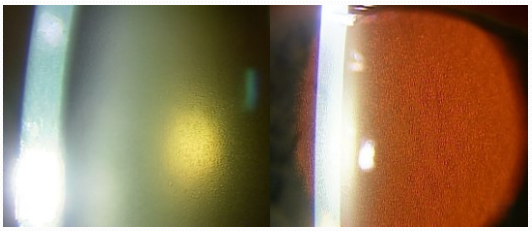
VA 20/80



IOP 42

155

Microcystic Corneal Edema

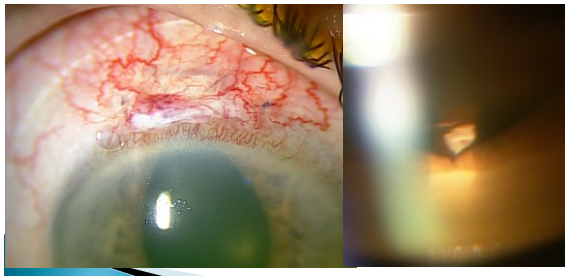


VA 20/80

IOP 42

156

Mark 1 Week Postop OD



157

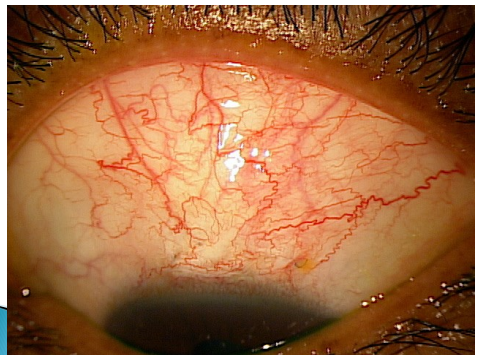
Mark 1 Week Postop OS

VA sc 20/50

IOP 16

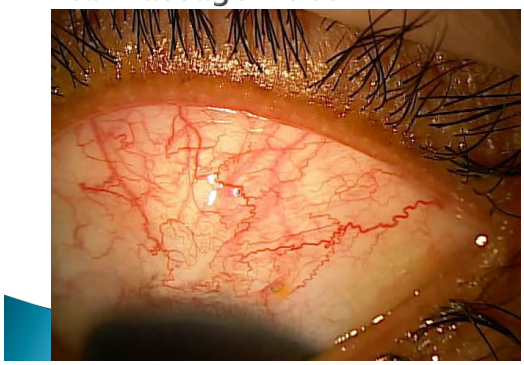
158

Flat Bleb



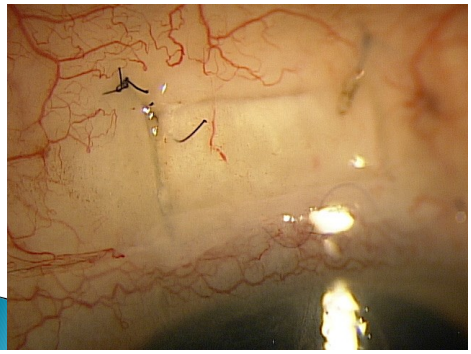
159

Bleb Massage video

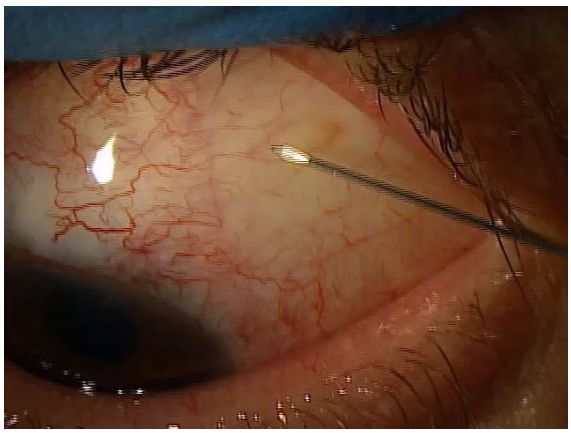


160

Suture Lysis

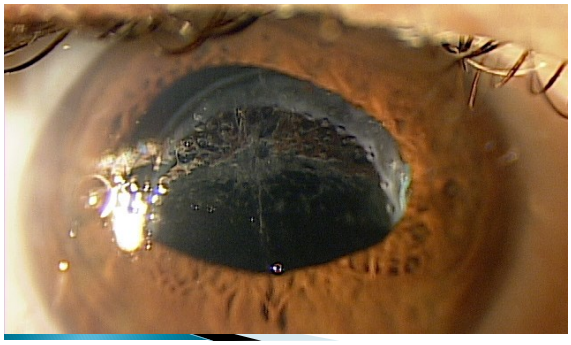


161



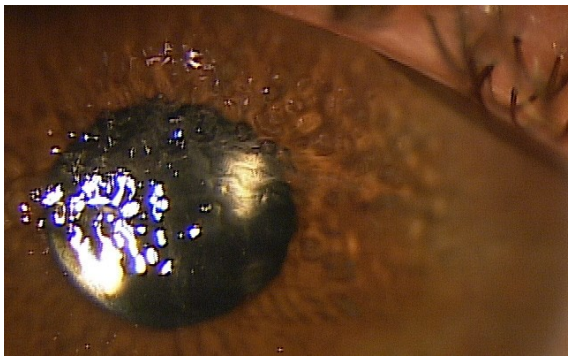
162

5-FU Keratopathy



163

5-FU Keratopathy



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Remember…

- Practice to your level of competence and comfort
- Don't hesitate to call surgeon for help
- Always tell patient "If you have any problems, like increasing pain or loss of vision, call us right away."

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