The surgery was complicated….
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Surgical Complications
How we deal with complications determines
Risk of additional surgery
Risk of severe complications
Risk of vision loss
Our confidence/mental health
Our ability to help patients
Risk of lawsuits
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Happens to all of us

- If you don't have any complications you have not operated enough…..
- For cataract surgery the risk of intraoperative complications ranges from 0.1% to 5%
- For glaucoma surgeries – 5-15% reported complications during GDI or even MIGS surgery
- For retina surgery, there are no unexpected complications, everything is expected…..
- Really its 1-5%

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In this lecture

- Discuss management for complications that are vision threatening
- How to optimize the care of these patients postoperatively
- Show some cases/videos

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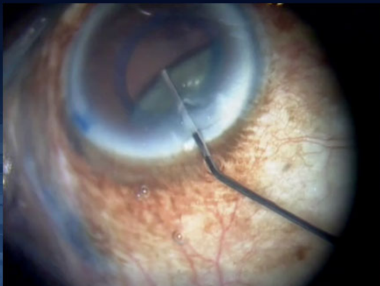
How do we handle this…



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Your next step

- A. Stare at the floor and ponder your choices in life
- B. Ask the scrub why they handed you the wrong instrument
- C. Ask the patient why they moved during a critical portion
- D. Breath, fill with viscoelastic, check for vitreous loss and decide on sulcus IOL
- E. Breath, fill with viscoelastic, check for vitreous loss and try to float the lens

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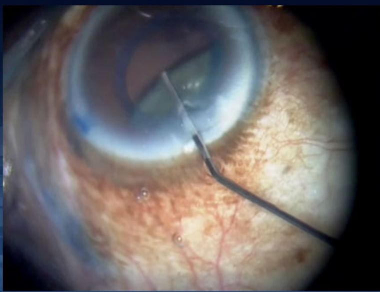
Lets see…



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When there is vitreous loss

- Lots of comments and techniques on what you should do next
- Vitreous loss increases risk of retinal detachment, CME, IOL dislocation
- Some of these things are exacerbated by manipulating the vitreous without cutting it.
- Retina colleagues constantly manipulate the vitreous, but we are cutting it and then we look at the retina afterwards to see if we caused any breaks.
- Your retina colleagues can and will help you, so try not to do something that can make things worse

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I am not the cataract coach

- Goals when the bag breaks, vitreous loss, lens drops
- ***Minimize vitreous manipulation without cutting***
- ***Keep lens material from migrating posteriorly and safely remove accessible fragments***
- ***Place a stable IOL***
- When you identify vitreous loss/posterior capsular rupture, stop, stay stable in the eye, fill with viscoelastic. Push vitreous back, lens material forward, sweep vitreous away from your instrument.

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Decision time

- What are you comfortable doing?
- What have you done before?
- Do you have the proper instruments?
- Do you know the settings?
- How is the patient doing and how is your anesthesia?
- Pain, plus vitreous loss, with an open wound is high risk for posterior pressure and choroidals.

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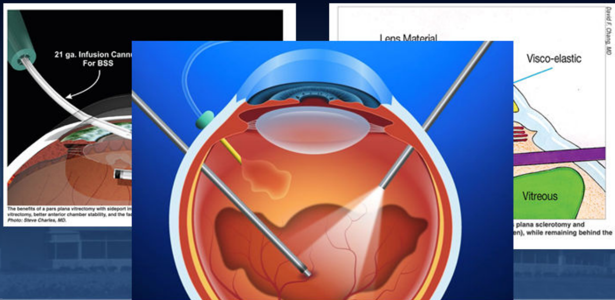
These photos in Review of Ophthalmology forget something….



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My pearls for vitrectomy for the anterior segment surgeon

- If you are sending this patient to a retina colleague, they can and will take care of anything you can not take care of and in a much more controlled setting (better anesthesia)
- I recommend most ant segment surgeons to do limbal based vitrectomy. Close your main wound, create a second paracentesis wound. Separate irrigation and the cutter. If you are comfortable, pars plana based vitrectomy is reasonable.
- Inject triamcinolone to stain. You will have to restain multiple times. CUT/I/A setting (you want to cut first then aspirate). High cut rate, low aspiration, keep IOP as normal as possible.

How do I get the lens pieces?

- Once vitreous free from lens pieces, you can then attempt with the cutter – switch to I/A/CUT and back to CUT/I/A when more vitreous eventually comes.
- Get what you can safely and if you cant get them all, remove as much vitreous as possible.
- IOL decision is based on capsular bag status, vitreous status, how much residual lens material is there.
- When you are finished – suture the wounds well. Hypotony is not your friend, wound leaks cause problems.

How can retina help?

- Management of retained lens pieces
- Cystoid macular edema
- Secondary IOL/IOL Exchange
- To help us, suture the corneal wound
- Start heavy topical steroids, control IOP, keep the cornea clear
- To retina for discussion of timing of surgery

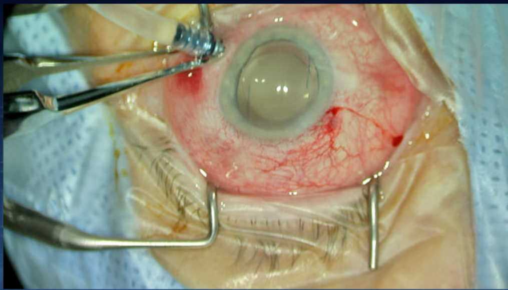
When should this be done

- Retrospective reviews find no difference in visual outcomes between same day, within 1 wk and greater than 1 wk time to PPV
- Risk of RD is high – between 4-8% and trend towards higher rates in those delayed for a very long time
- Presence of complications such as RD, CME, glaucoma reduced likelihood of good visual acuity.
- CME is reported between 8-10%

	Interval			P-value
Kim,[22] 1994 N = 54	Within 1 week (N = 27)	1 week to 4 weeks (N = 15)	More than 4 weeks (N = 20)	
≥ 20/40 (%)	70	60	70	> 0.05
≤ 20/200 (%)	11	13	25	0.4
Modi,[3] 2013 N = 569	Same day (N = 117)	Same week (N = 131)	More than 1 week (N = 321)	
≥ 20/40 (%)	61	63	56	0.35
≤ 20/200 (%)	16	21	21	0.29
Current study N = 246	Same day (N = 140)	Same week (N = 33)	More than 1 week (N = 73)	
≥ 20/40 (%)	67	67	52	0.09
≤ 20/200 (%)	17	9	26	0.09

Rohowetz LJ, Jabbehdari S, Yannuzzi NA, et al Pars Plana Vitrectomy for Retained Lens Fragments After Cataract Surgery: Outcomes Based on Timing of Surgery. Clin Ophthalmol. 2023 Feb 1;17:479-485. doi: 10.2147/OPTH.S391795. PMID: 36755889; PMCID: PMC9899933.

1 week post complicated ce/iol, 3 piece optic capture



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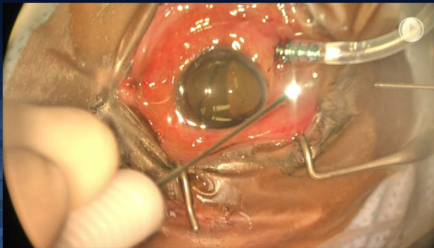
Surgical Video



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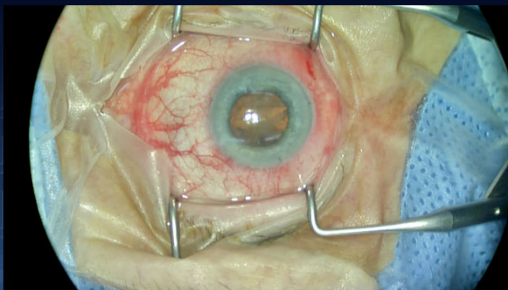
Secondary IOL placement



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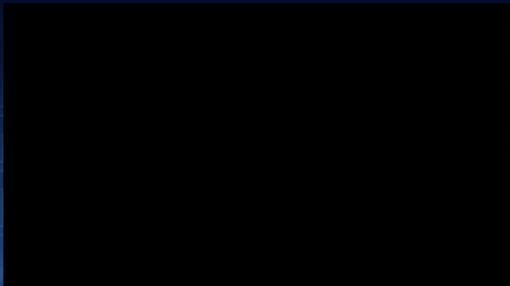
Case Presentation

- 65 year old male long standing uveitis inactive x 15 years, no immune suppression
- Develops cataract OU and taken to OR
- Get called after the OR, complicated surgery vitreous loss, there was zonular loss 180 degrees, we placed an iris sutured IOL (3 piece)

Case Presentation my visit 1 week later

- 1-2+ cell, 20/200 vision
- Tilted IOL, vitreous to wound
- First, get eye inactive (po steroids, PSTK)
- Then PPV, IOL exchange (sutured IOL)

Surgery



OK what to do

- Pars plana fibrosis extending anteriorly
- Retinoschisis and Exudative RD
- How to manage IOL at this point – would you put in a sutured IOL?

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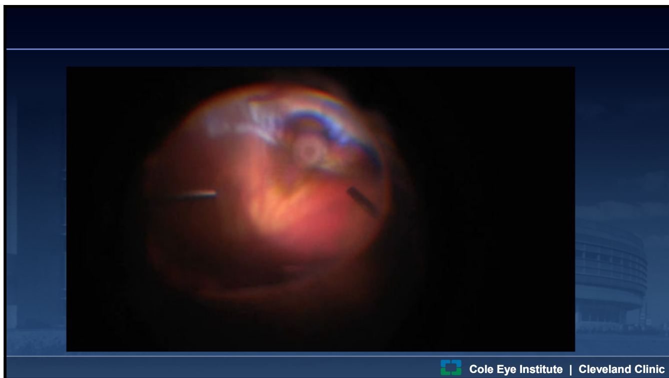

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Postoperative course

- PO steroids peri-op period
- Topical therapy, PSTK x 1
- VA 20/40 month 3
- 20/30 month 18
- No CME

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Case Presentation

- 85 yo female referred for decreased vision OD
- 1 week prior underwent attempted cataract surgery
- Scheduled for topical, during case, patient was moving, thus peribulbar block performed
- Procedure aborted, as patient was still moving

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Case Presentation

- That night patient with severe pain
- POD #1
- Vision Hand motion
- Vitreous hemorrhage noted
- Patient told, possible complication with block

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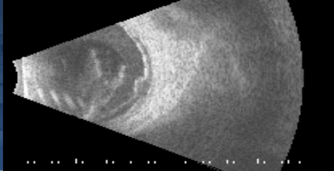
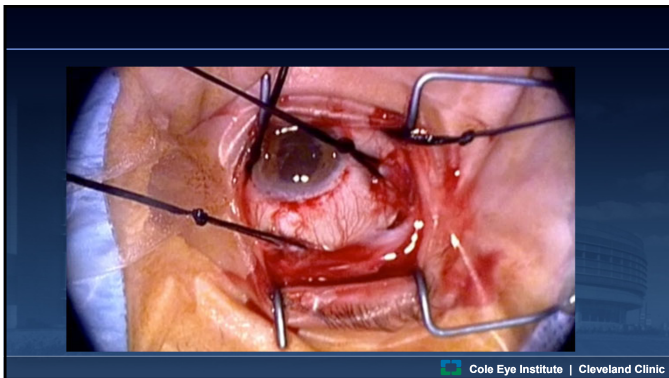
Case Presentation

- VA – LP
- IOP 6, 14 OS
- SLE – lid bruising, mild conj injection, cataract
- DFE – dense blood





Post op

- SB/PPV/repair of rupture/SO
- 3 months later
- PPV/SO out/phaco/IOL
- 6 months later – 20/100 vision

Case Presentation

- 64 year old female w/ prior complex CEIOL in 2001 – ACIOL
  - Subsequent RD with SB (unsure if vitrectomy)
- 9/10/19 – DSAEK surgery for bullous keratopathy
- POW1 – HM and IOP 44, corneal suture was trimmed
- Patient with with sudden onset of pain, redness, loss of vision after straining
- HM vision, IOP 8

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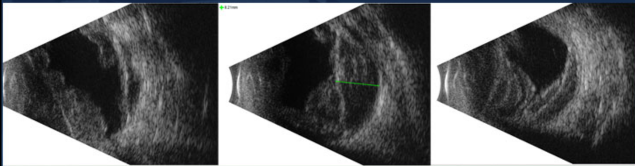
(POM1)
- 270 degree choroidal detachment (non-mobile)
- Retinal detachment (mobile) noted over choroidal from 5 – 10 o'clock
- Large clot centrally near 9:00 (subretinal)



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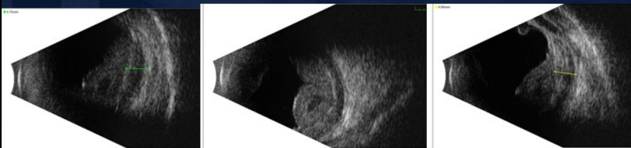
2 weeks post drainage



Bscan with decrease in choroidals but with residual RD

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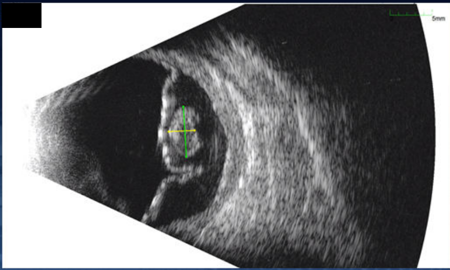
2 months post drainage



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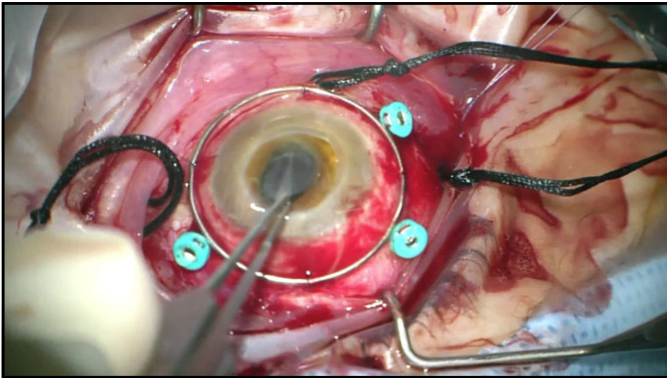

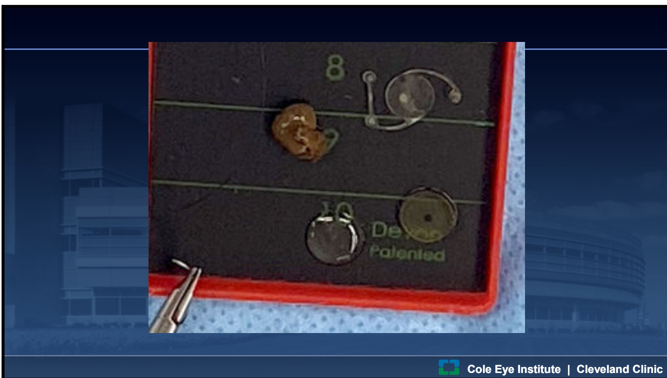

Summary

- Complications will occur
- To manage these properly, you have colleagues who can help
- Suture the wound, steroids and IOP control. Do what you are comfortable with and try not to manipulate too much. Less sometimes is more
- Discussion with patient preoperatively and post operatively
- Even after PPV, topical steroids for a while and management of CME/IOP issues.

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