

Pearls for Complex Cataract Surgery



Financial Disclosures

- Speaker for Haag Streit*

*Just one webinar on complex cataract surgery..... and it didn't pay very much!

HELP PAY FOR CORDUROY'S FARMER'S DOG



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YAMANE AIN'T GETTIN' IT DONE!

What are some of the factors that can make a patient's cataract surgery more challenging?

- Weak zonules
- Poor dilation
- Anatomical difficulties (deep set eye, Kyphosis, tight orbit)
- Poor red reflex (white cataracts, vitreous heme, asteroid hyalosis)
- Posterior capsule damage (trauma, prior PPV or IVI).
- Rock hard lens
- Posterior pressure
- Cornea opacity (poor view)
- Weird ocular anatomy (Megalophthalmos, microcornea, nanophthalmos)

Having strategies to
deal with complex
Situational pressure
surgical cases...
Monocular patient, VIP,
friend /family

Can reduce these problems
back to a manageable size again

Patient referred for cataract surgery

History of "glaucoma"

Prostaglandin induced

On topical PG's for many years

orbital fat atrophy

Dense NS cataracts

OCT normalreally just OHT

Poor visibility

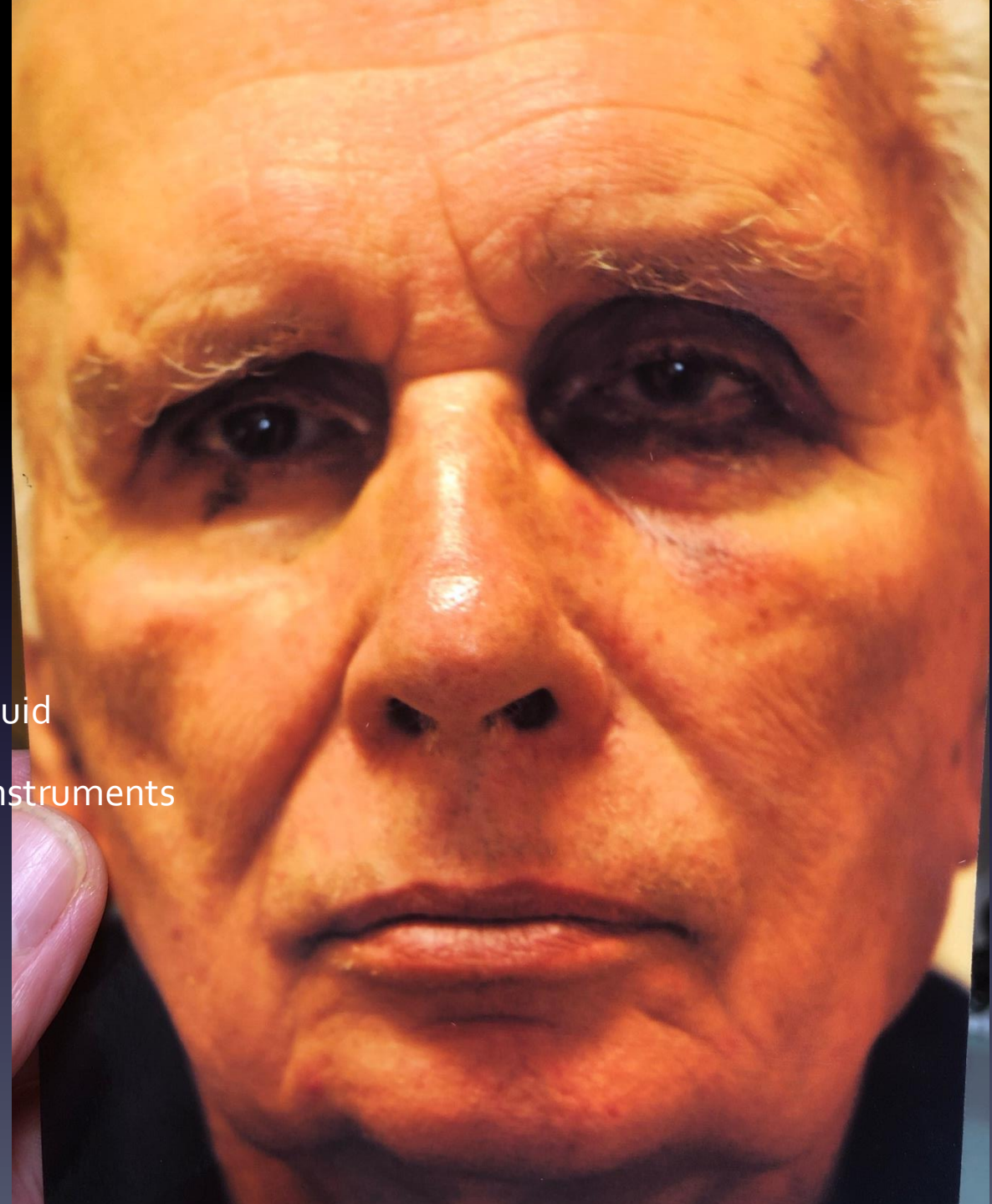
Can make cataract surgery extremely challenging

Pooling of fluid

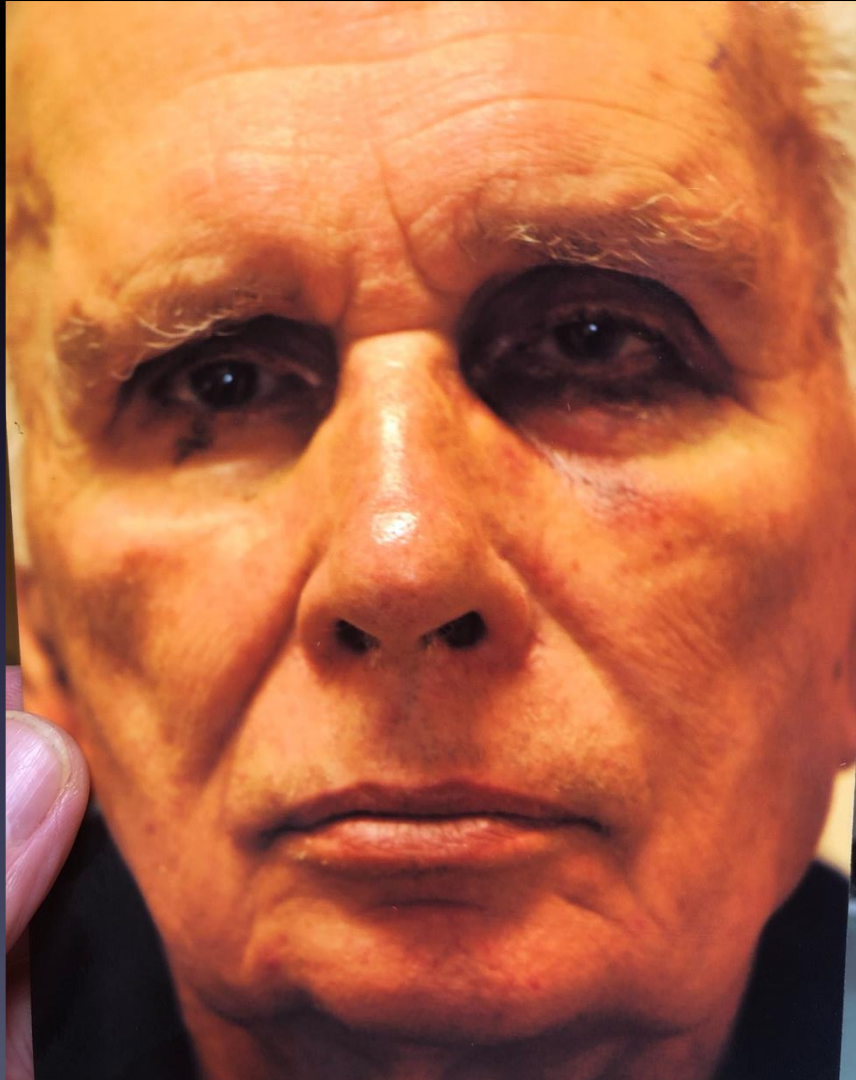
Difficult access with instruments

Create volume in orbit with large peribulbar
injection of fluid....20cc 1% Lidocaine with
Wydase.

Still hard to even get the
speculum in!



**One year after phaco/MIGs
with discontinuation of PGs**



Referred in with bilateral CF cataracts

4 diopters cornea astigmatism

I can probably do the phaco
but YAG LASER?

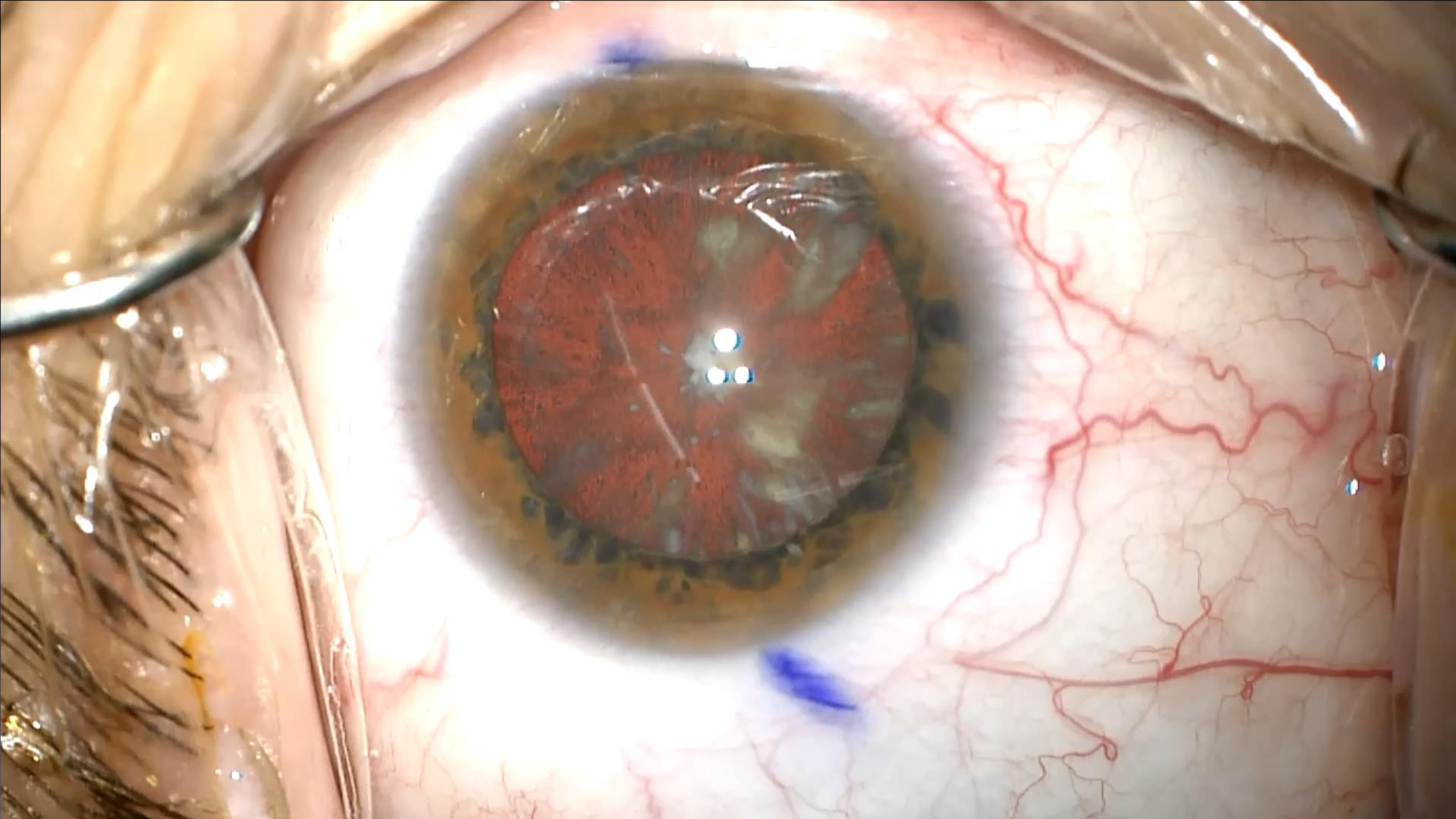


Referred in with bilateral
CF cataracts

4 diopters cornea astigmatism

I can probably do the phaco
but YAG LASER?





**When making your rhexis,
Increased posterior
pressure:**

Makes the tear
want to run out



Eyes at greater risk:

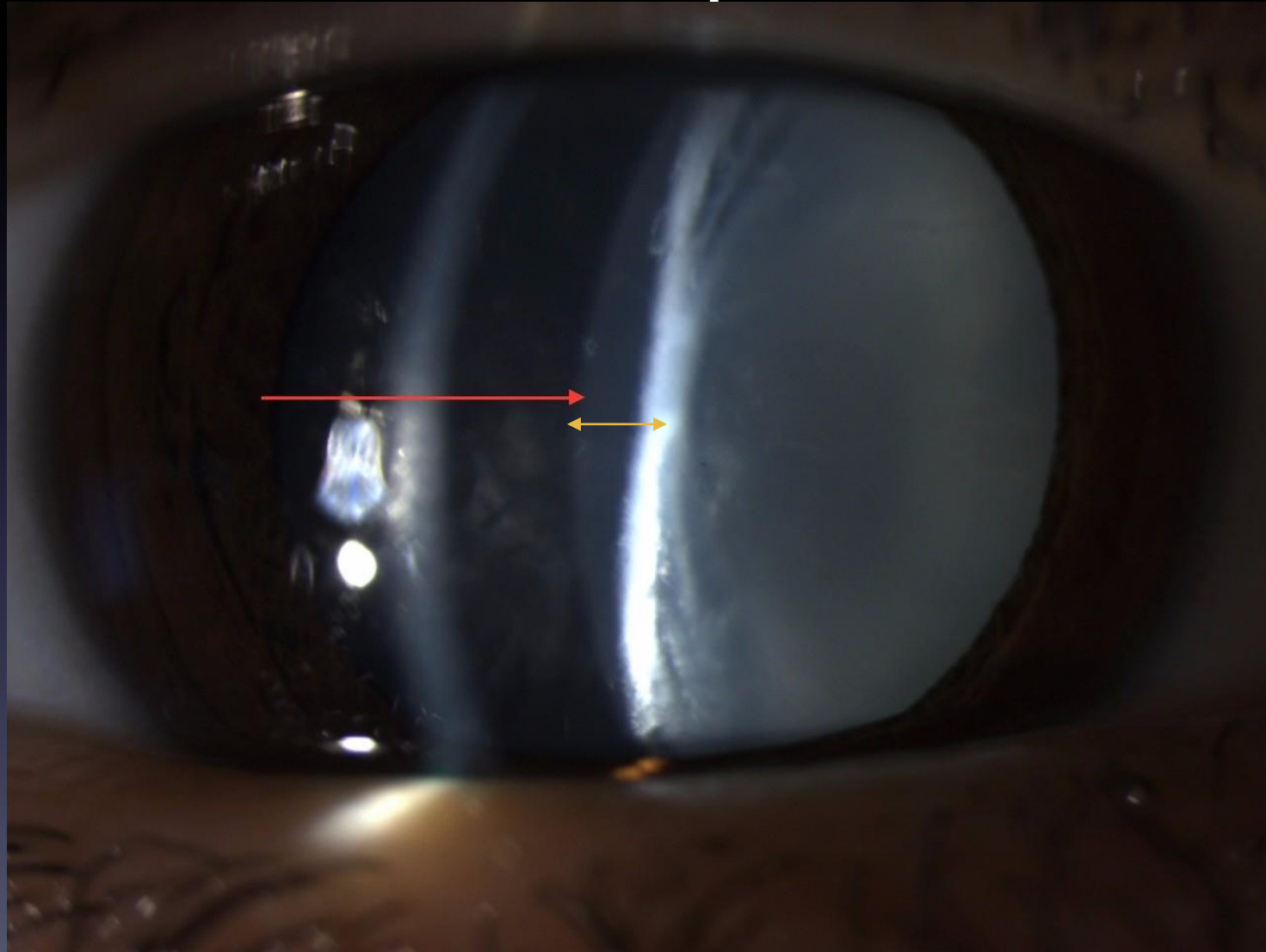


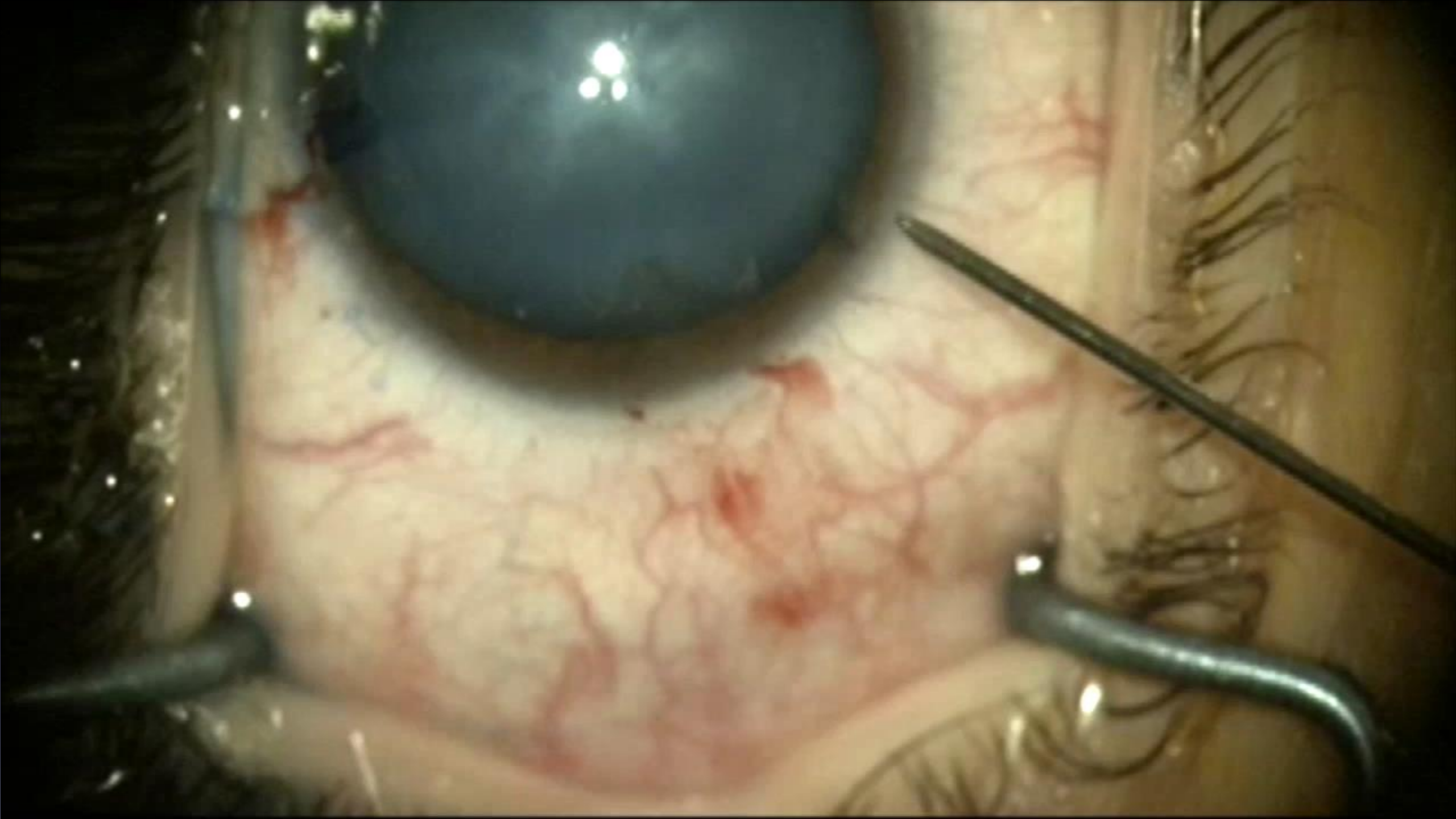
- Short Axial length (less than 22 mm)
- Shallow ACD (less than 2.5mm)
- History of Angle closure glaucoma

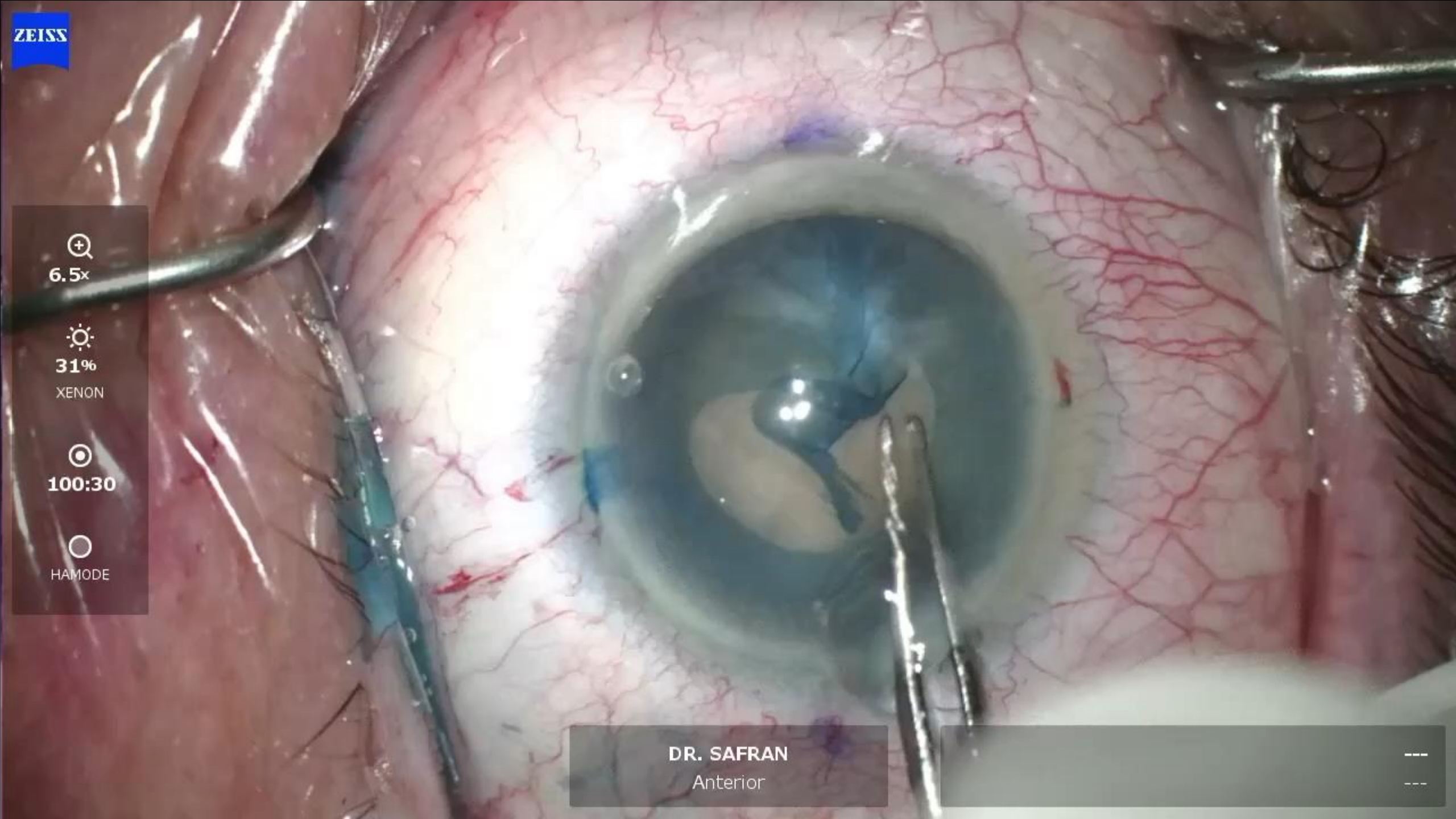
Eyes at greater risk: consider

- 0.5 gm mannitol/KG 1/2 hour prior to O.R.
- Dispersive viscoelastic: flatten anterior capsule
- May need to use microforceps through paracentesis

White cataracts: may have increased
intralenticular pressure







6.5x



31%

XENON



100:30

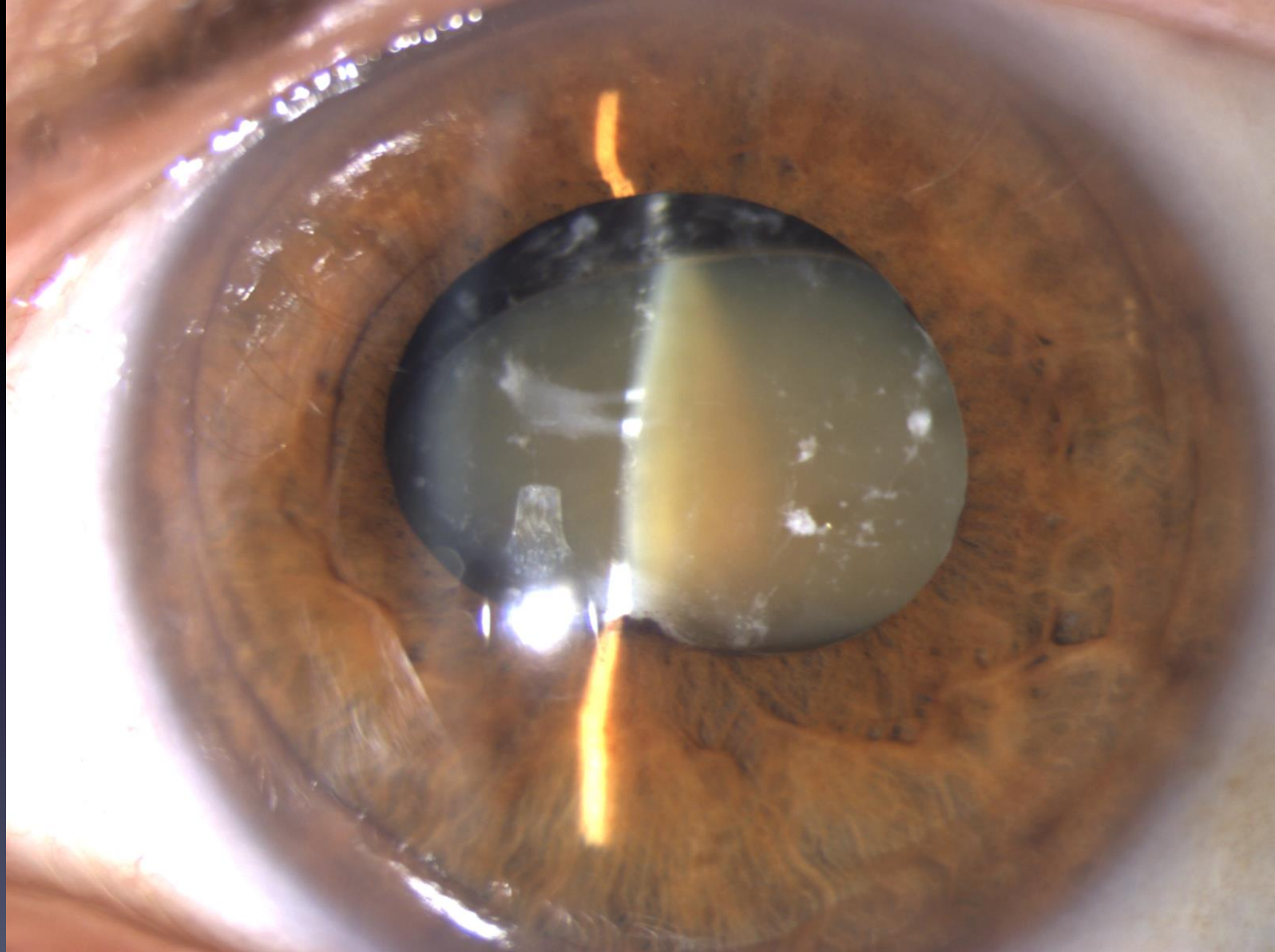


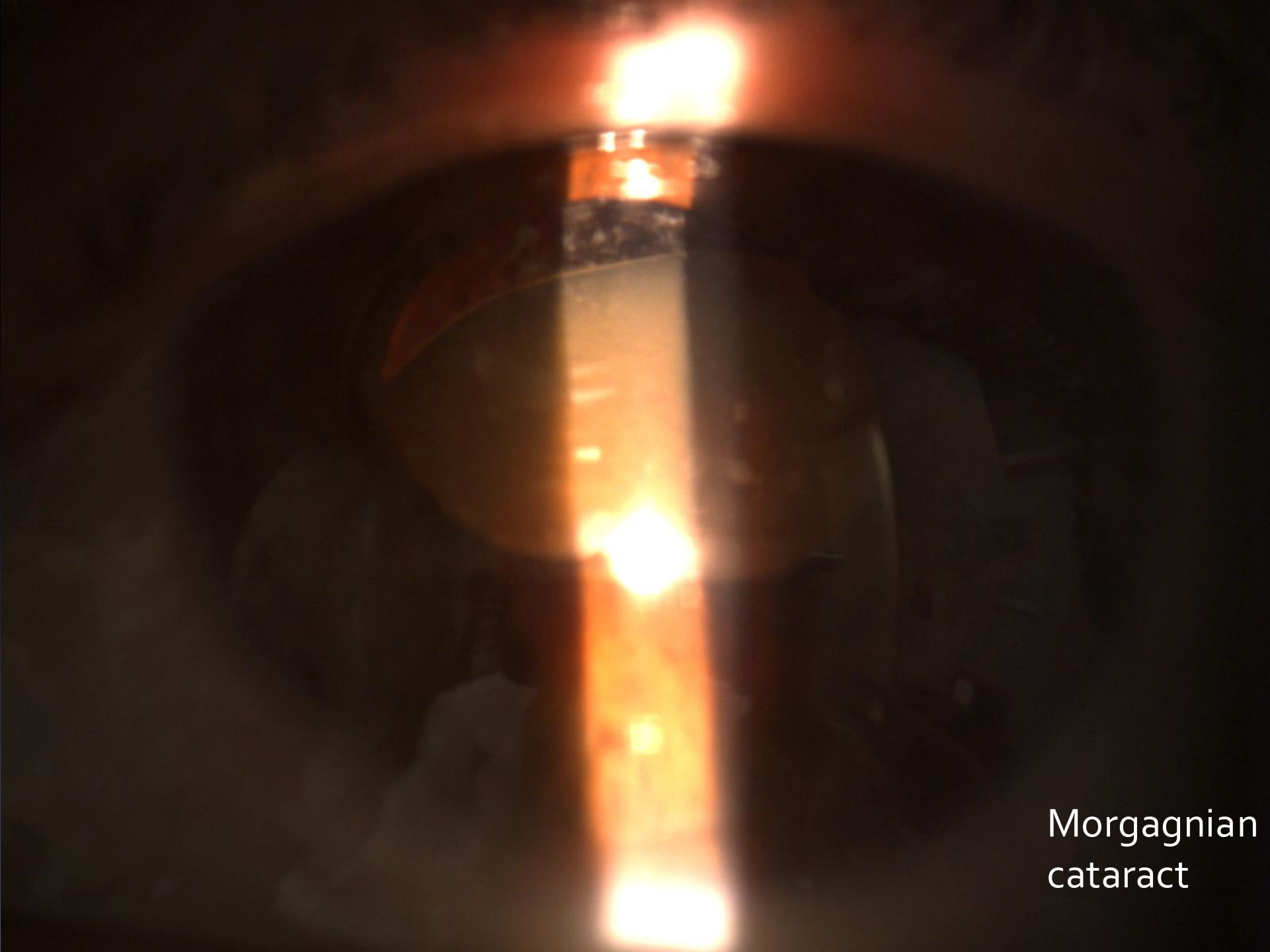
HAMODE

DR. SAFRAN

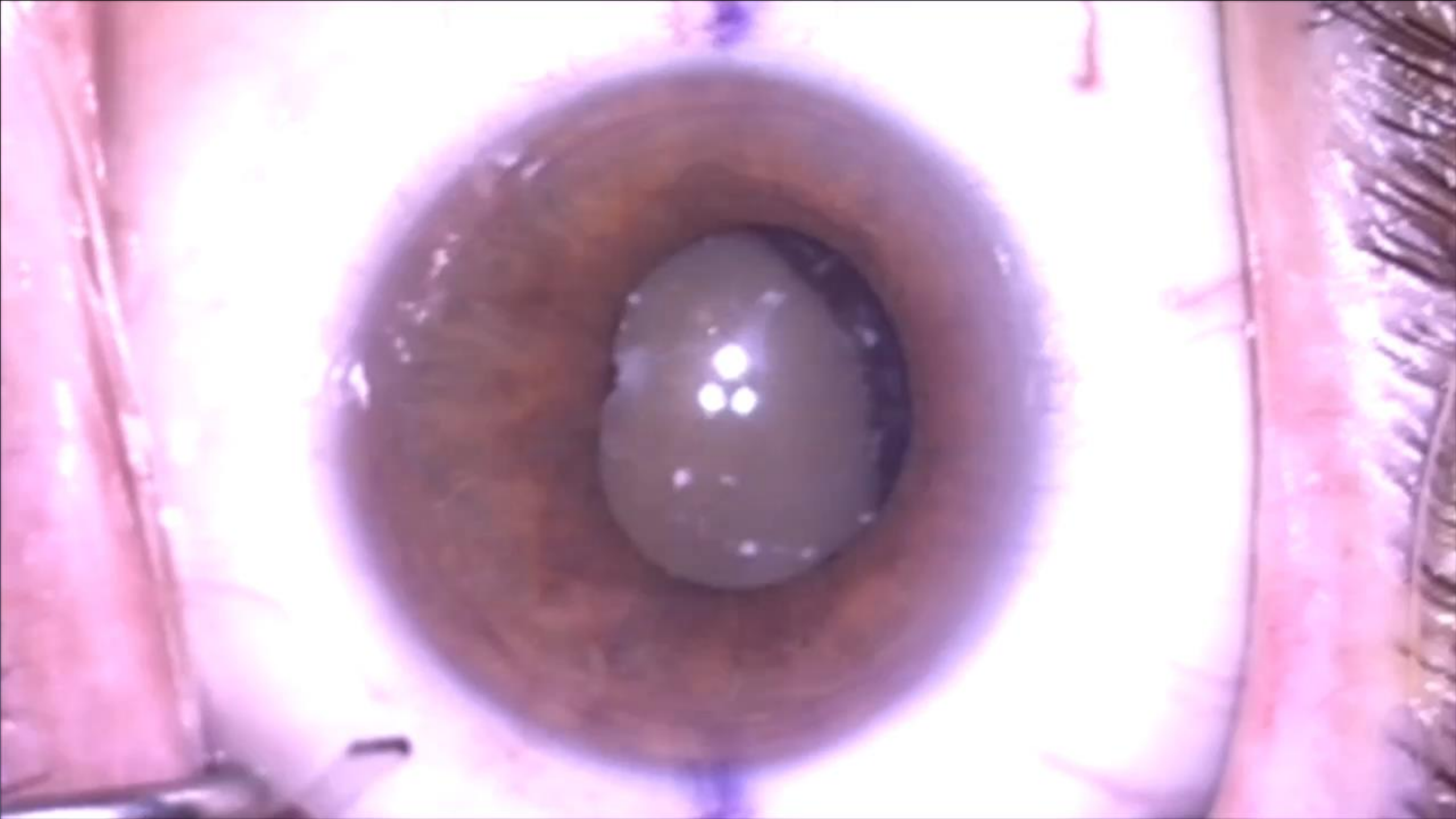
Anterior







Morgagnian
cataract

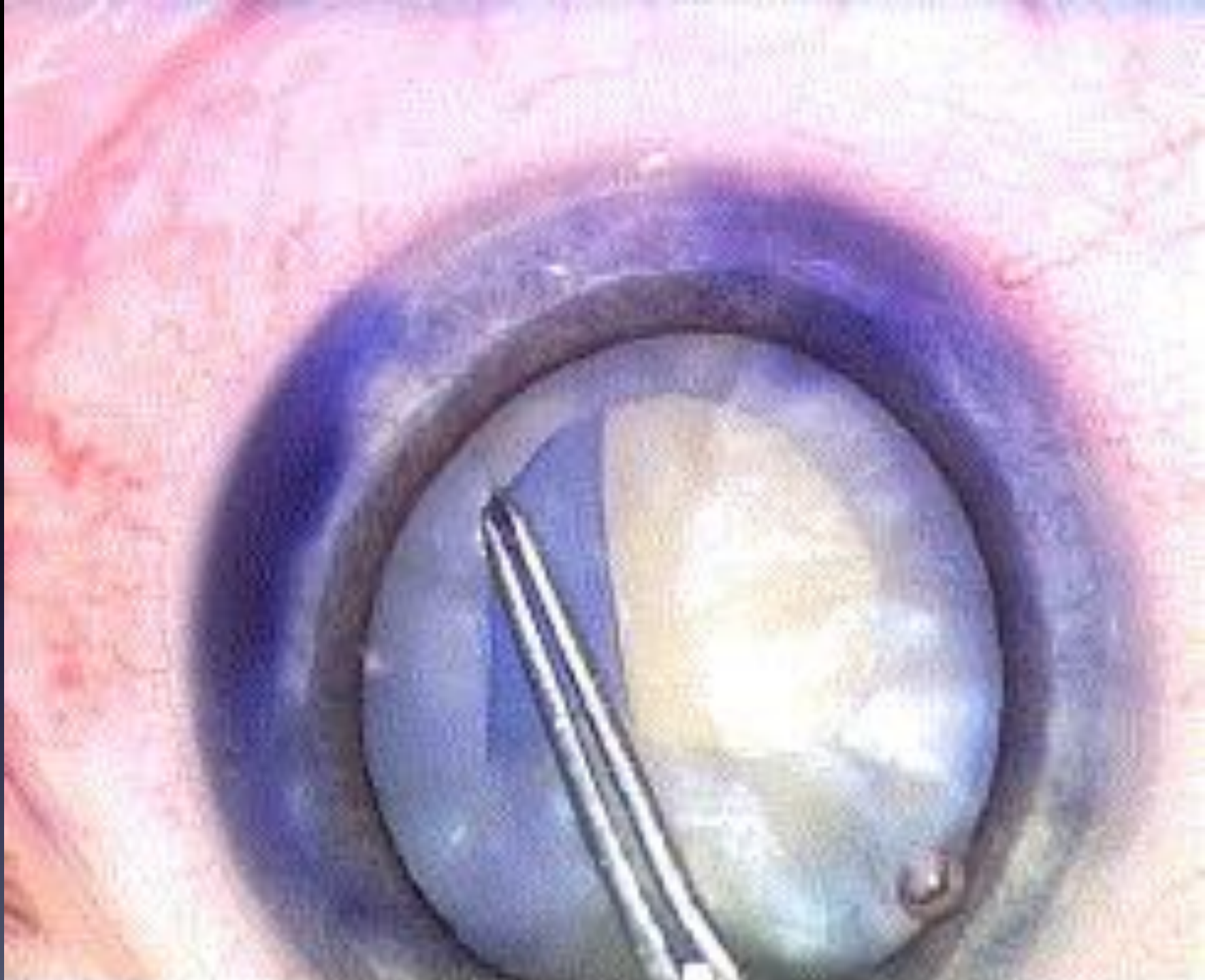


If tear starts running out to periphery.....

- Stop tearing !!!
- Add viscoelastic
- Adjust speculum
- Re direct tear out of the "anterior zonule jungle"

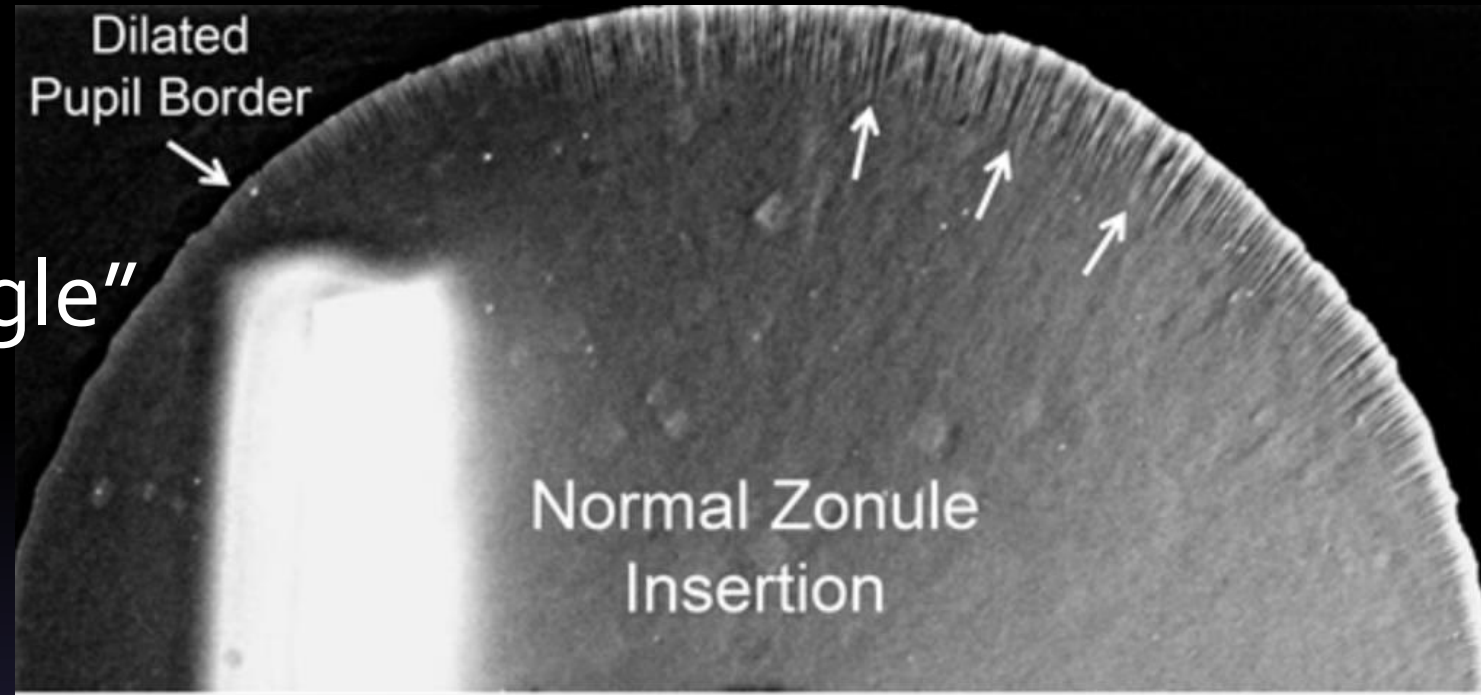
Little maneuver

- To redirect the tear out of “the zonule jungle”

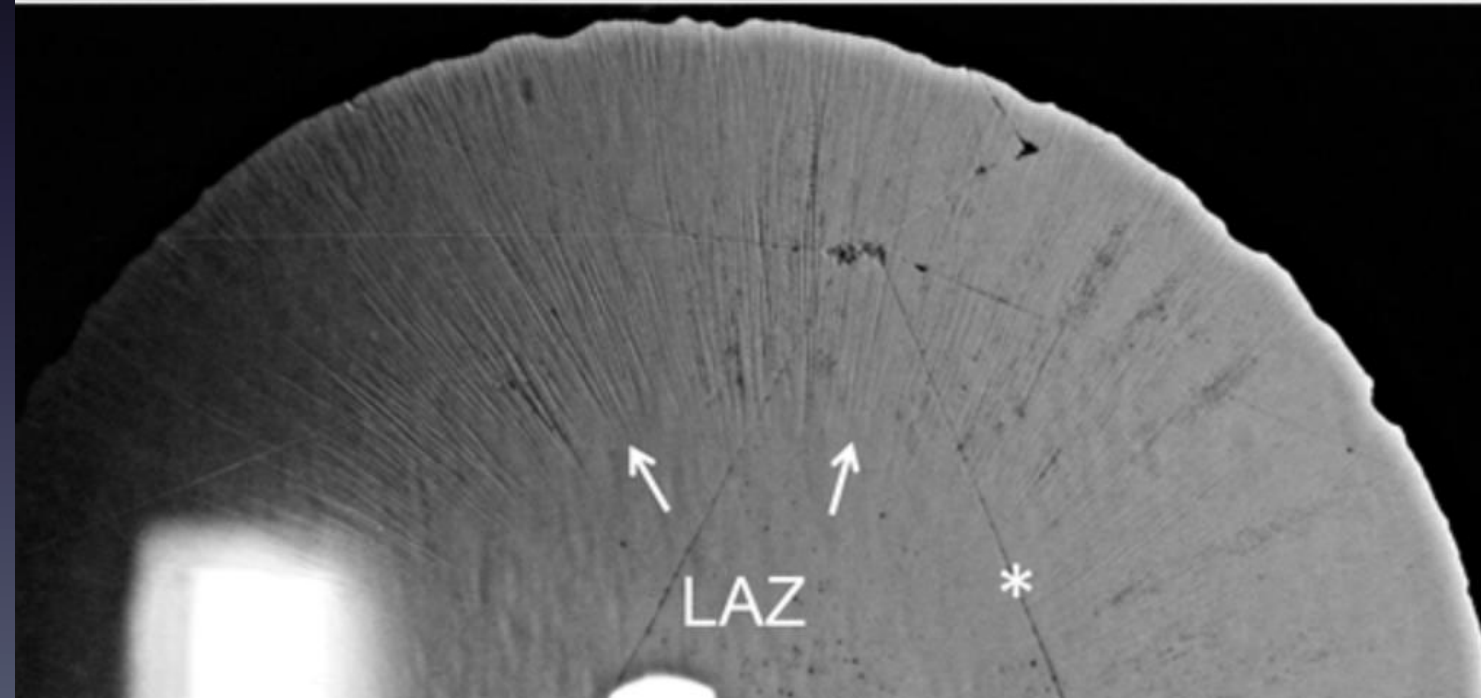


The "Zonule Jungle"

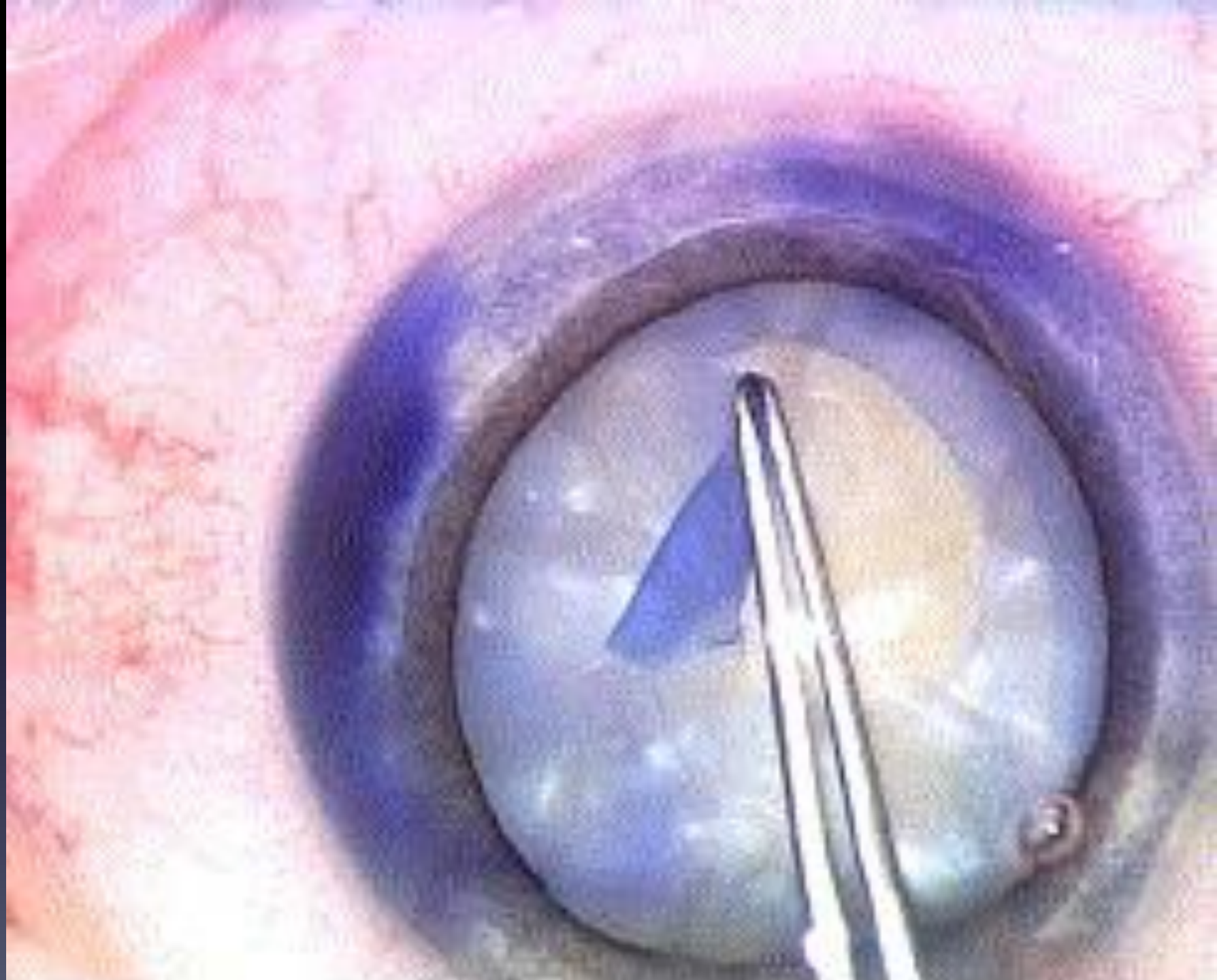
(where zonules insert on anterior capsule)



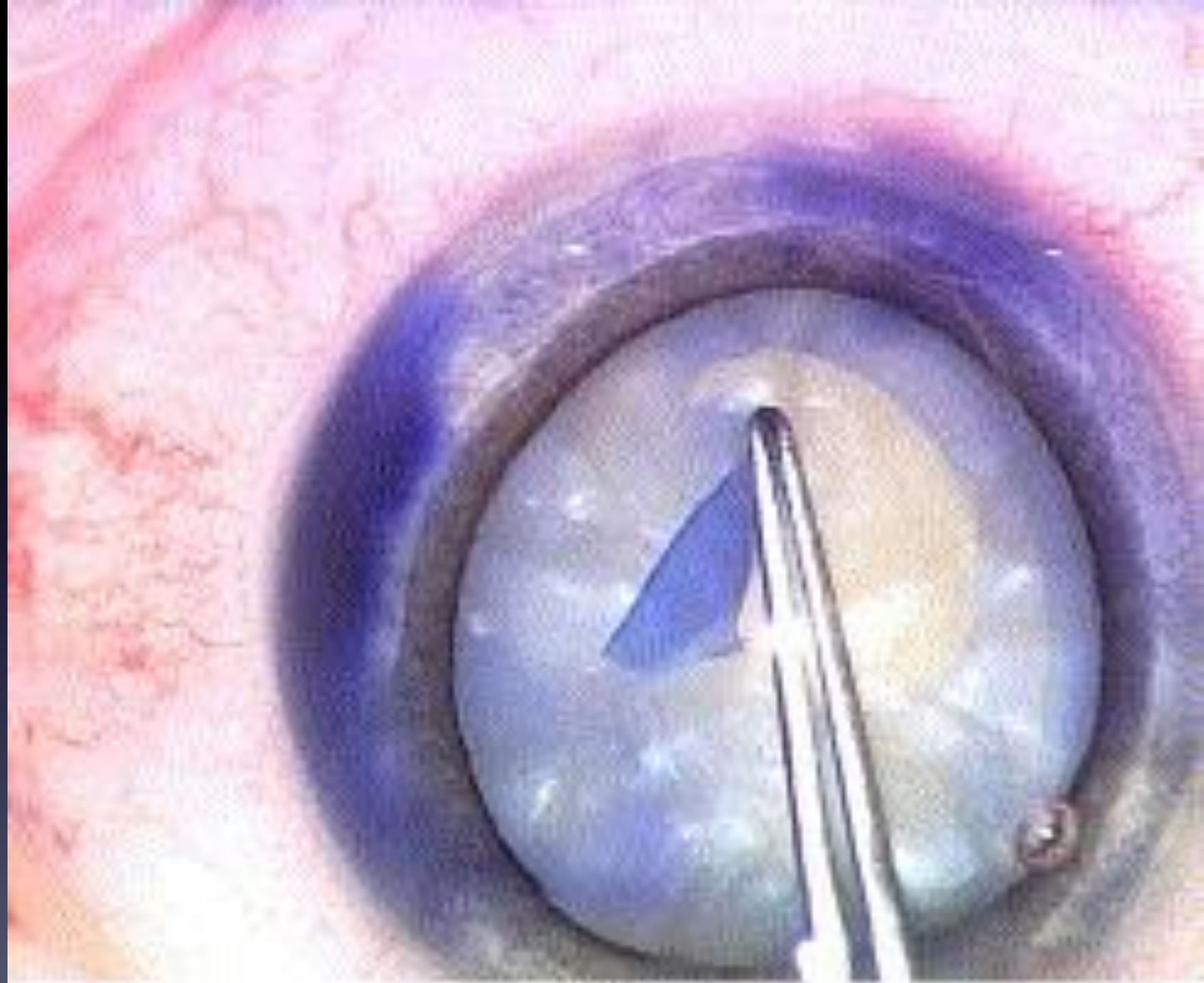
If your tear gets into the "jungle" the tear will get "railroaded" radially



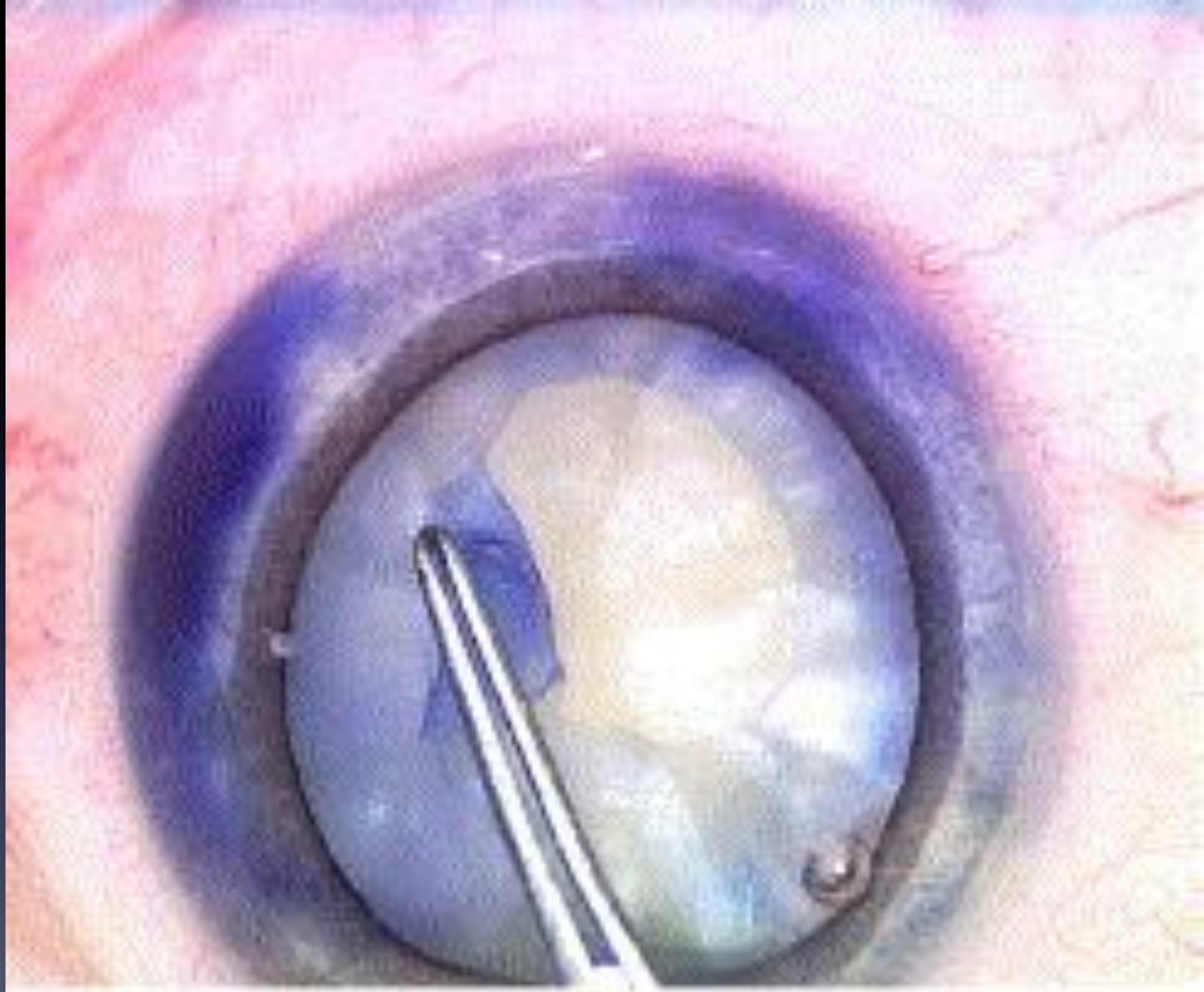
Flip anterior
capsule back



Re direct tear
centrally out of
zonule "gutter"

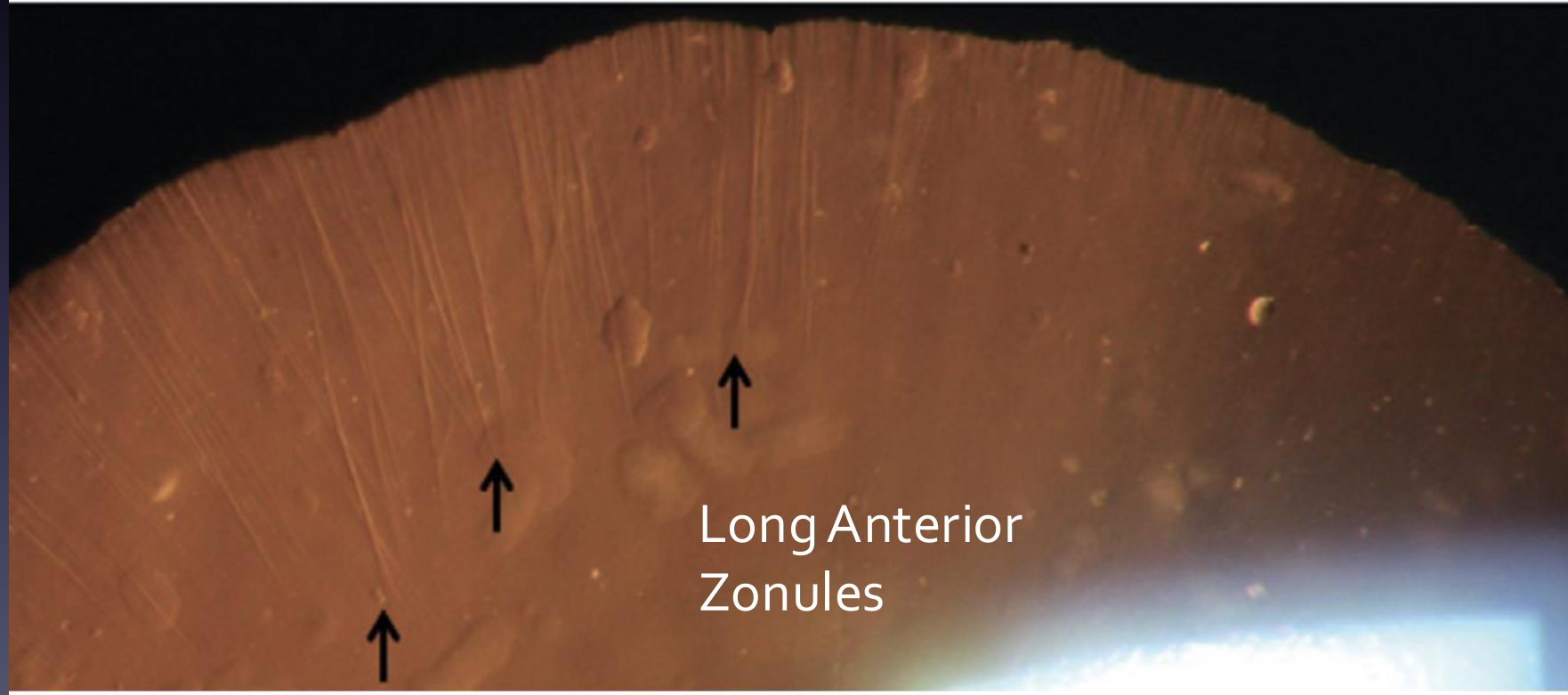
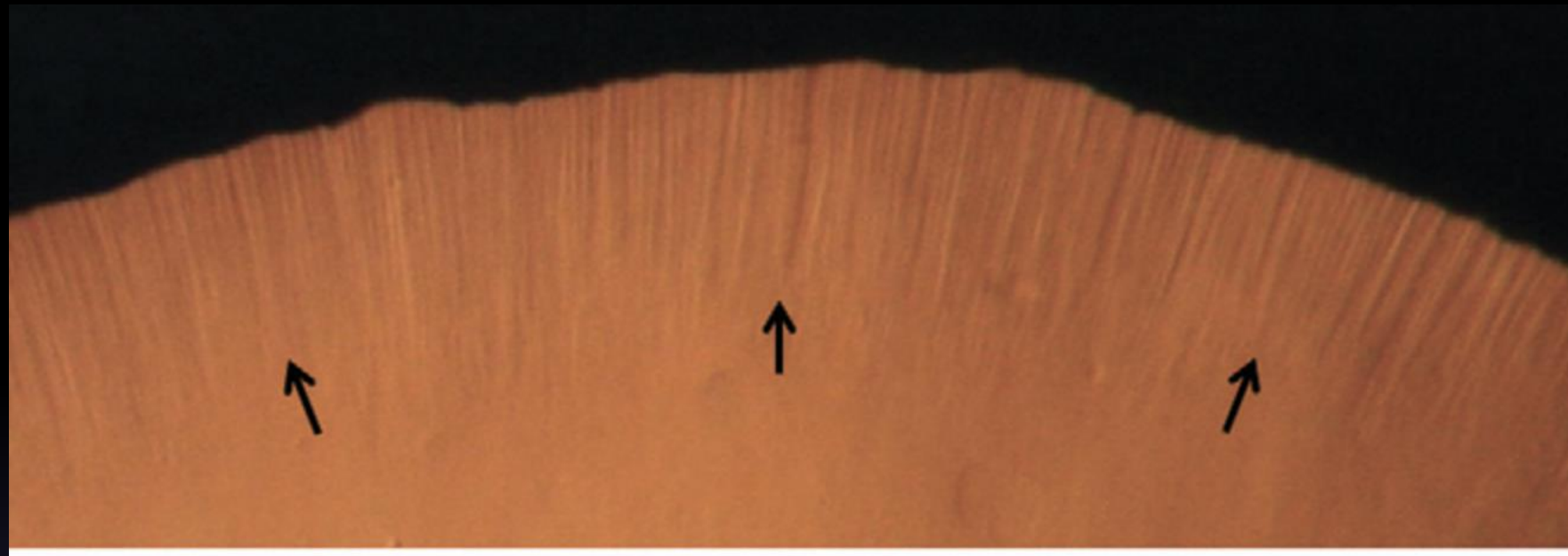


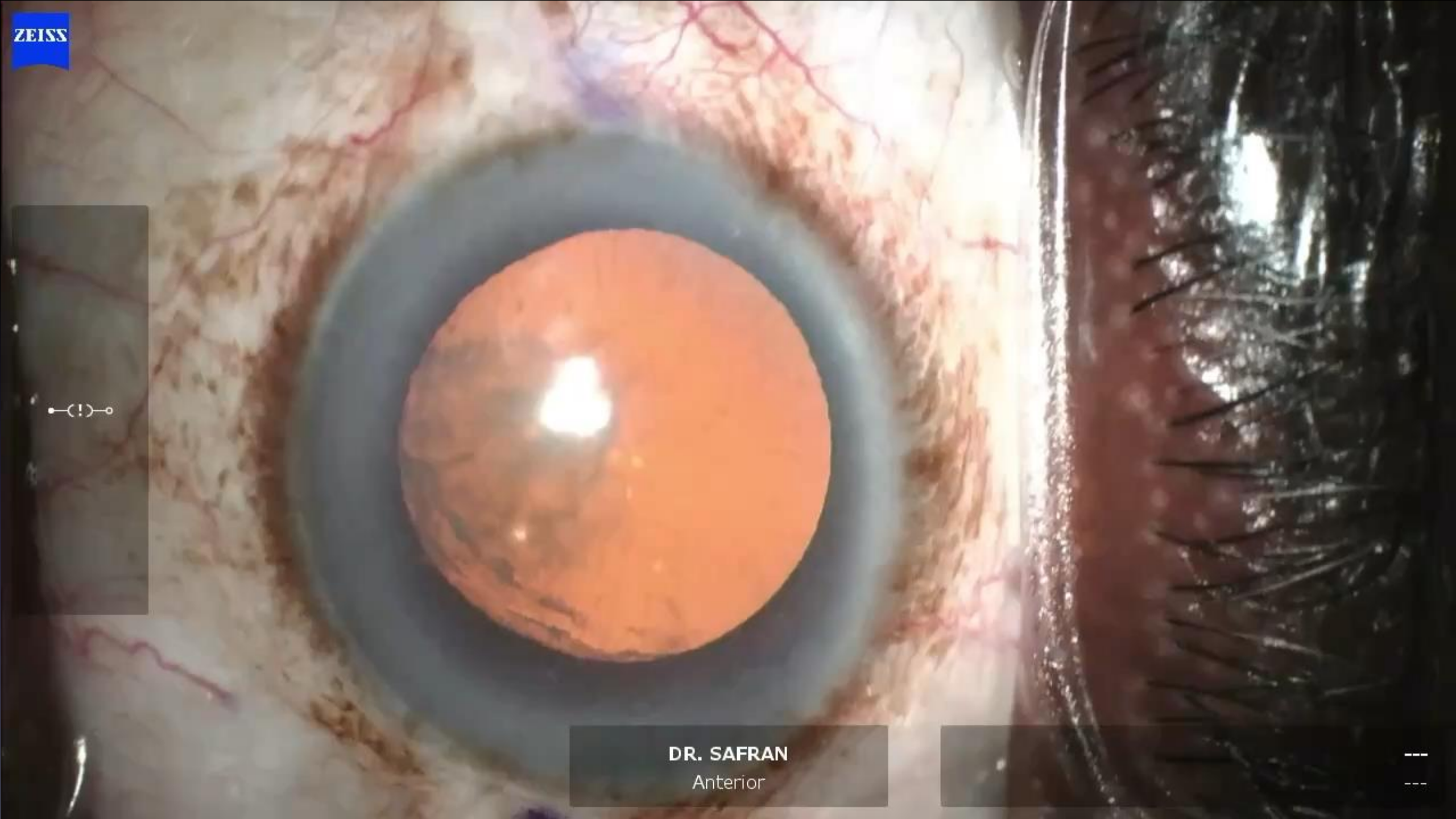
Continue
circular tear



Anterior zonules
can direct tear out
to the periphery

Some patients
have longer more
anterior zonule
insertion

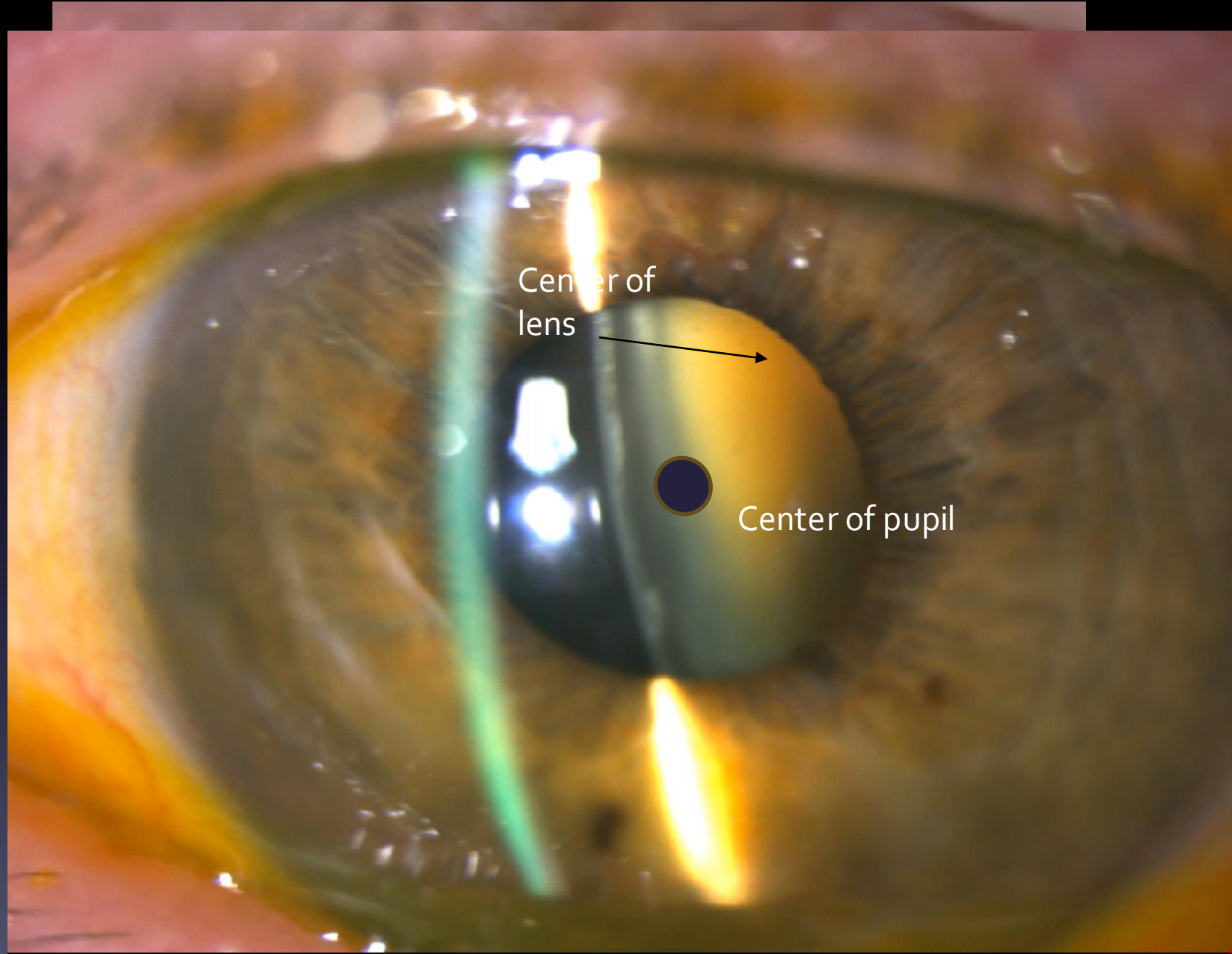


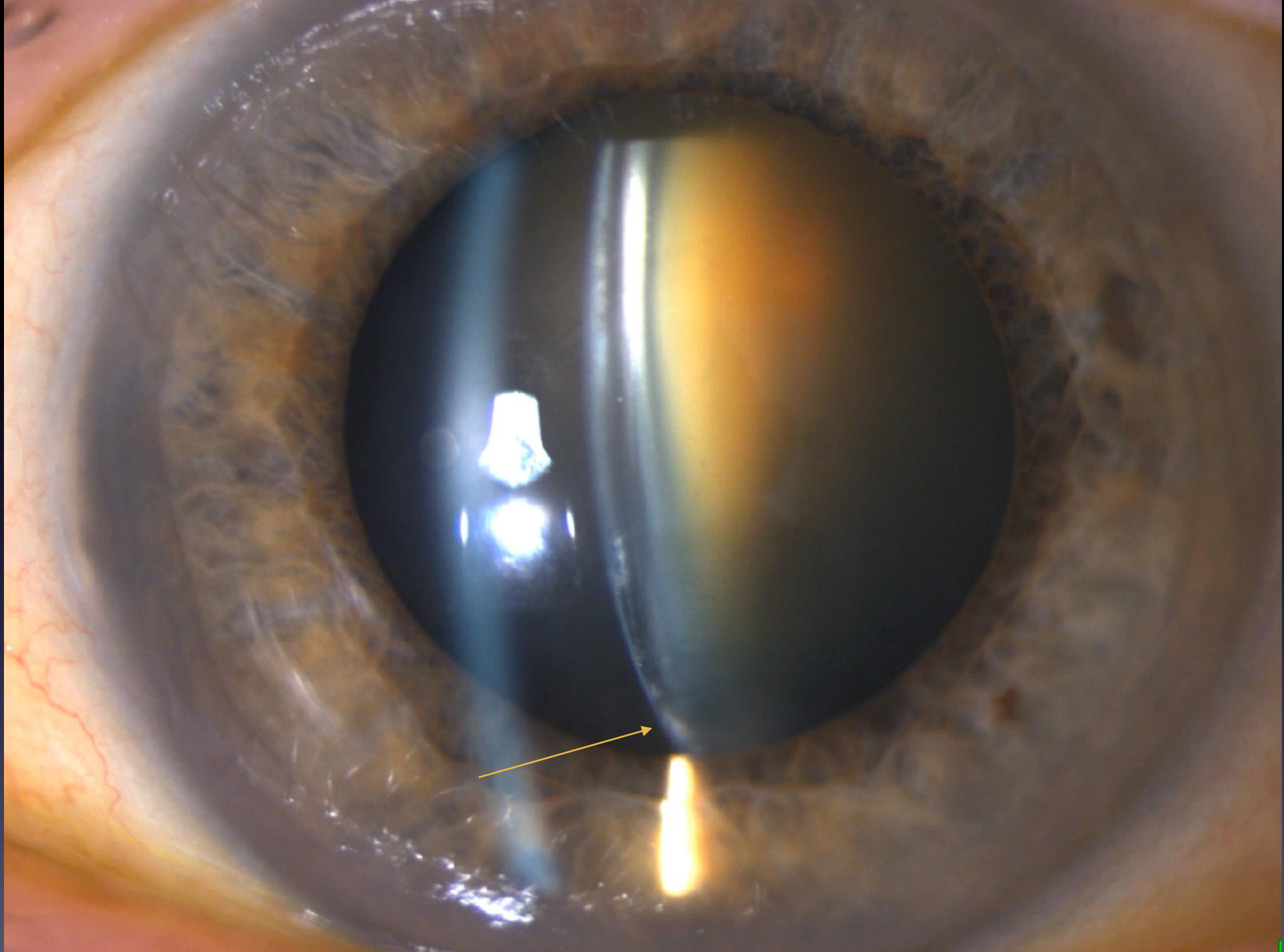


Just another dense
cataract?

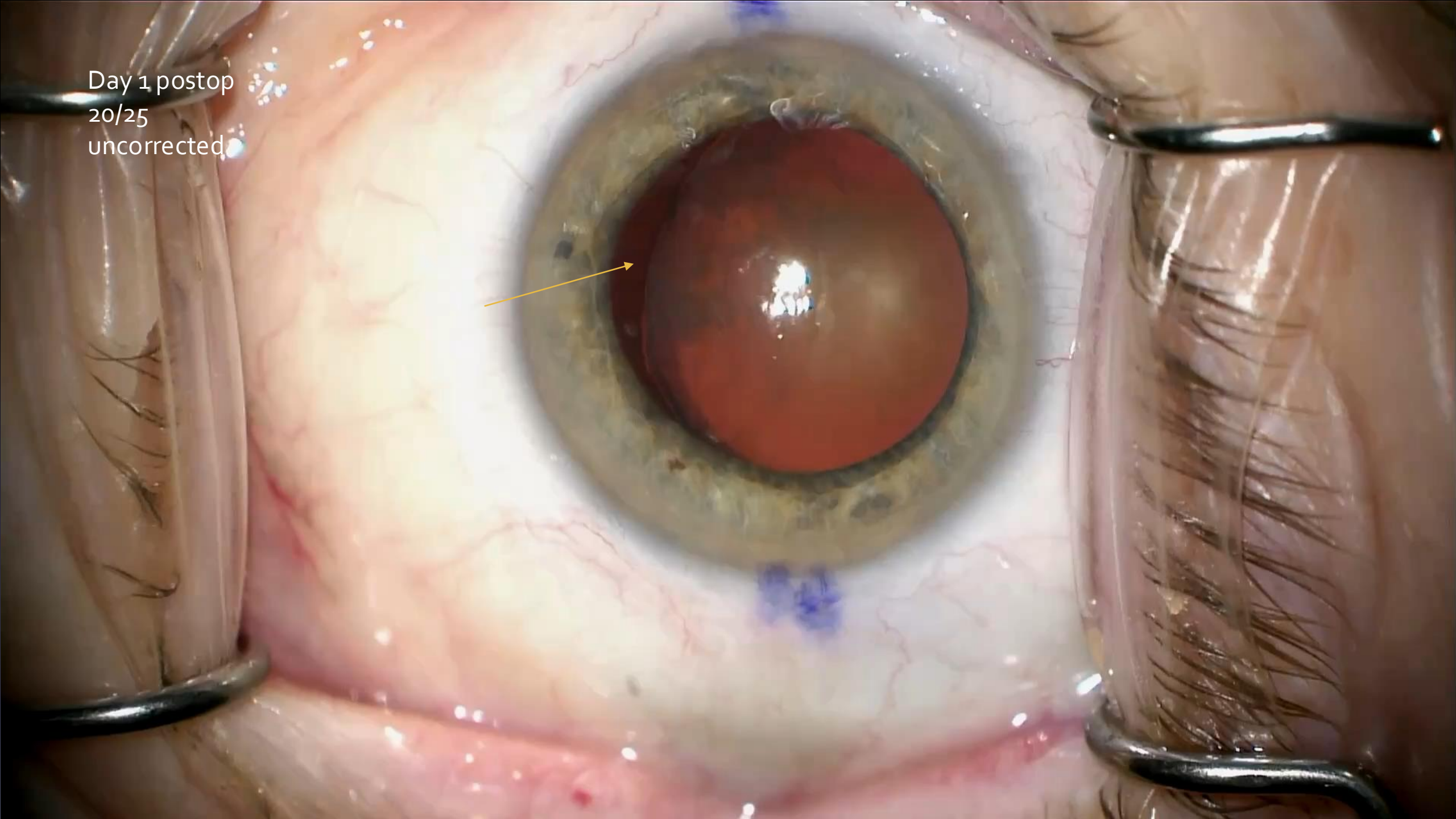
**Where's the center of the
nucleus.....**

Relative to the center of the pupil?

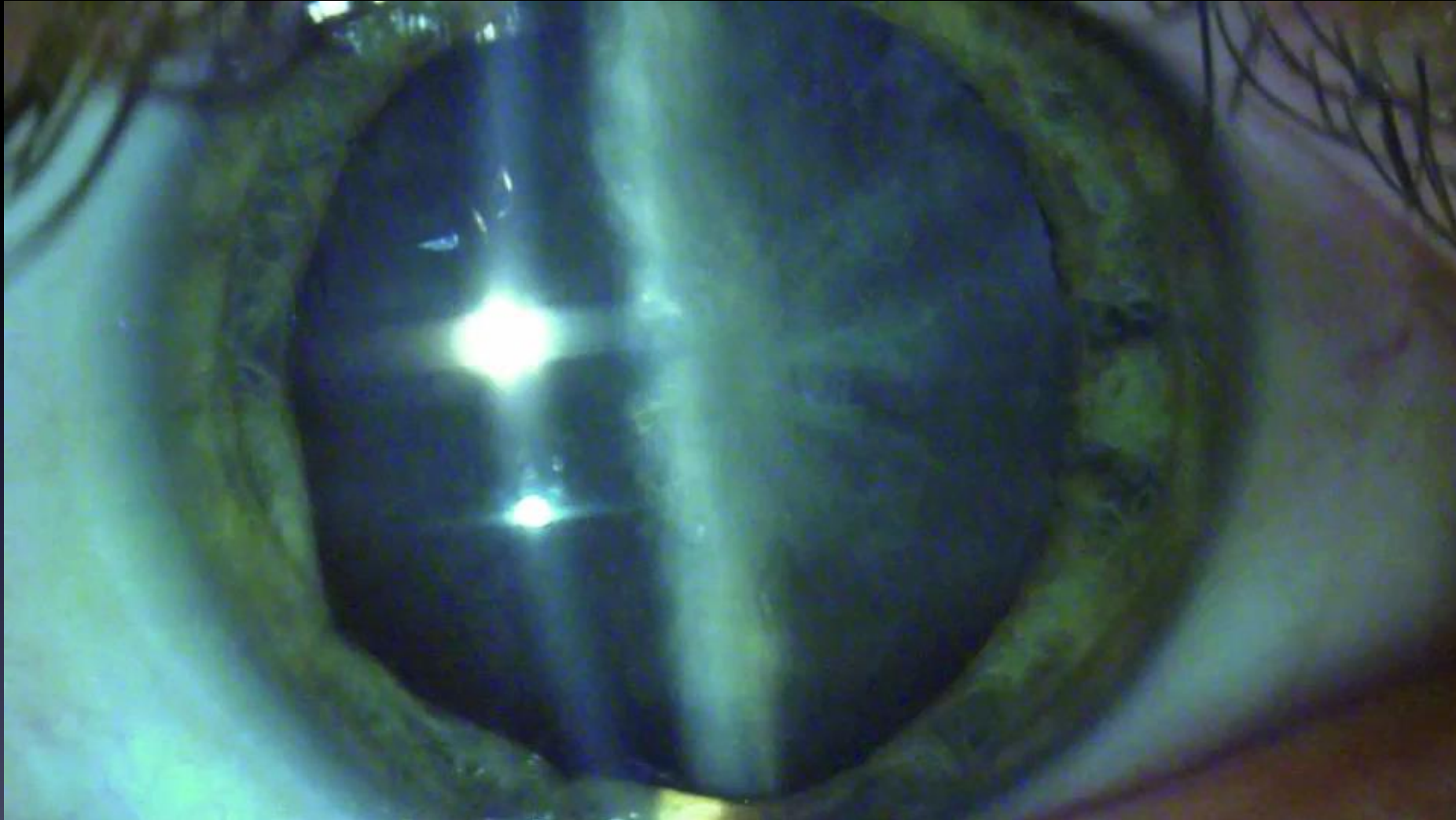




Day 1 postop
20/25
uncorrected



If you only examine a patient after dilation you may miss recognizing zonular weakness



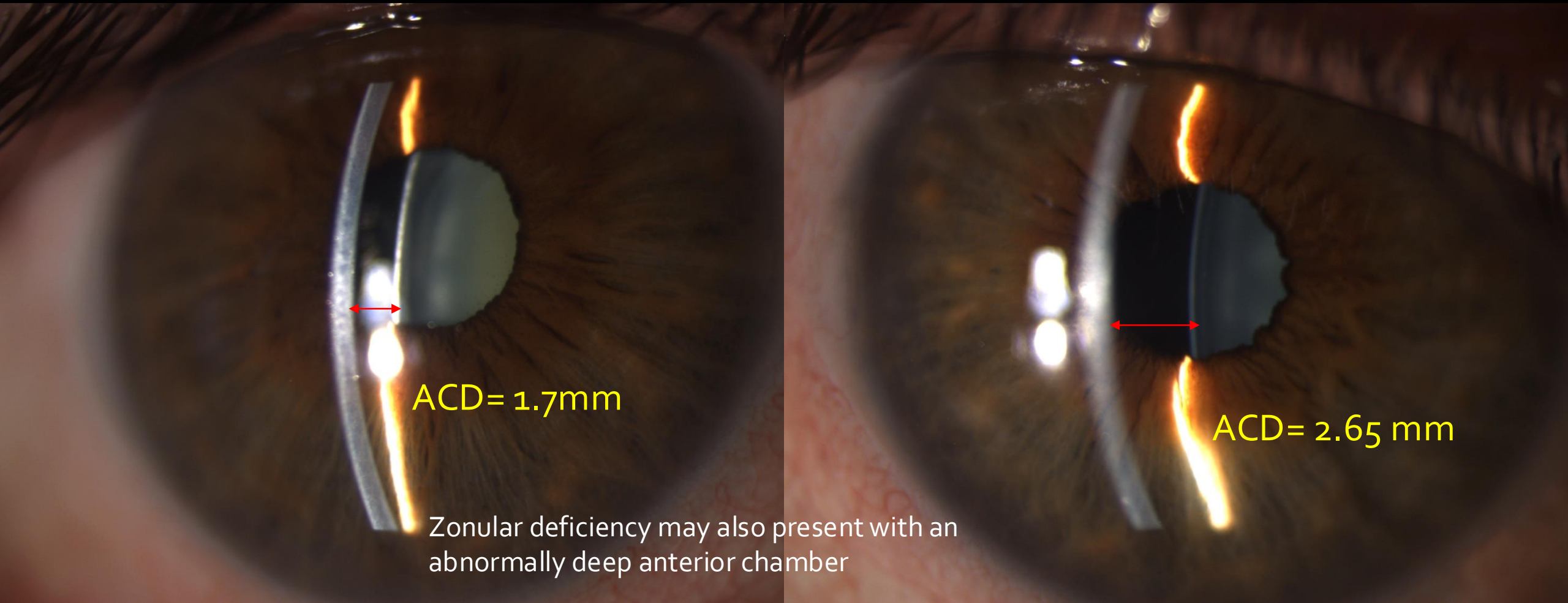
After dilation

Look for asymmetry in AC depth

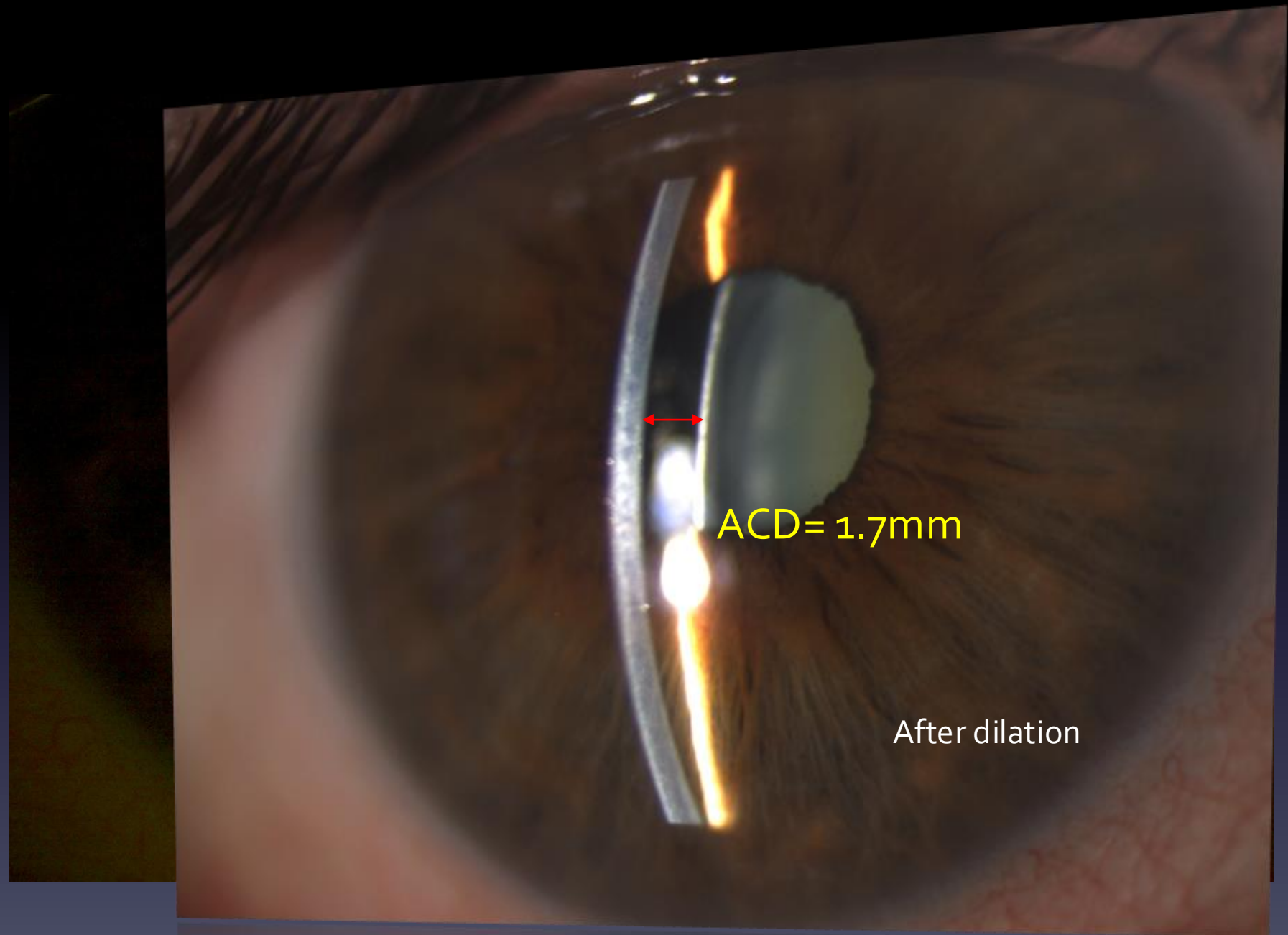
Weil Marchesani Syndrome

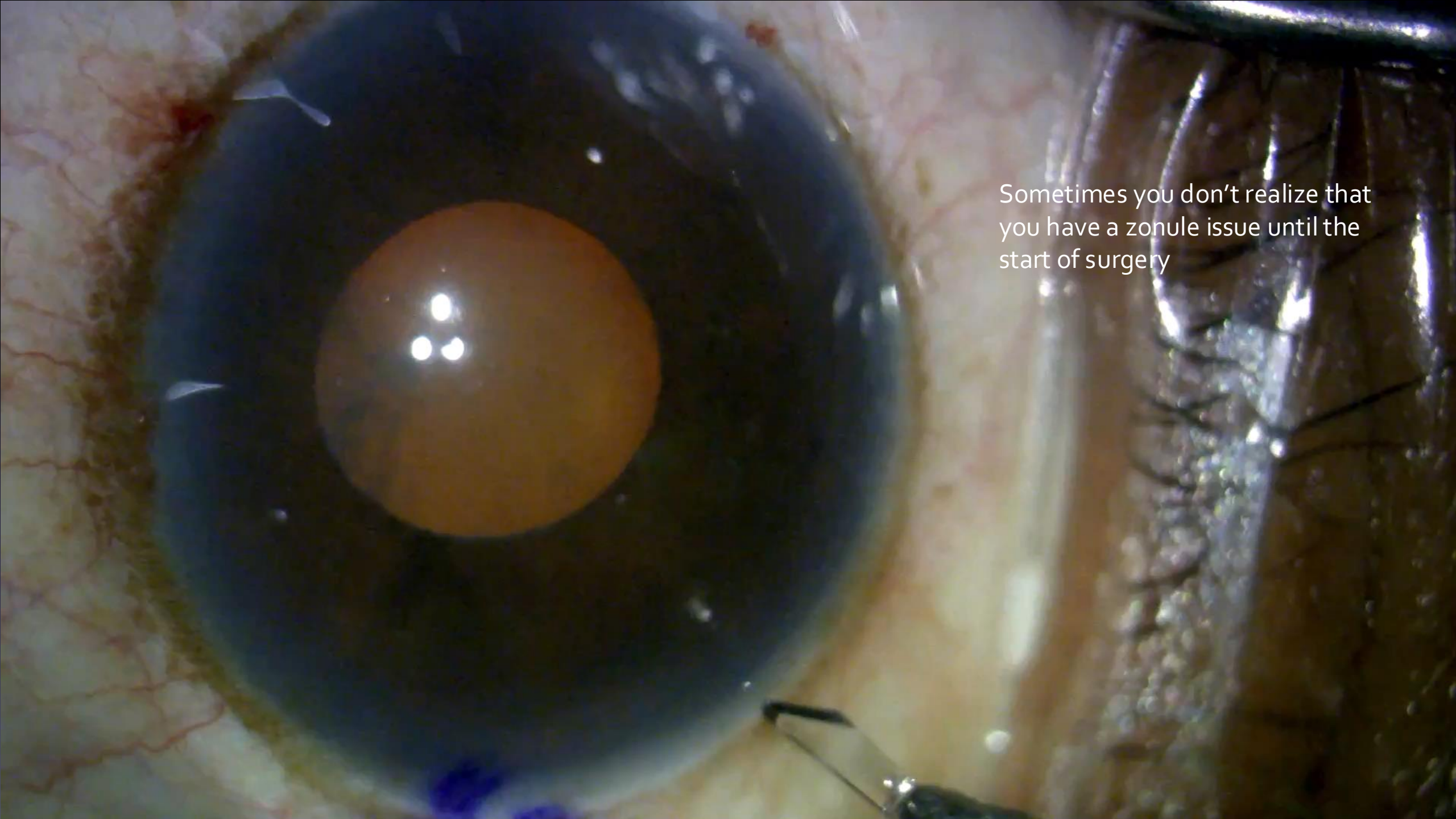
OD= 20/400

OS=20/25

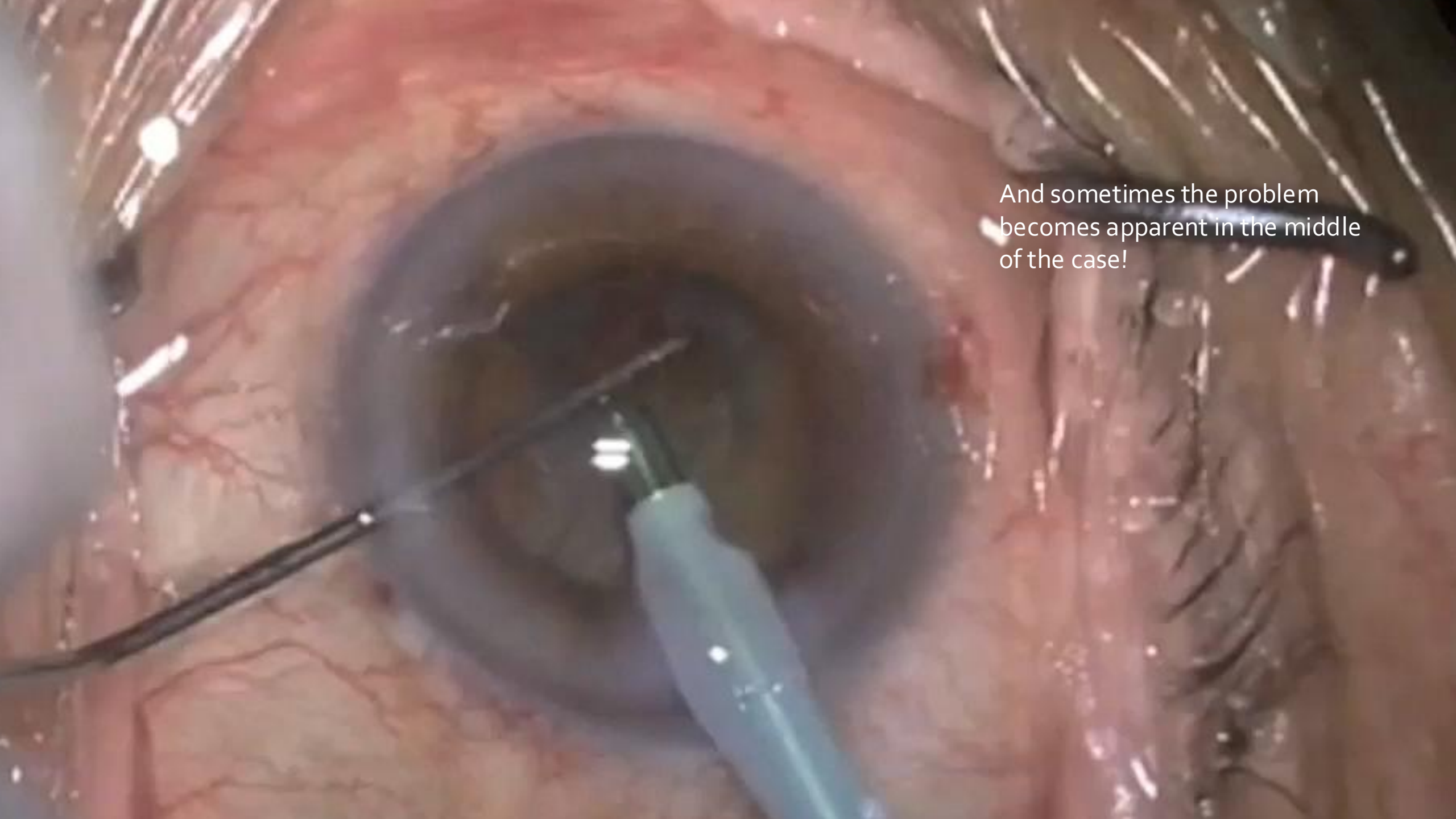


Look carefully for
presence of vitreous in
AC as well



An intraoperative photograph of a human eye during a surgical procedure. A large, circular, blue surgical drape is visible, framing the eye. The eye itself is open, showing a brown iris and a clear lens. A surgical instrument, likely a phacoemulsification probe, is visible on the right side of the eye, positioned near the cornea. The surrounding tissue is light-colored and appears moist. The text "Sometimes you don't realize that you have a zonule issue until the start of surgery" is overlaid on the right side of the image.

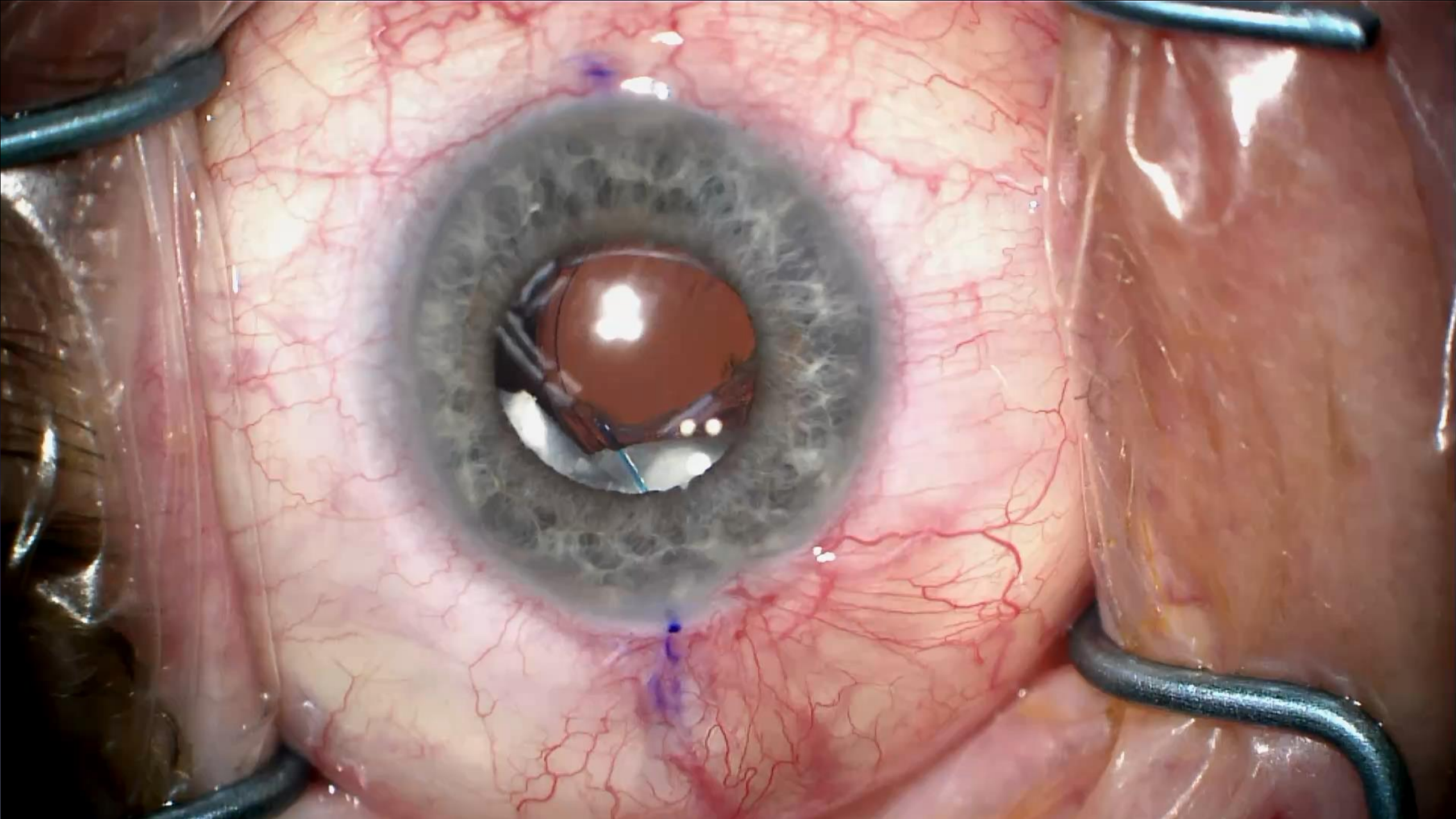
Sometimes you don't realize that
you have a zonule issue until the
start of surgery

An intraoperative laparoscopic view showing a surgical site. A blue instrument is visible in the center, and a black line is drawn across the field. The surrounding tissue is reddish and moist.

And sometimes the problem
becomes apparent in the middle
of the case!

In the presence of zonular weakness, you can't just put an IOL in the sulcus!

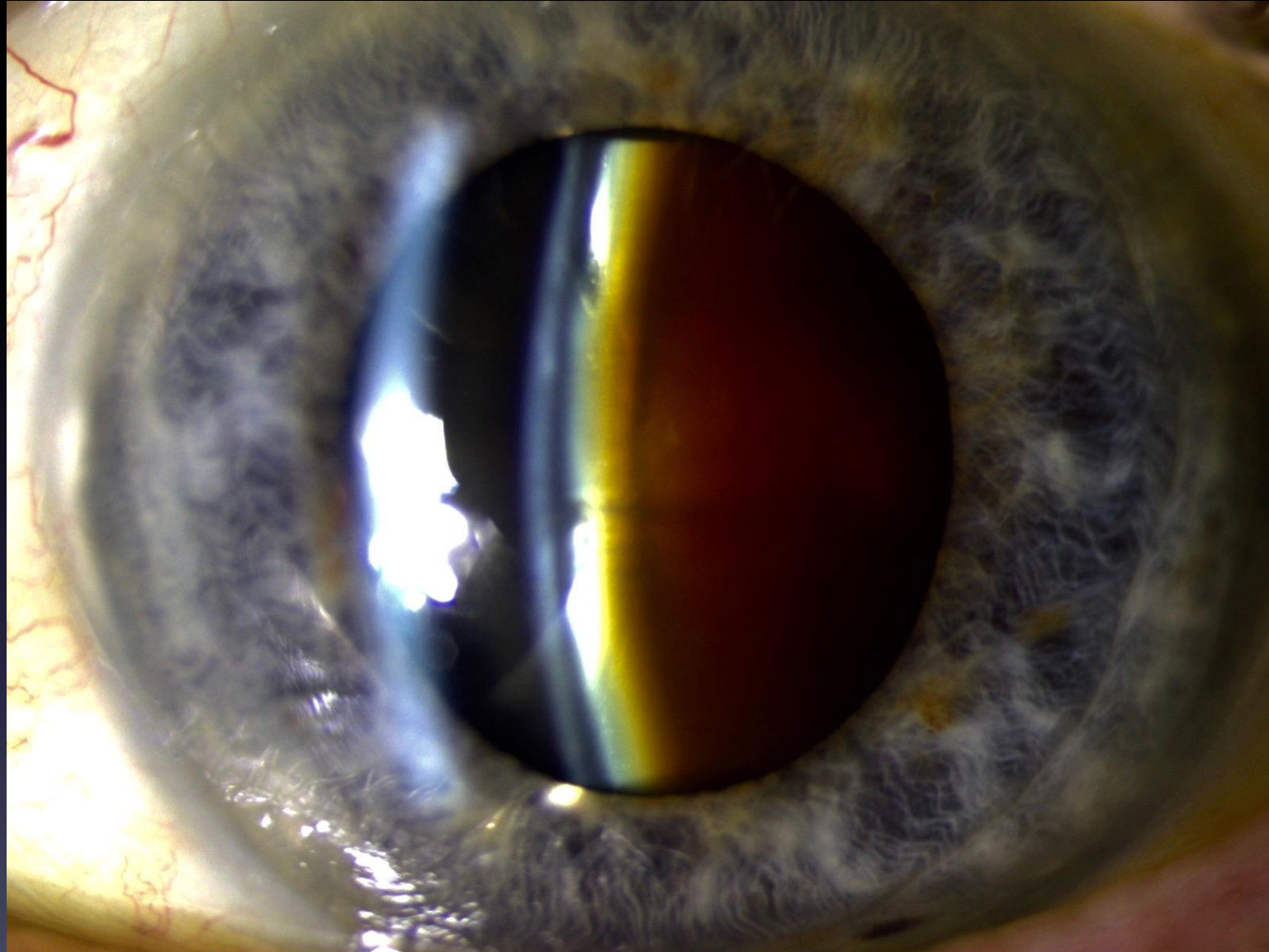
It WILL dislocate over time



What about Catarocks?

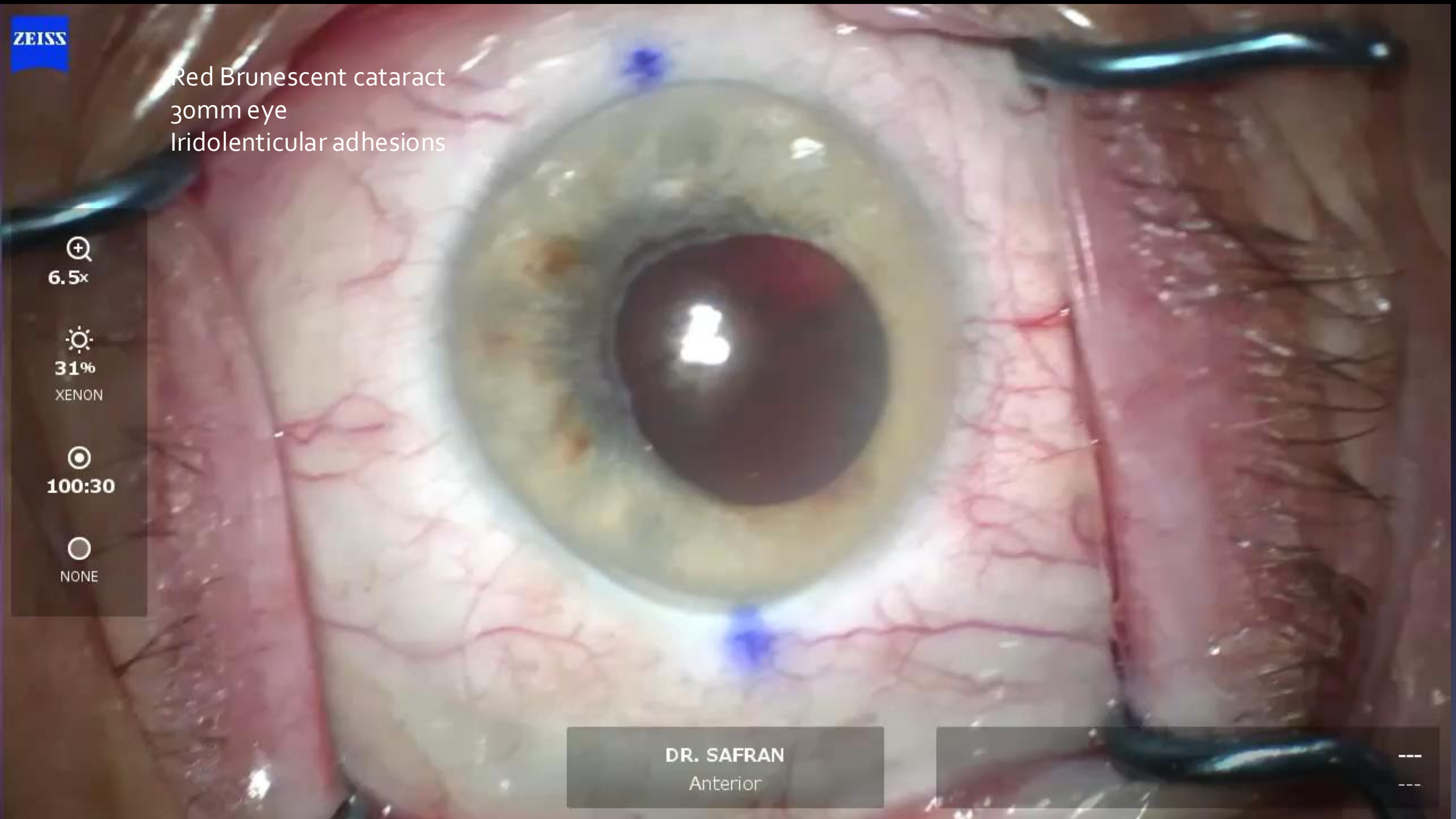
99% of cases I go right to horizontal chopping but for these super dense cataracts I do "Reverse slope sculpting" prior to chopping

Create a deep wide central groove, split the lens from the bottom up and then chop.



Why a deep central groove?

- Remove densest part of nucleus farthest away from endothelium.
(Endothelial cell sparing)
- Allows you to get down deep into nucleus to split the lens from the bottom up and get through the thick posterior plate
- Create room to mobilize fragments and avoid “jigsaw effect”
(where split nucleus comes back together and locks pieces in place)



Red Brunescant cataract
30mm eye
Iridolenticular adhesions



6.5x



31%

XENON



100:30



NONE

DR. SAFRAN

Anterior



Capsule Tension Rings in Zonular deficiency

- Gives the capsular bag structural integrity: a frame for the capsular bag
- Distributes the support of the remaining zonules more evenly so a focal deficit less likely to cause problems
- I prefer to place after I/A, prior to insertion of IOL
- Gives you a structure you can lasso down the road if needed

What a CTR won't do...

Replace missing zonules. The CTR is just a frame but you may need a hook to hang it on the wall!

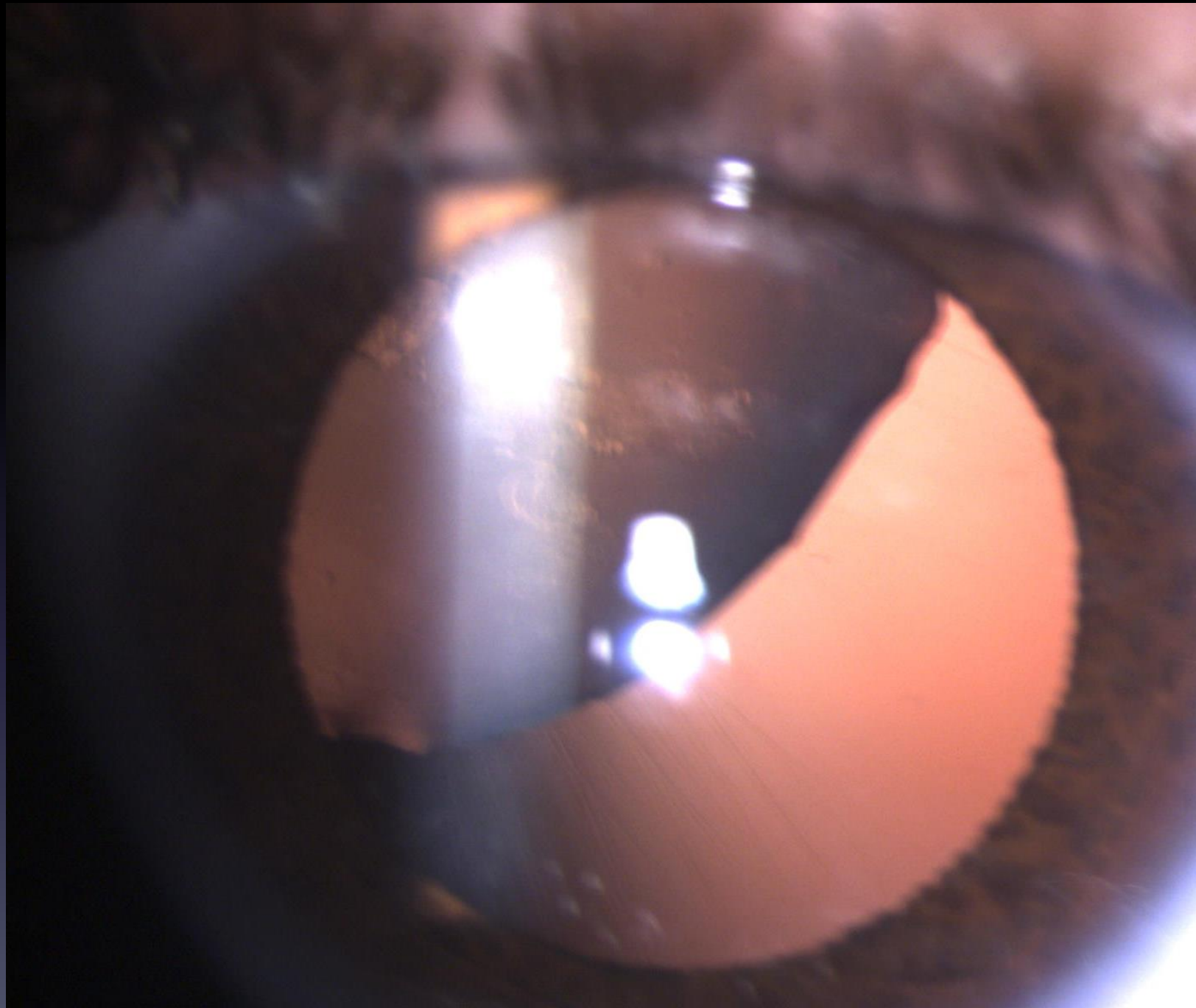


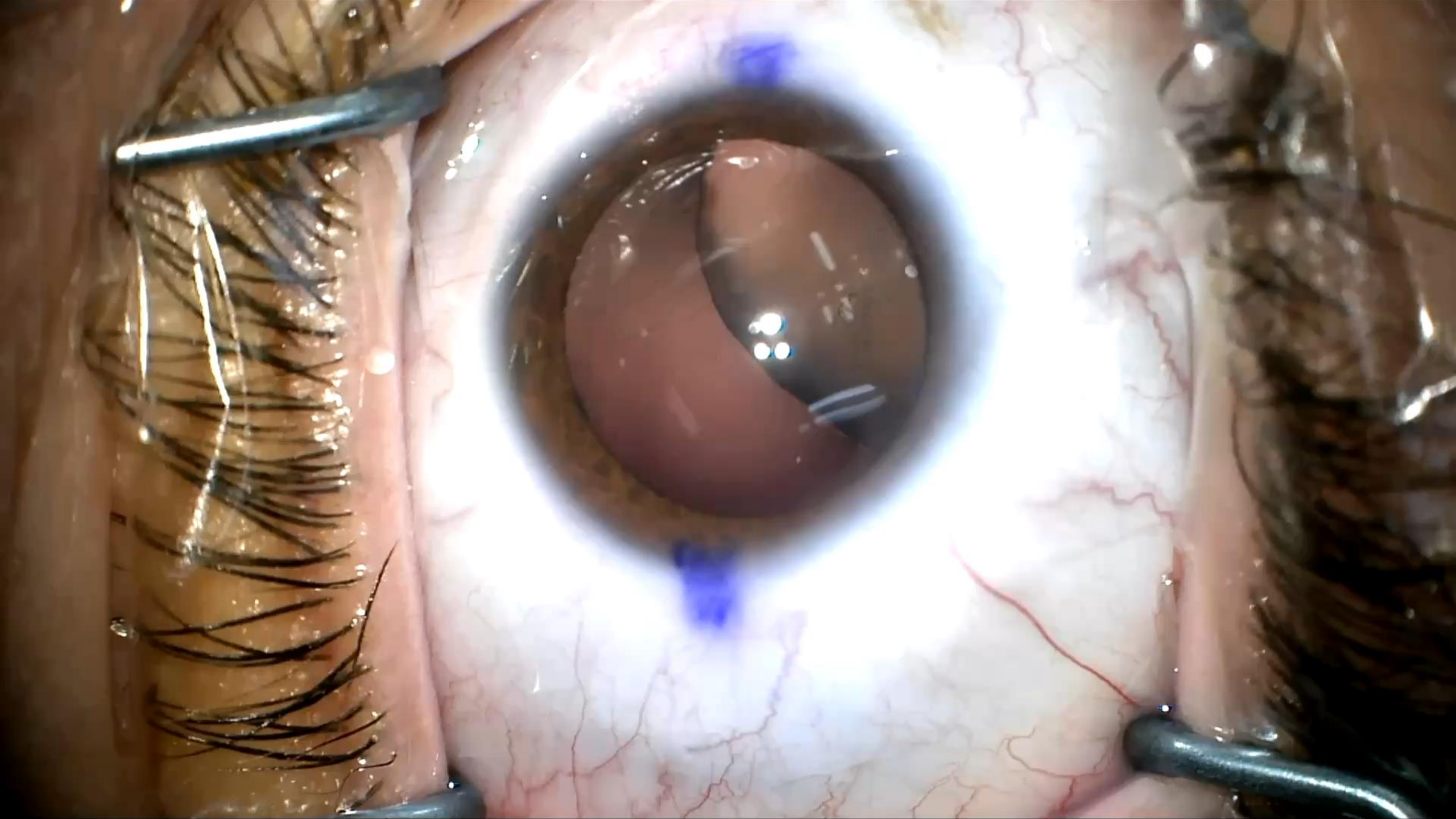
For Cataract with zonular dialysis

Place permanent scleral sutured support for capsular bag at the point of maximum zonular weakness

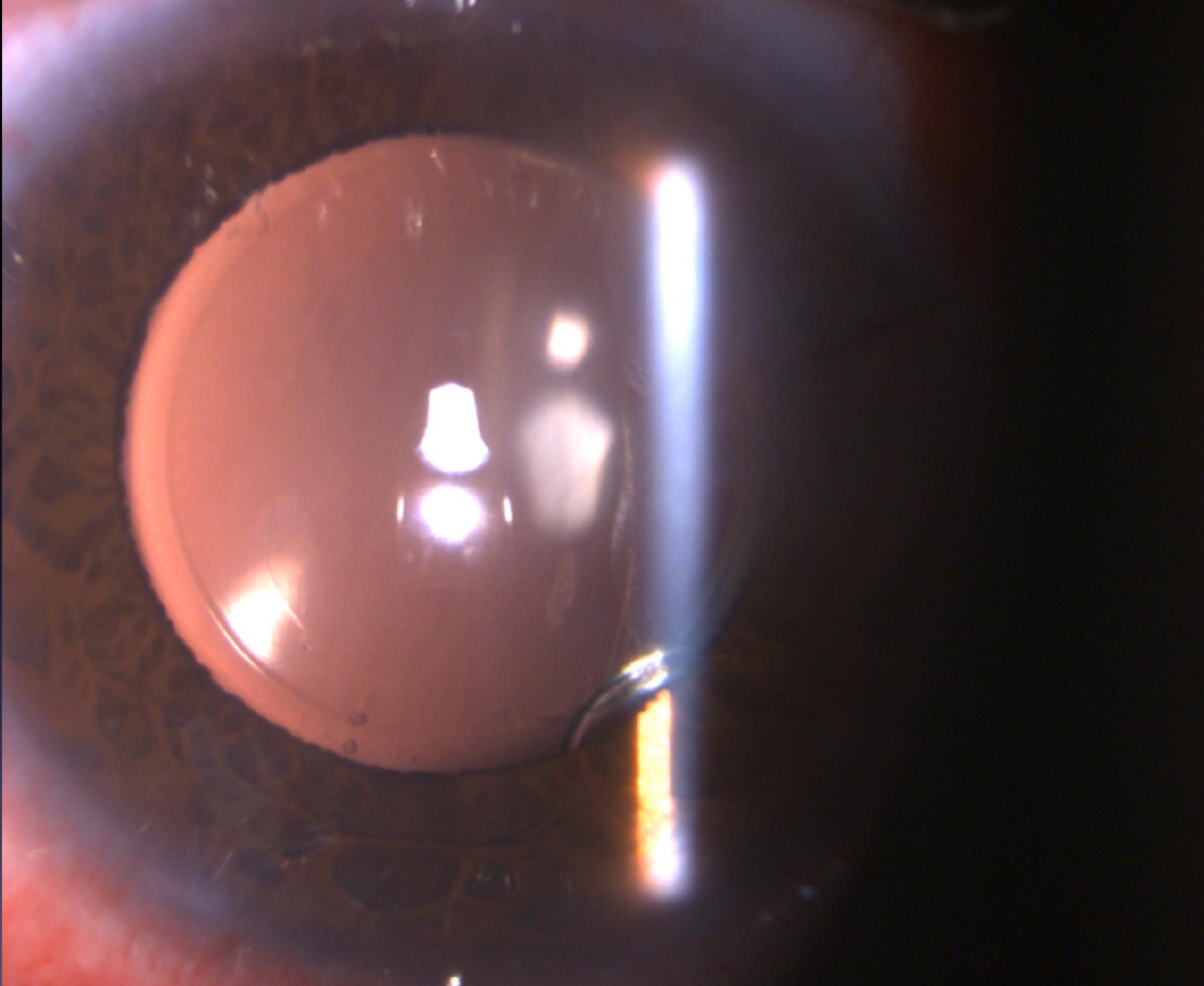
**19 year old girl from
Antigua**

the other eye has profound amblyopia

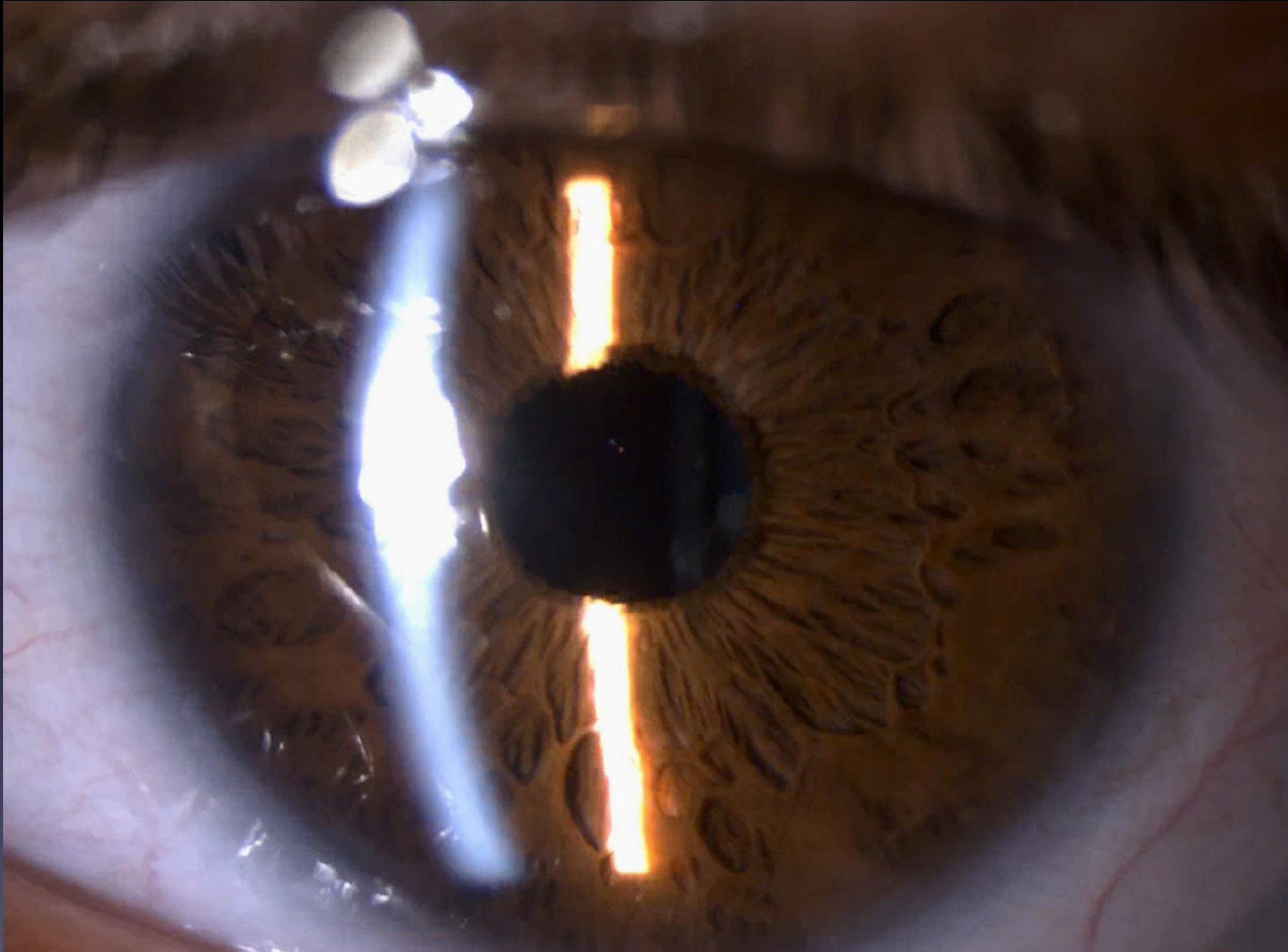




Day 1 20/40 sc

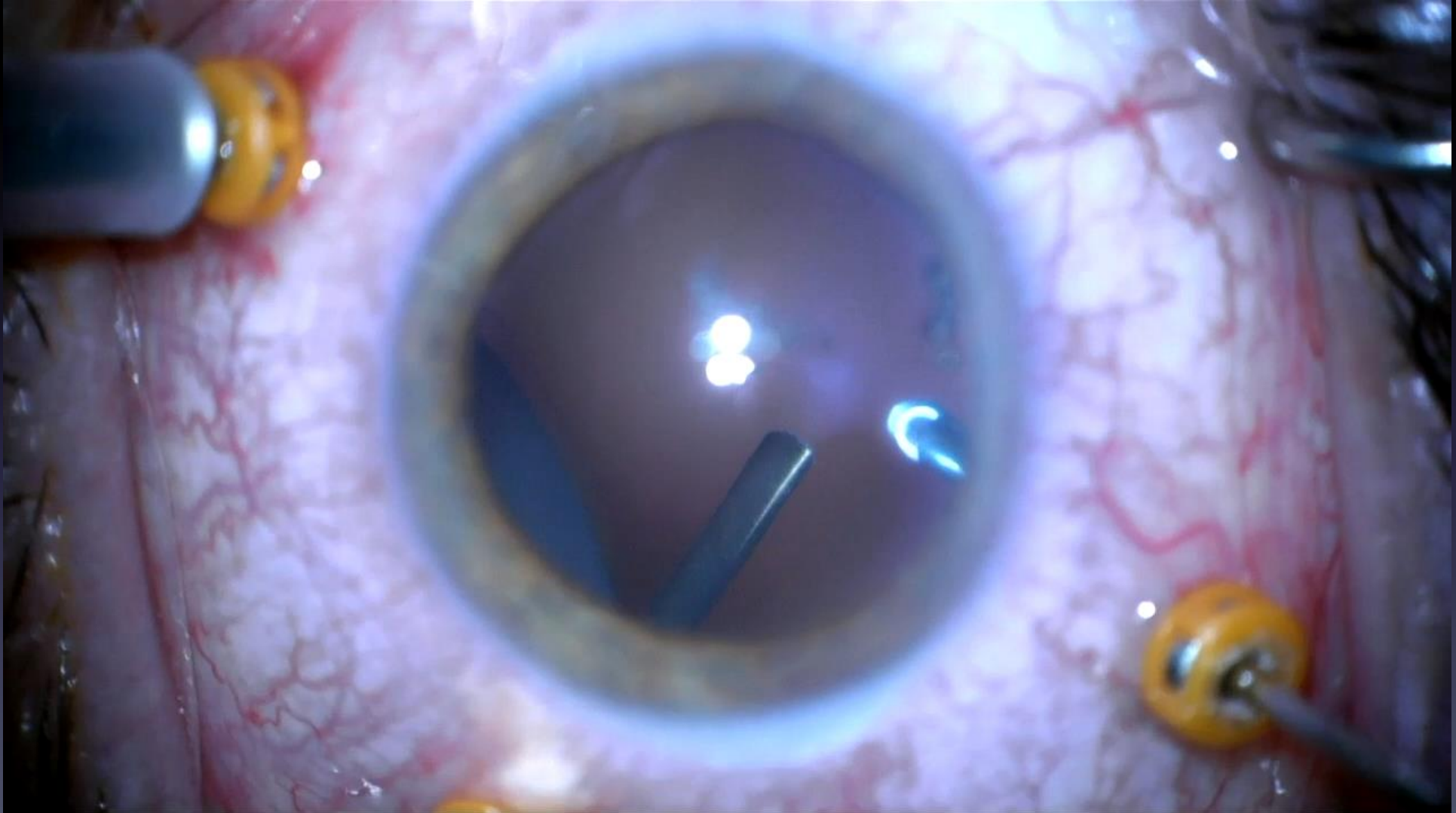


2 years post op: 20/20 sc



If you see evidence of a loose lens.....

Examine the patient lying flat in the office BEFORE you take them to the O.R.!



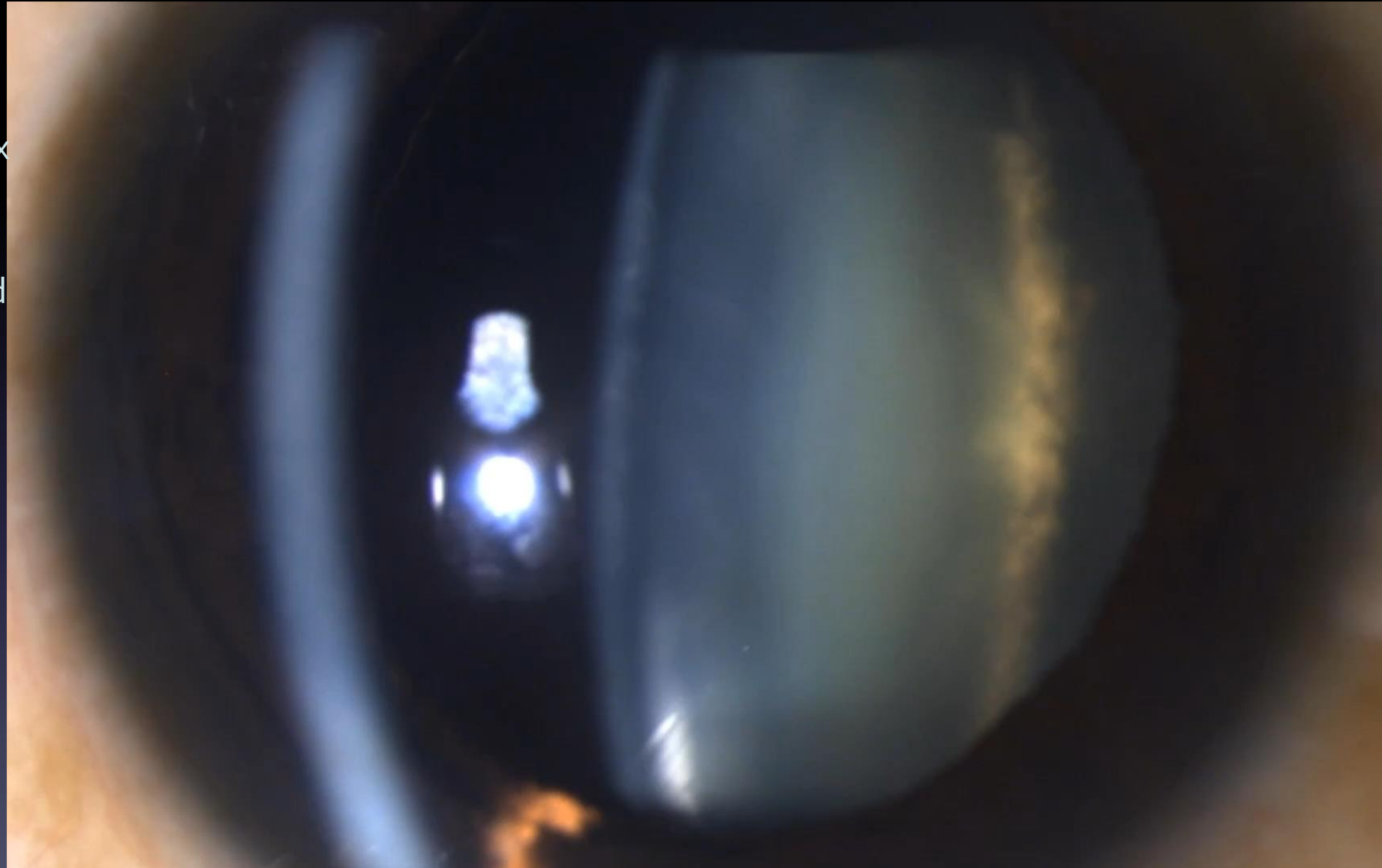
If there is a delay in taking the
patient to surgery.....

Re evaluate prior to O.R.!

Traumatic cataract 2022

Plan: Capsule retractors/goretex
sutured ring/Toric IOL

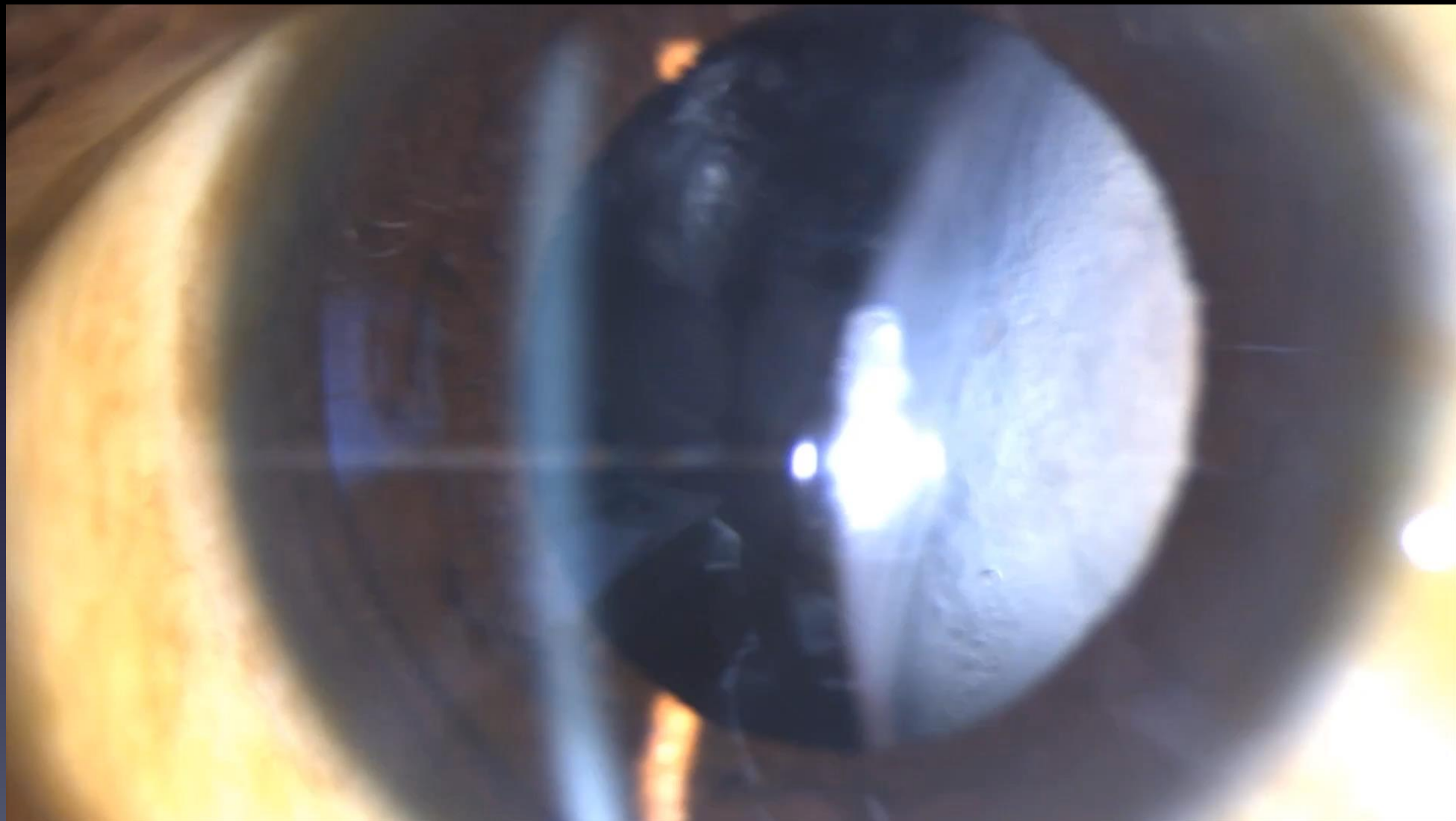
Patient got COVID, case delayed

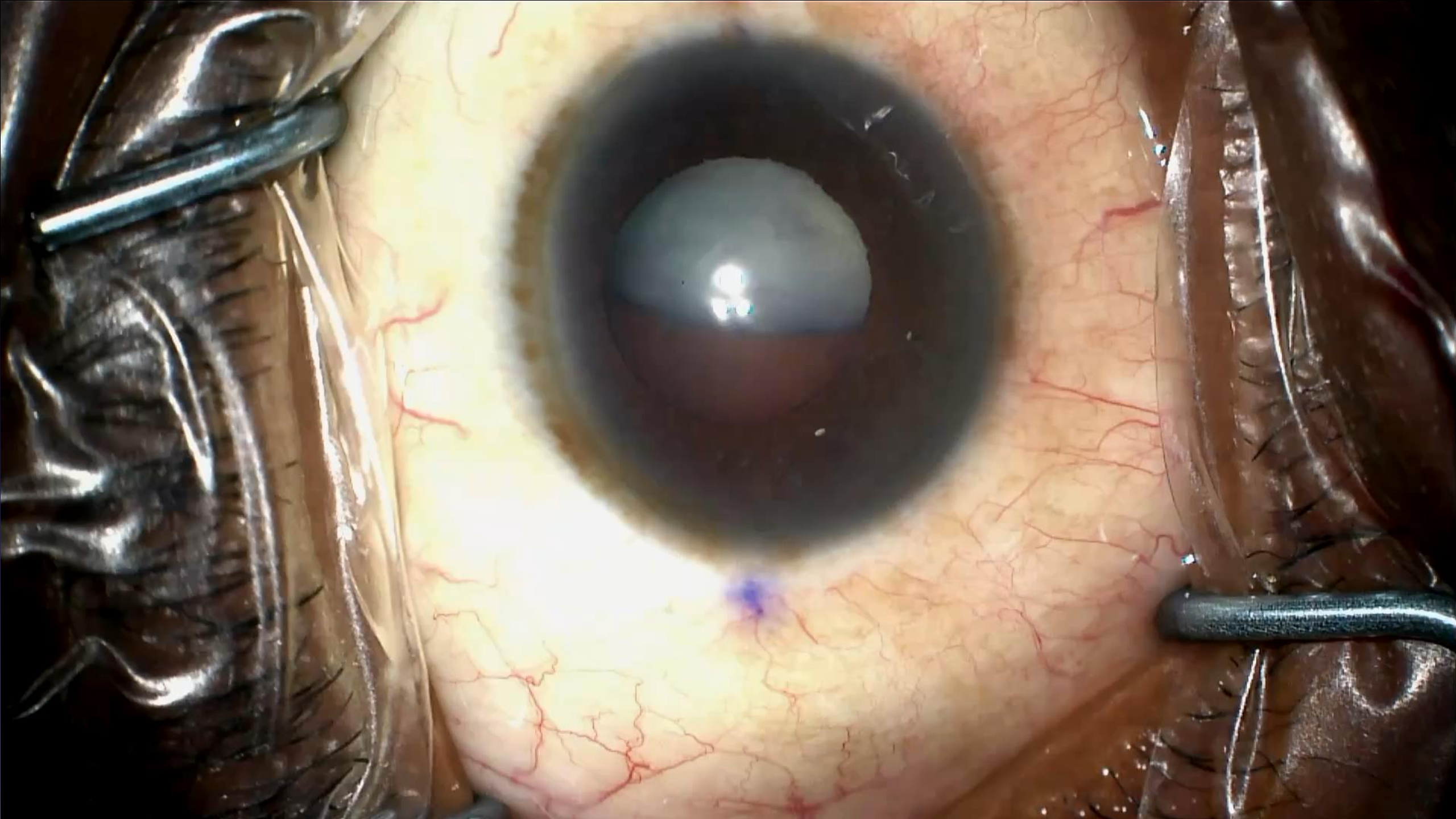


Same patient 2023

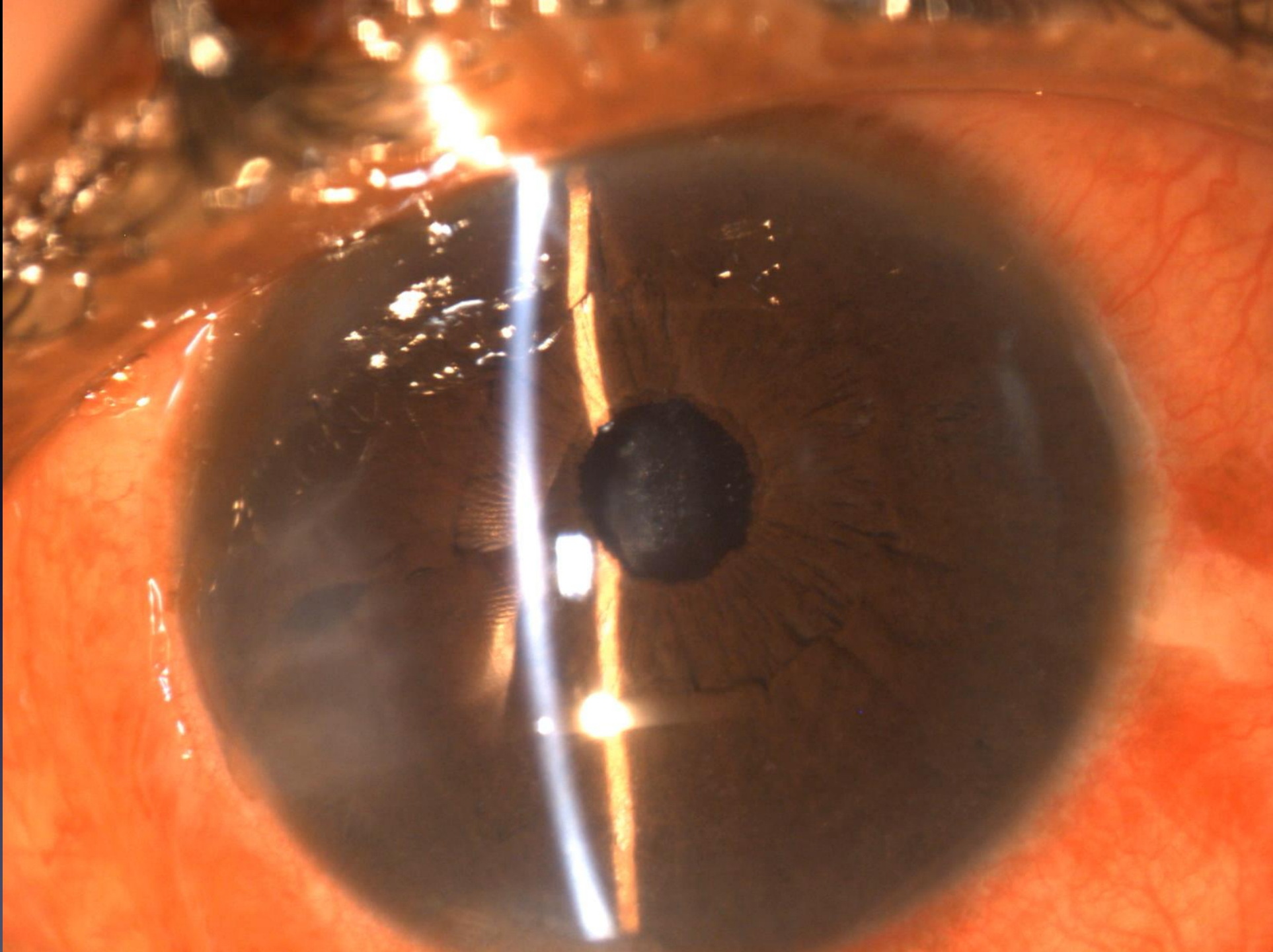
Lens now swinging back,
vitreous in AC,
white/hypermature

Plan now
PPV/PPL/Yaname





Day 1 post op



My son Max calls me:

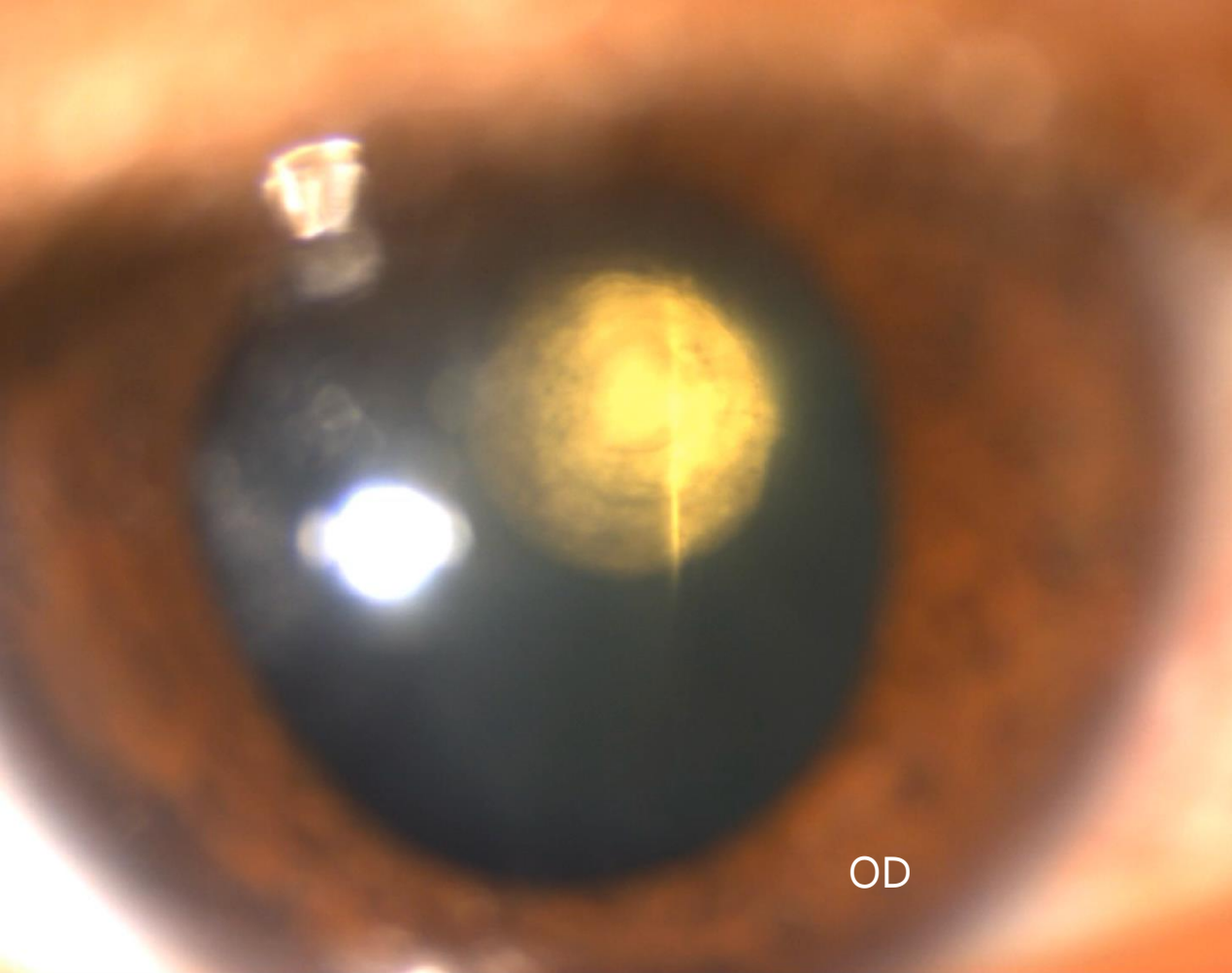
"Hey Dad...my future father
in law was told he needs
cataract surgery"

"Would like to meet you and have it
done before the wedding"

"Sure....no problem....I'd love to meet him"

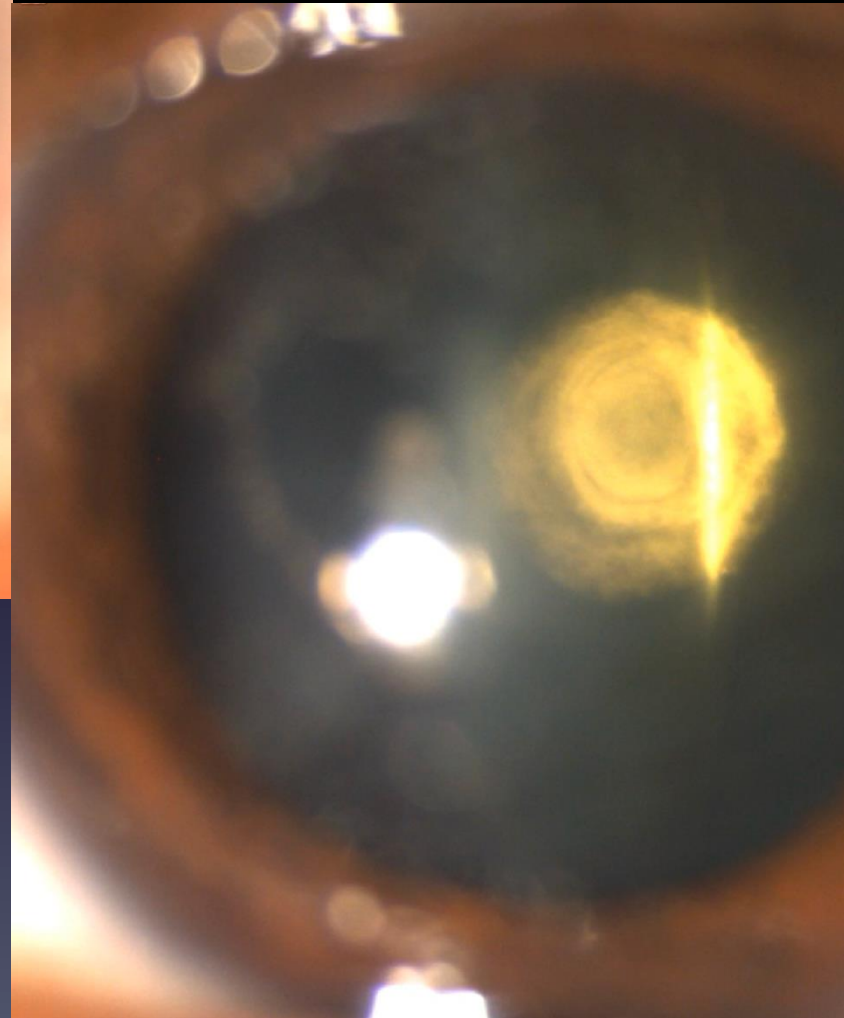


Polar cataracts!



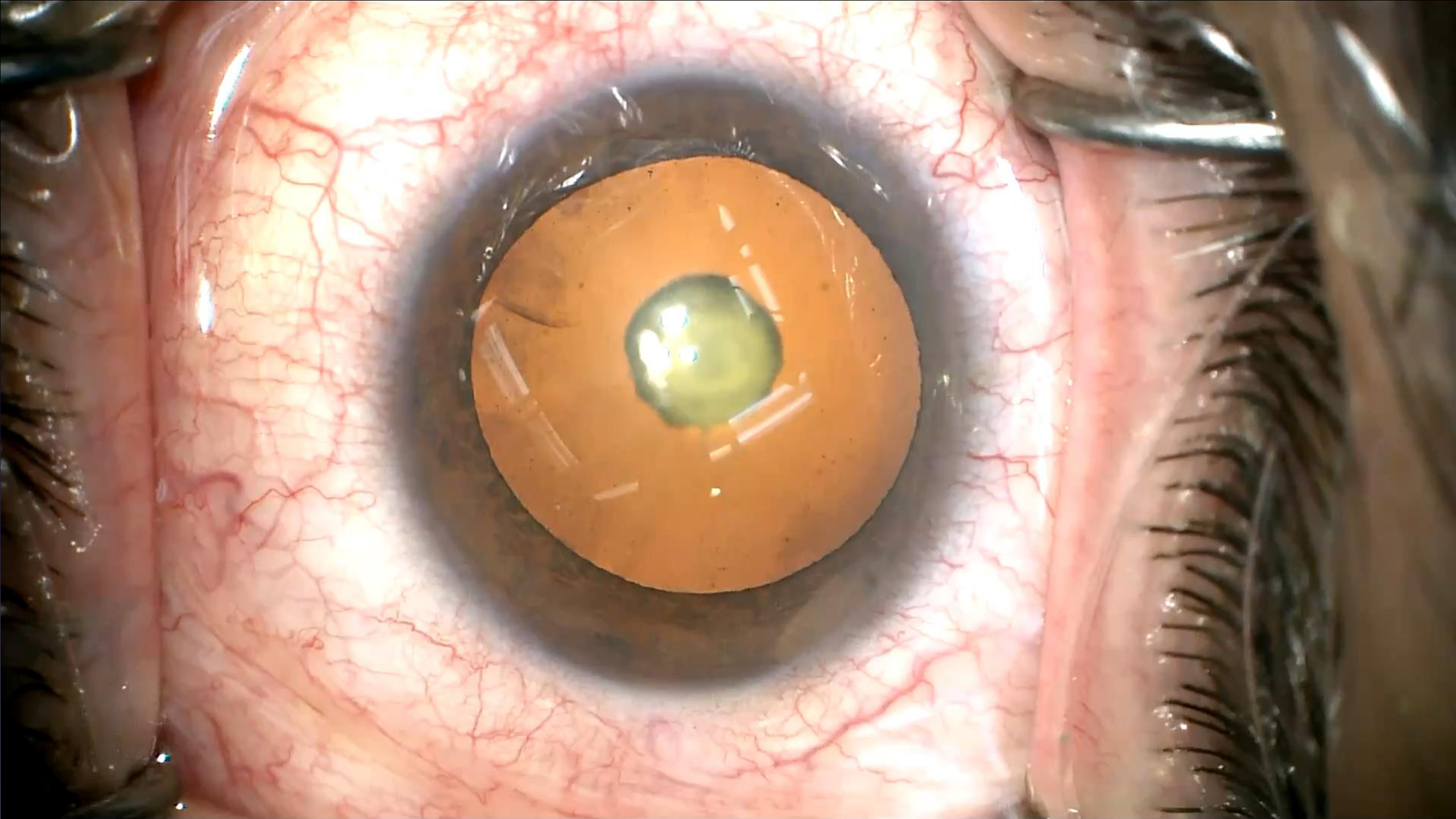
OD

Meet my Mechutan for first time as patient in office and he has these.....

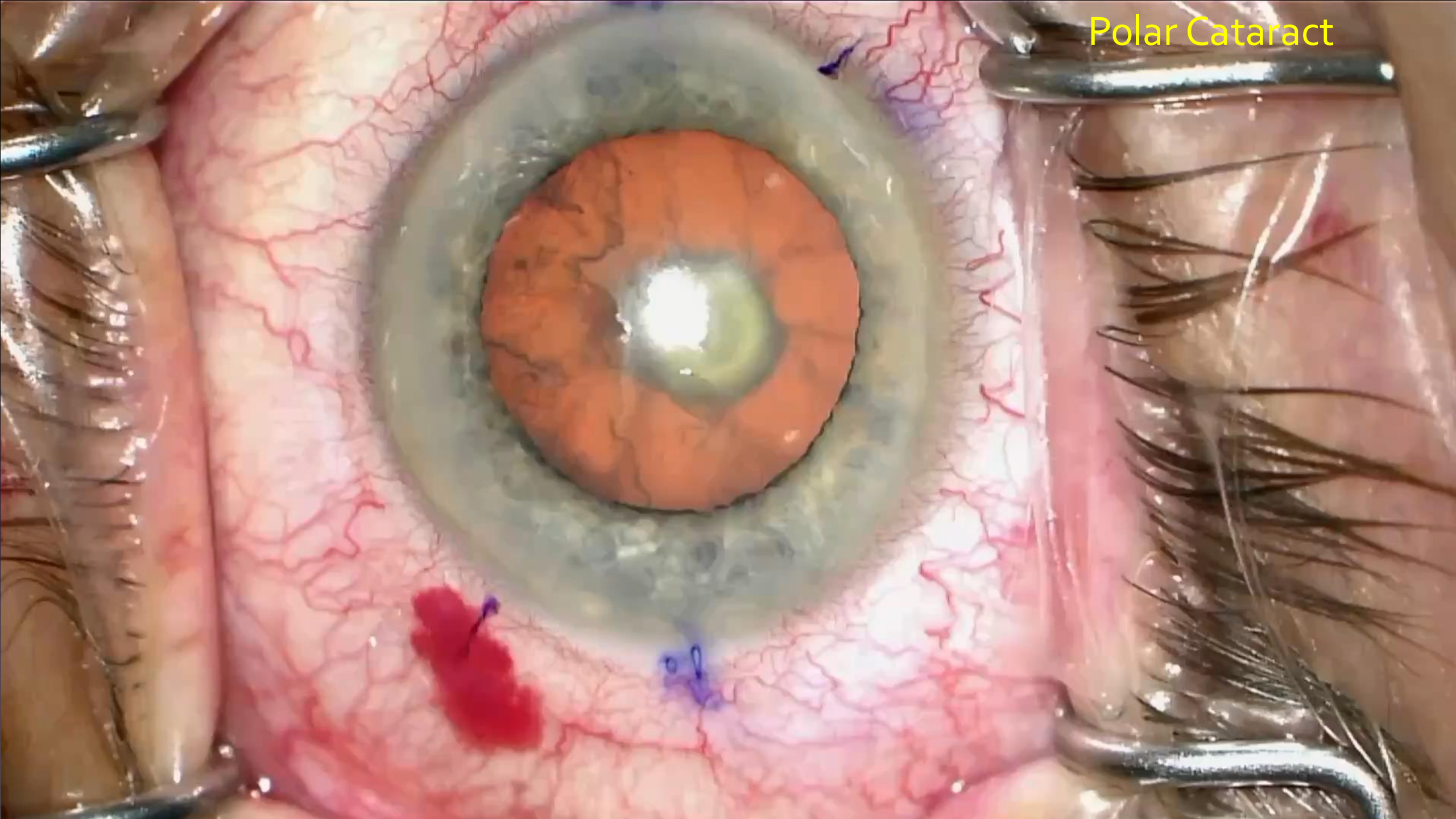


"Oy Gevalt!"

OS



Polar Cataract



Thank You!

