

Anterior segment surgery plus: pars plana approach

Middle ground or out of bounds?

Steven G. Safran MD

NOA 2026

No financial disclosures relative
to this talk

Pars Plana approach means:

- Working in a closed system with infusion control of IOP
- Working both from in front of and behind the lens (through pars plana trocars)
- Taking advantage of posterior visualization instrumentation and techniques.
- Using infusion and the vitrector as a surgical tool

Video Journal of Ophthalmology: 1996
"Nightmare Cases from Hell" series
Case from 1994

Complications and Comments: Deep Six Cataract

Steven G. Safran, MD



Incorporating a pars plana approach has hugely expanded my options for managing complex cases:

And reduced my stress dealing with them!

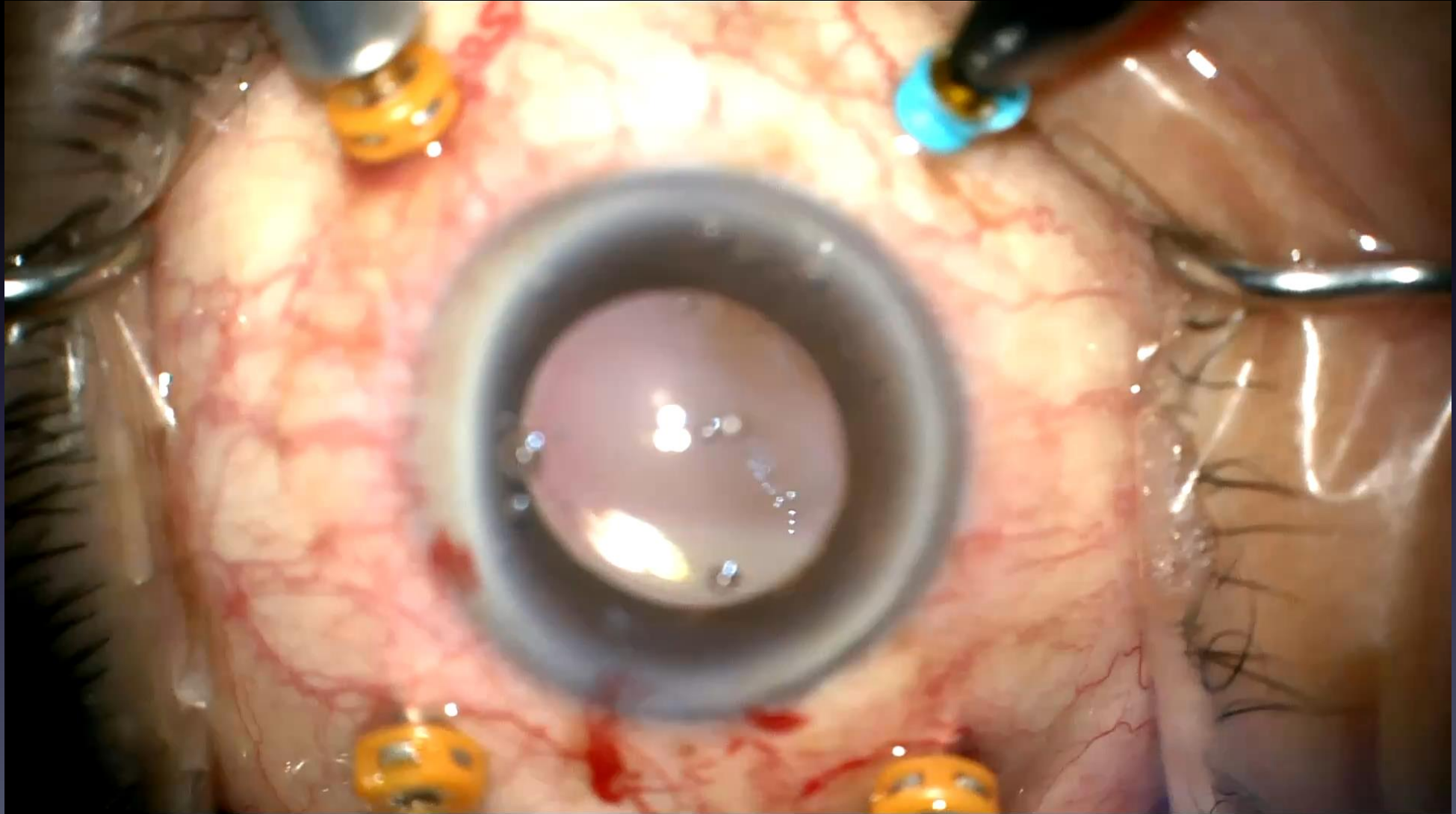


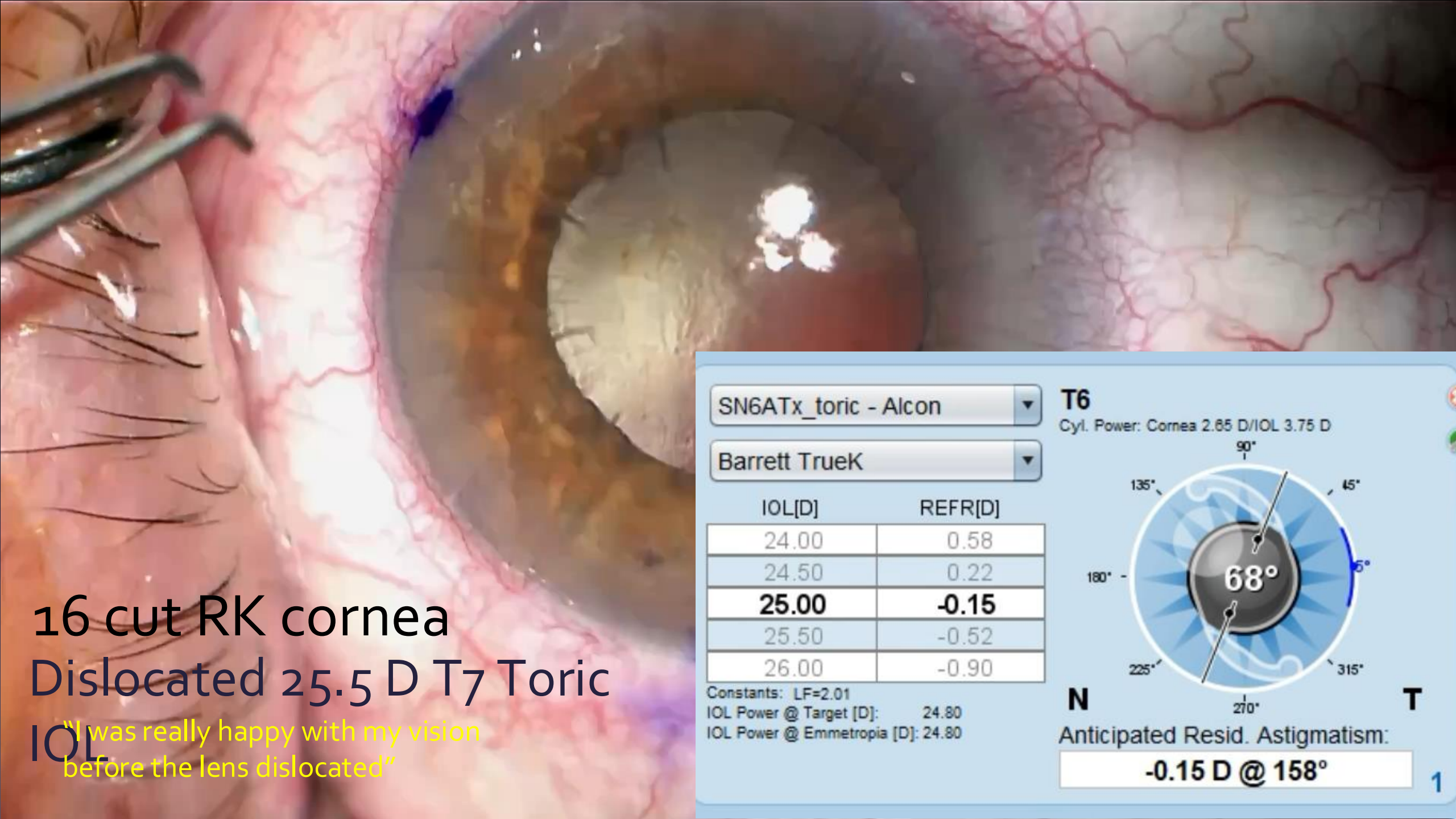
Referred by VR surgeon for UGH syndrome

A lens that
looks like this
in the
office.....



May look like this when patient comes in for surgery a few weeks later!





16 cut RK cornea
Dislocated 25.5 D T7 Toric
IOL

"I was really happy with my vision
before the lens dislocated"

SN6ATx_toric - Alcon

Barrett TrueK

IOL[D]	REFR[D]
24.00	0.58
24.50	0.22
25.00	-0.15
25.50	-0.52
26.00	-0.90

Constants: LF=2.01
IOL Power @ Target [D]: 24.80
IOL Power @ Emmetropia [D]: 24.80

T6

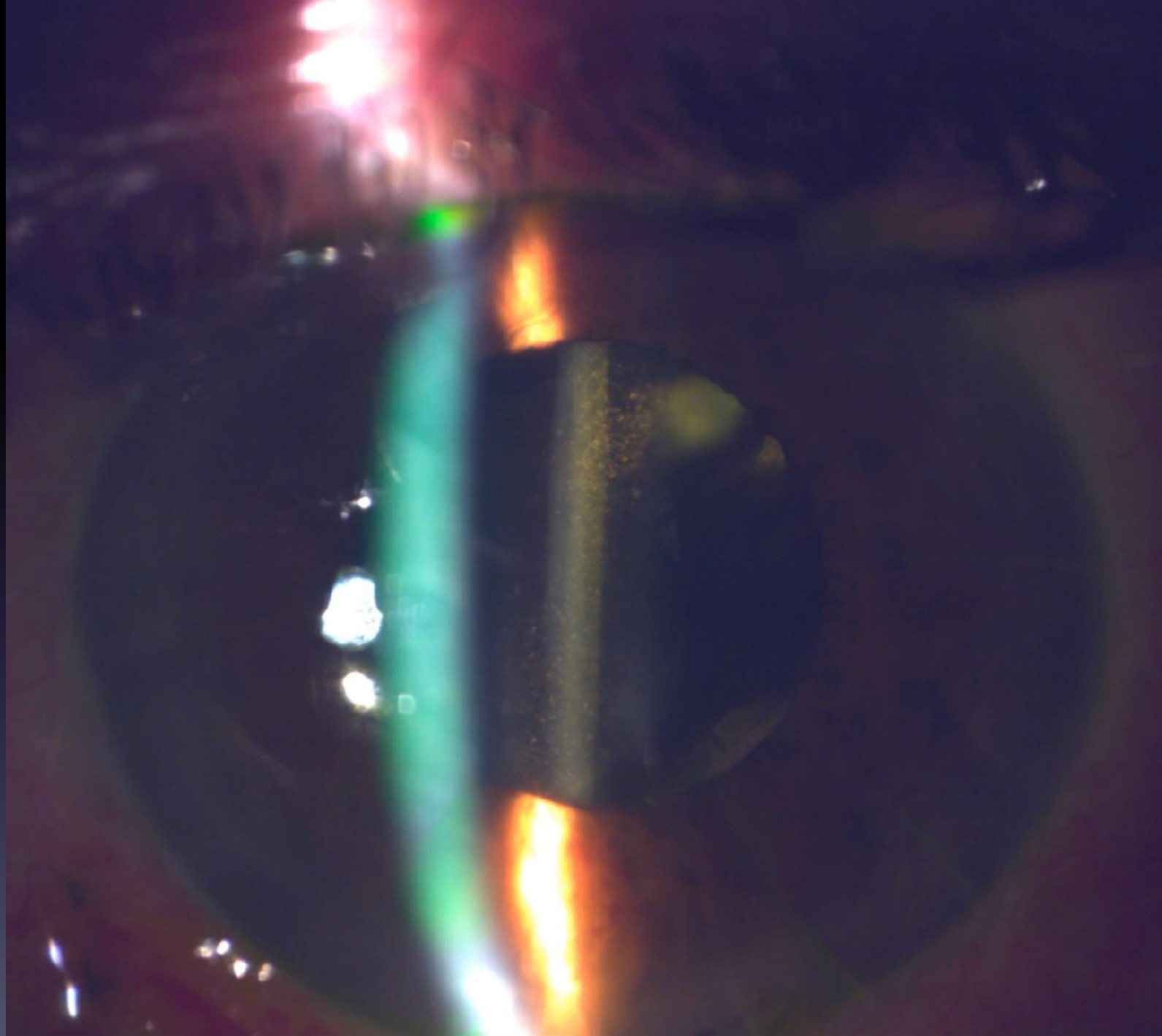
Cyl. Power: Cornea 2.65 D/IOL 3.75 D

Anticipated Resid. Astigmatism:
-0.15 D @ 158°

Day 1 post op

"Dr Safran ,Good afternoon,I can't
thank you enough!! You are my Angel

😊 We just got home 🏠 Words
cannot express my many thanks :
Mike"



Monocular patient referred with Failing 50 year old PK graft

Cornea edema/stromal haze/15d astigmatism

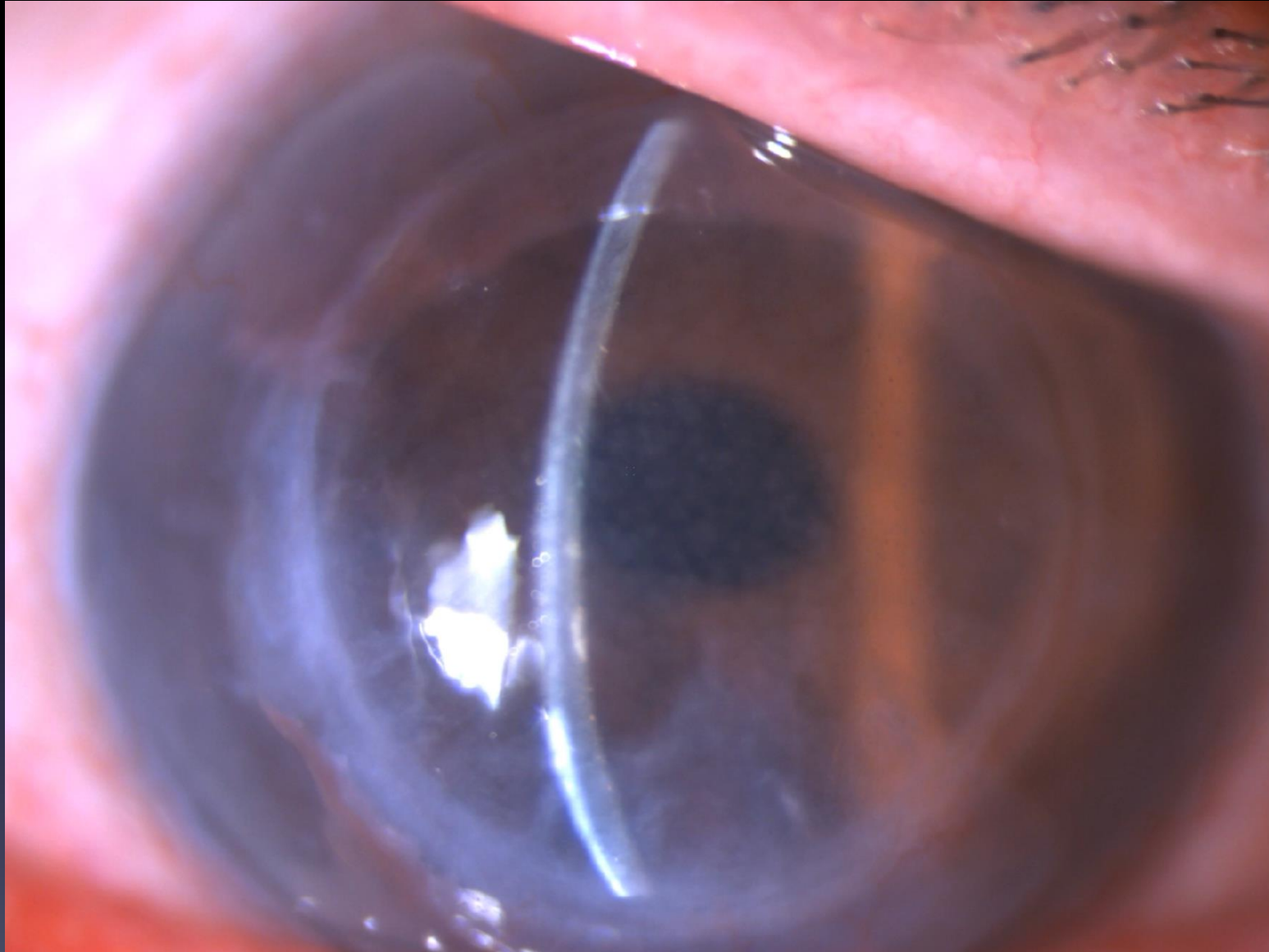
Lens bag complex has dislocated onto retina

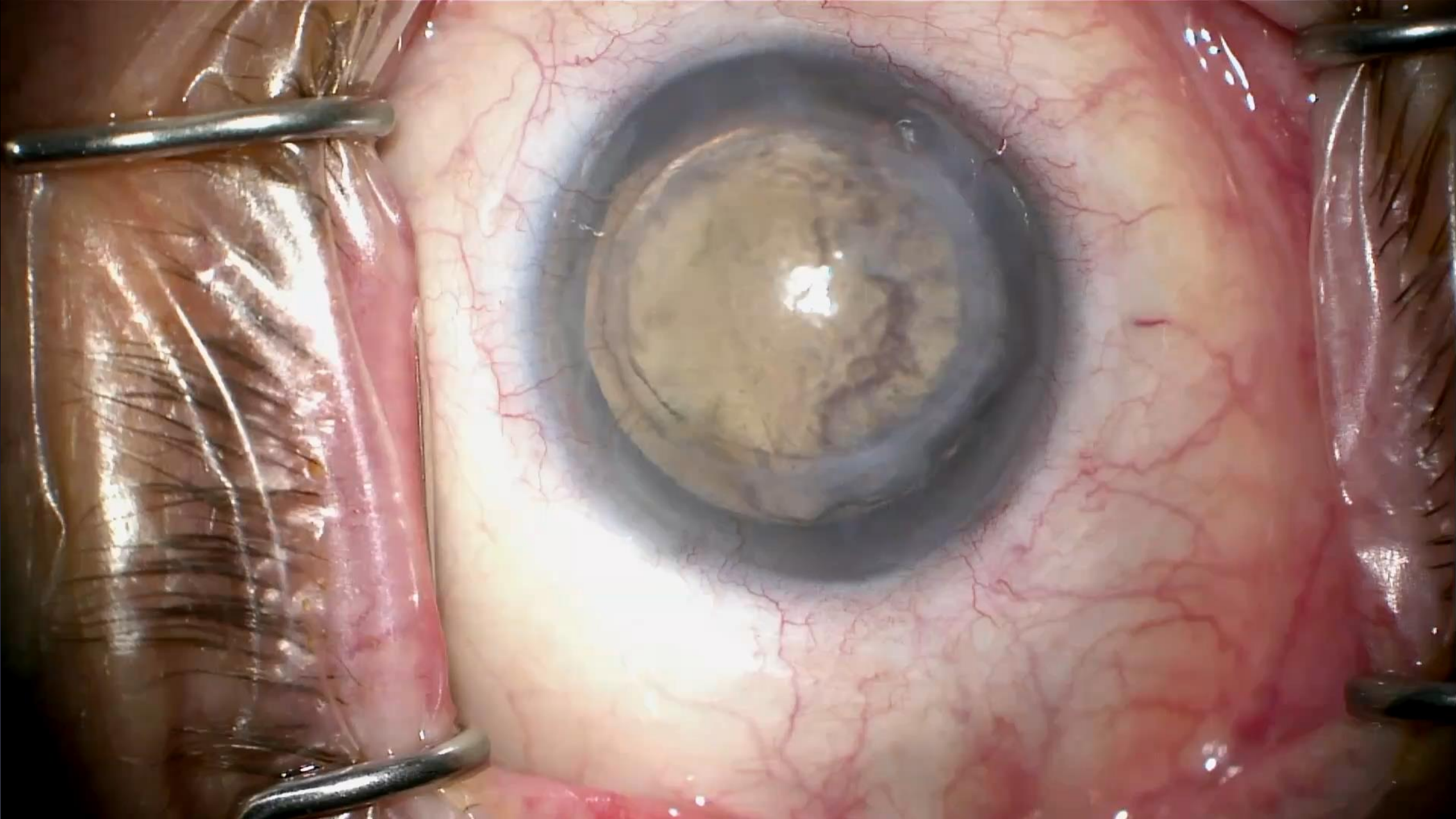
AL=27mm h/o buckle (no vitrectomy) for Mac

First thought is to just do the PK:

Stage the IOL exchange
20/80 cc but vision getting worse: difficulty

Which is much safer? Closed
system or open sky vitrectomy?
Other eye is bare LP....chronic RD





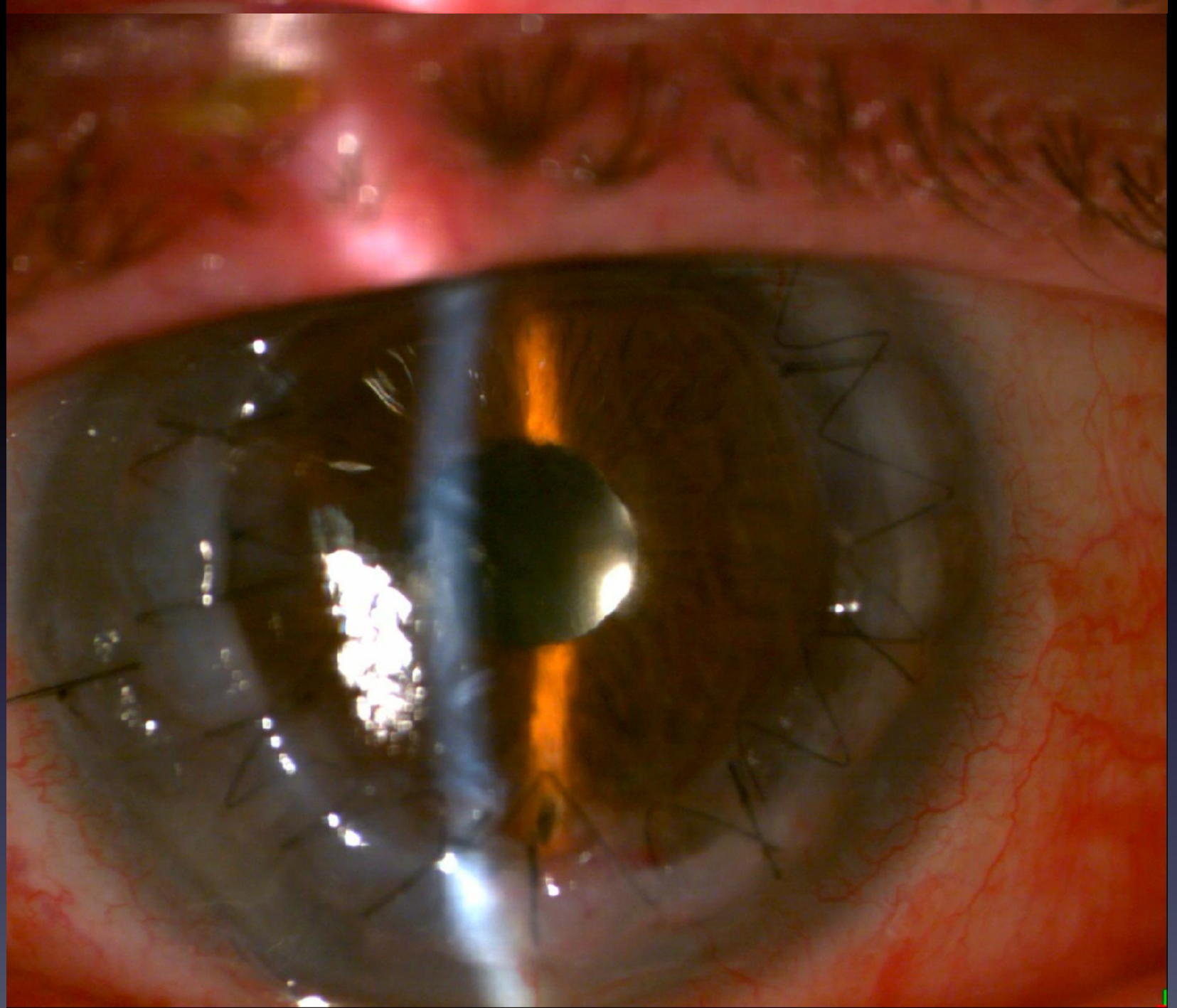
Interview with patient in
recovery area after surgery



Day 1 post op

20/80 Sc

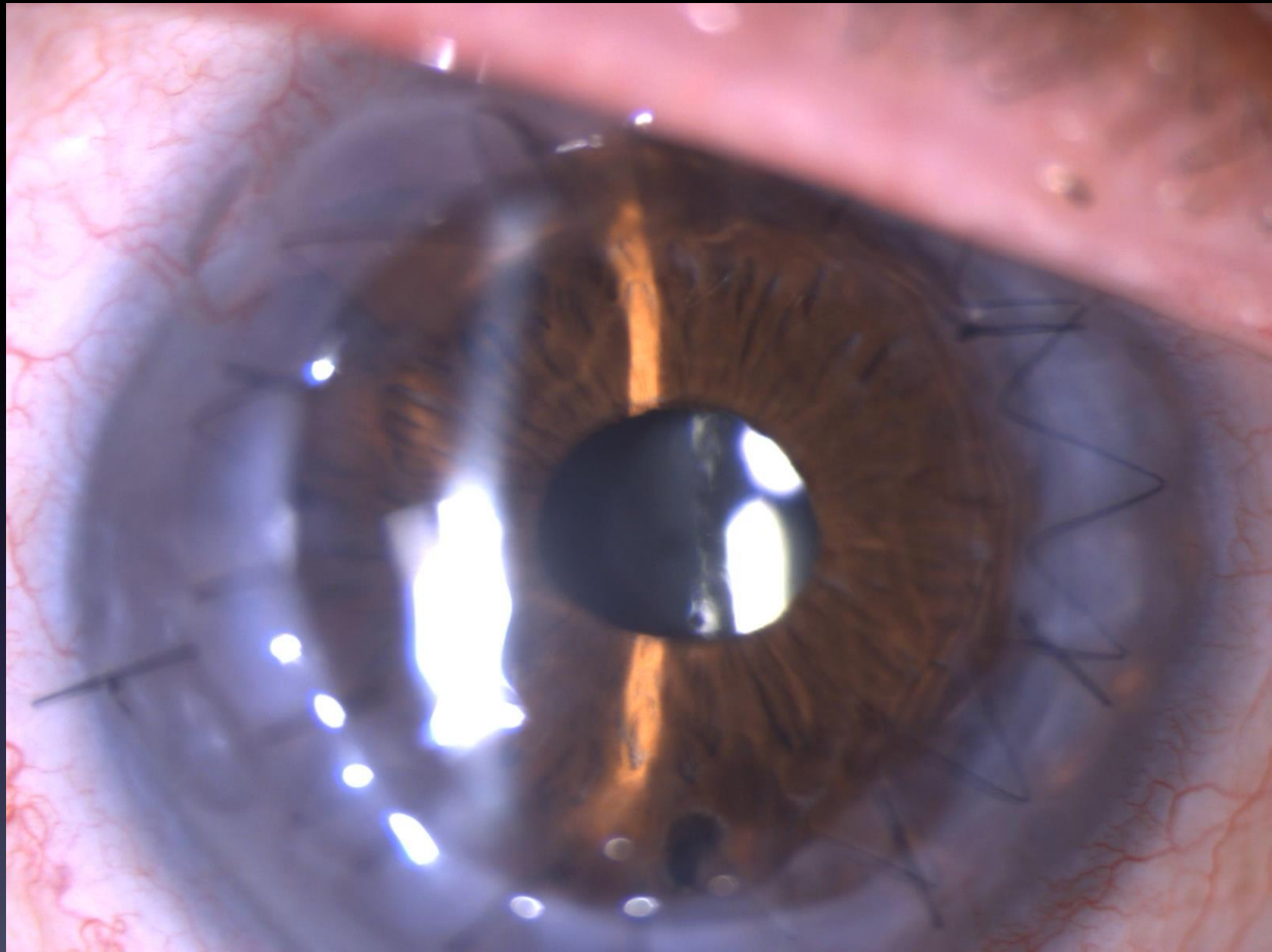
Patient very happy!



1 month post op

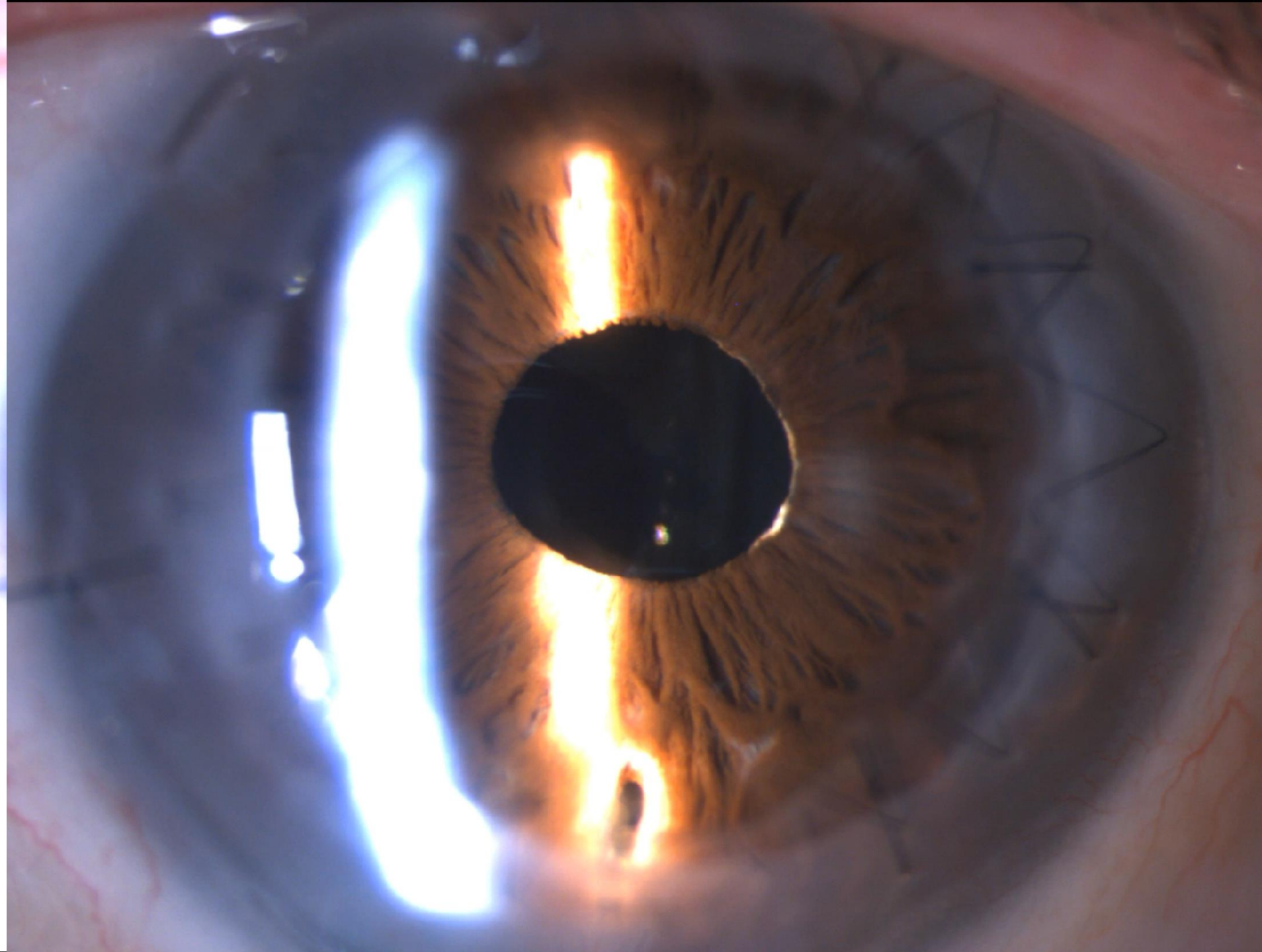
20/40 uncorrected

R Average(REF)
S 0.00 C -1.00 A 124



1 year post op

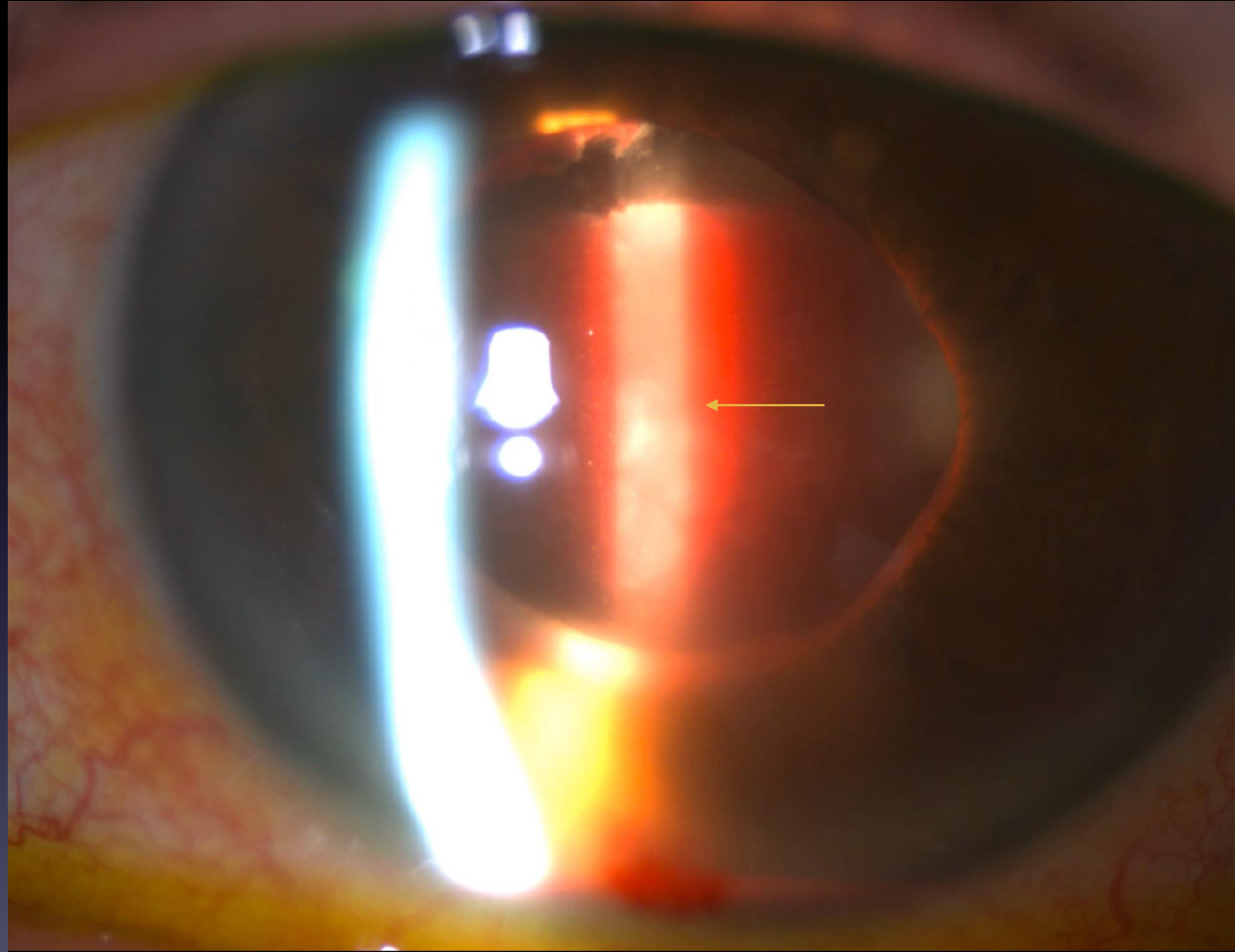
20/25

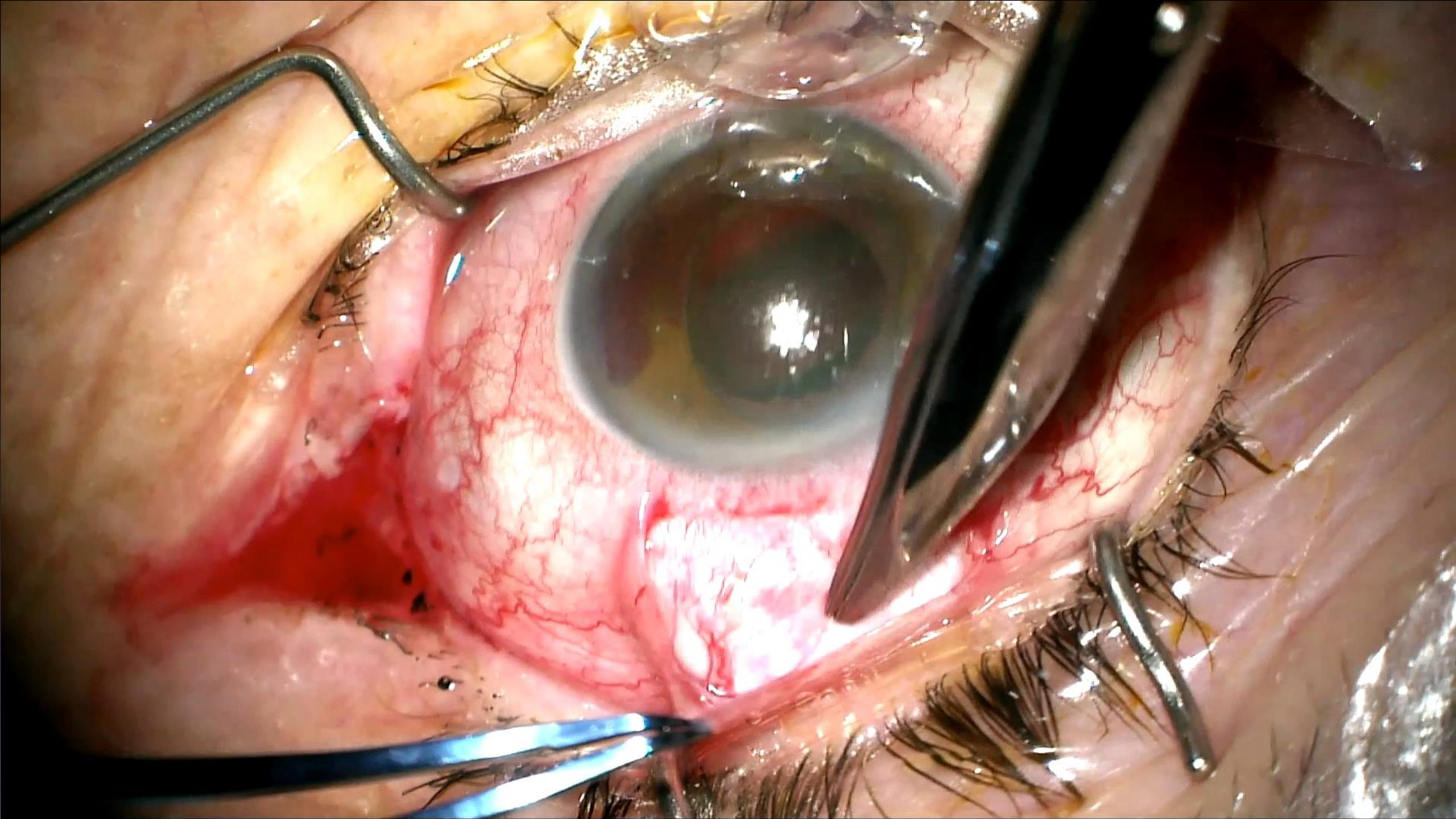


**65 year old woman
referred 1 month after
phaco/goniotomy**

HM vision

Total Hyphema after initial surgery
Referring doctor did AC washout at 2
weeks but patient bled again
Still with intracapsular blood behind
IOL
IOP 48 on max glaucoma meds
(including Diamox)





Day 1 post op

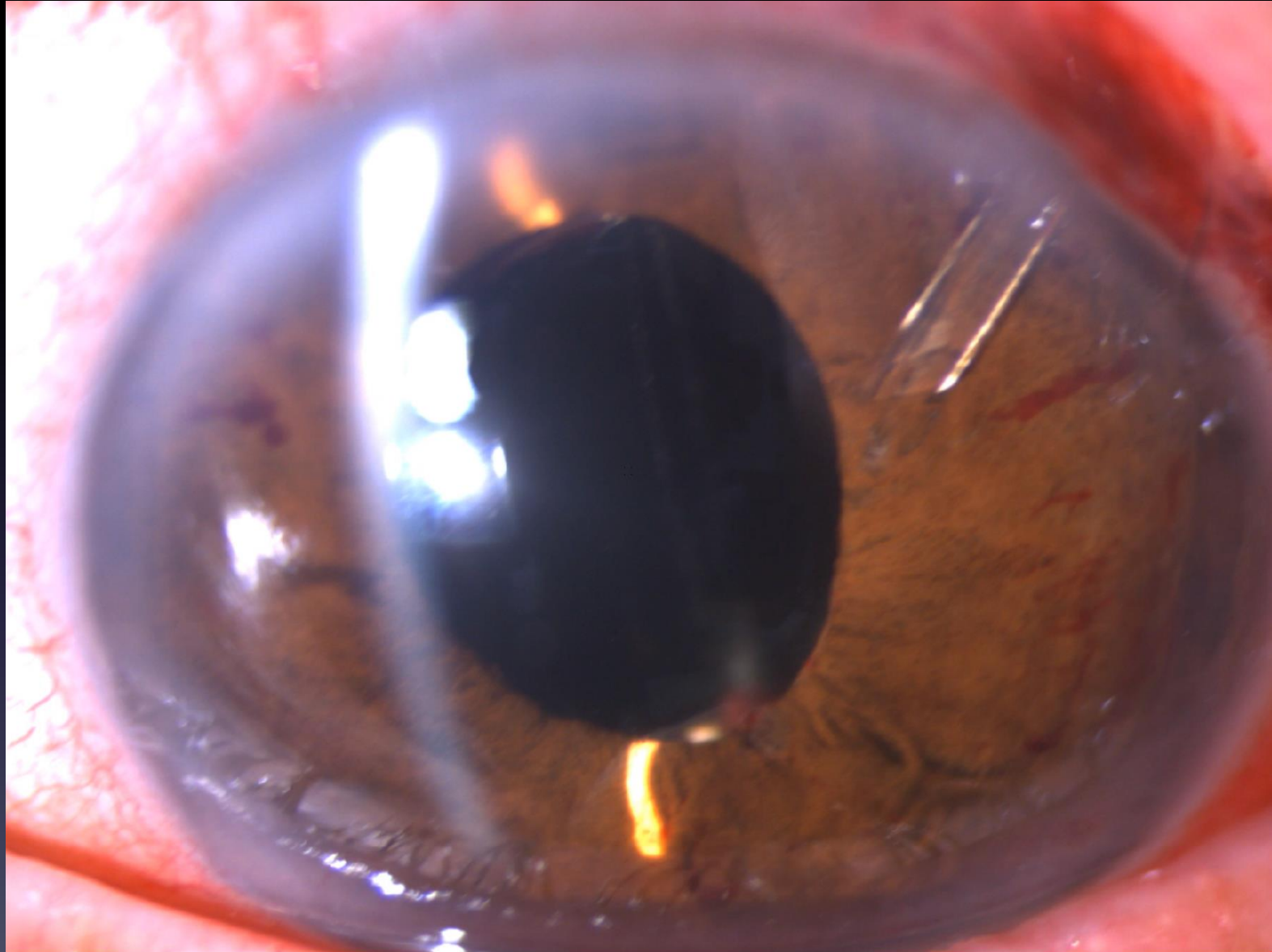
20/50 uncorrected

IOP=14

Referred back to glaucoma specialist
cataract surgeon:

1 month later get email from referring doc:

"I just saw Debra (hemorrhage lady) -- she looks amazing. She is off all glaucoma meds, IOP 16, BCVA is 20/20. Thank you so much!"



**Monocular patient referred
from UVA glaucoma dept.**

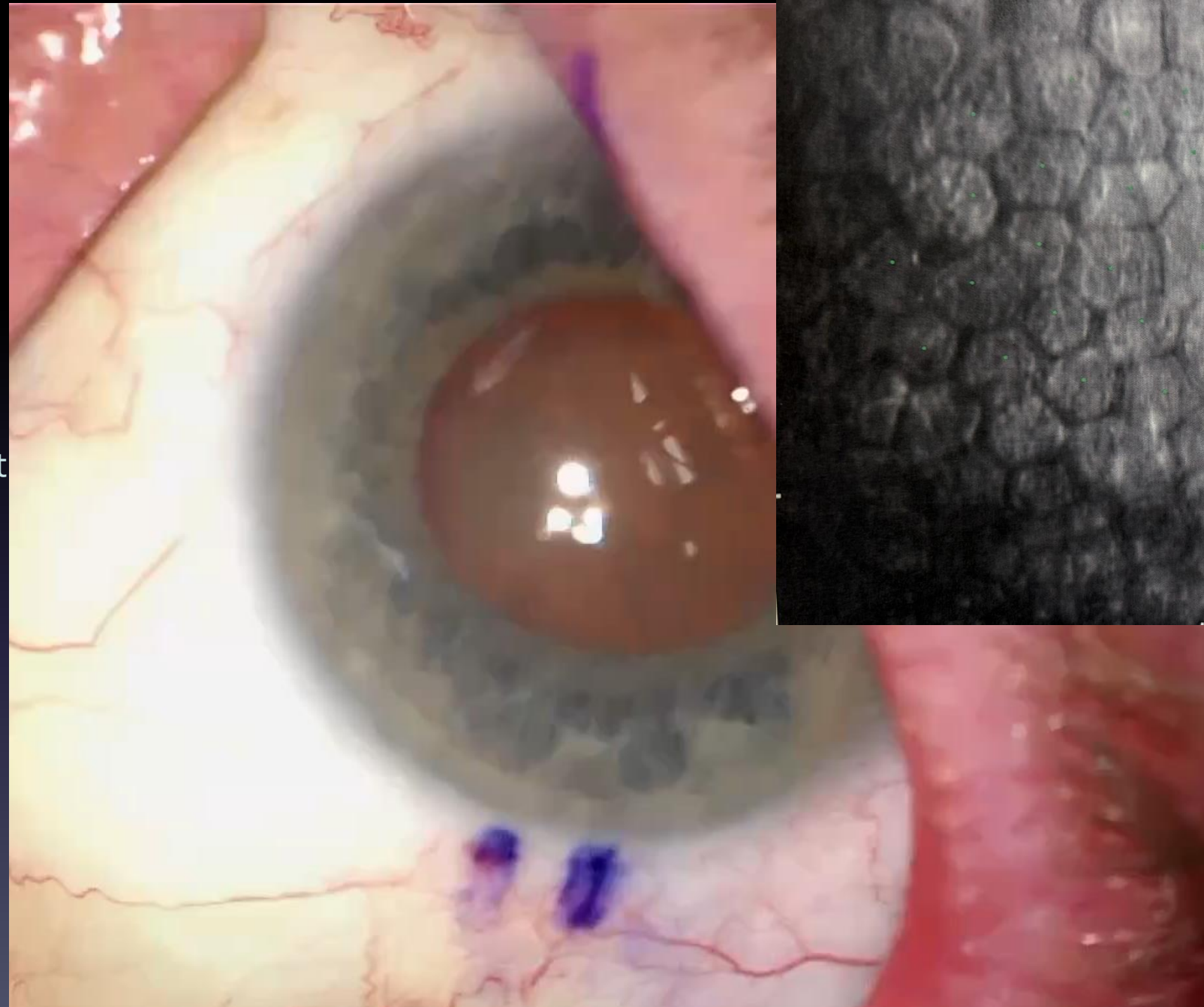
Severe PXS

Glaucoma: IOP =24 on max meds

Low endothelial cell count=800

Lens subluxated/bisecting pupil at slit
lamp

Vitreous herniating into AC



“Vision 20/20 uncorrected with IOP 16 today! He’s very excited about this.”

(text from referring doctor 1 month p/o)



Add a comment...



@jchalmers5669 1 month ago

This is my father in law’s eye. He’s in shock by how well he sees again!



1



Reply



• 2 replies



@jchalmers5669 1 month ago

Kudos and thanks to Dr. Safran. Truly miraculous. (And thanks to Dr. B. Prum for recommending my father in law to you!)



1



Reply



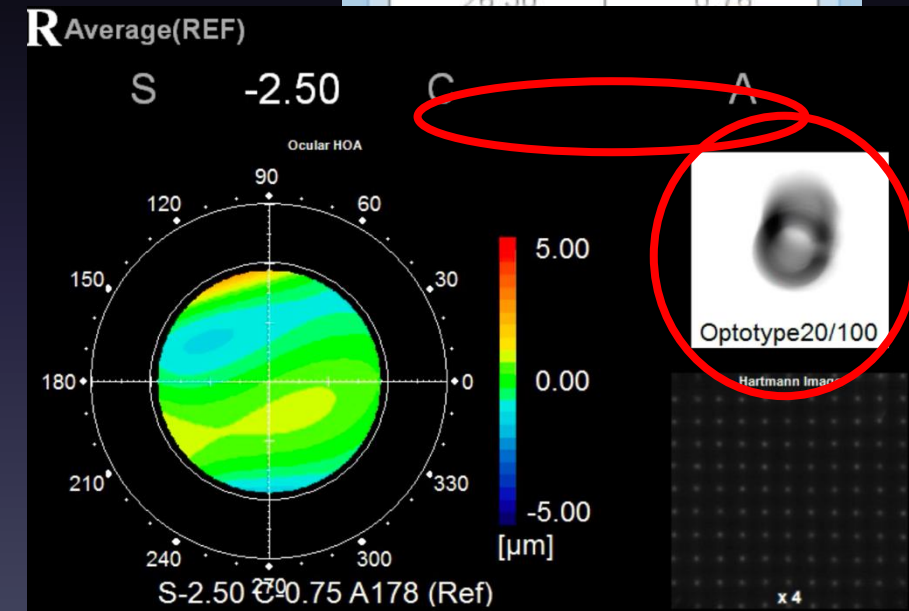
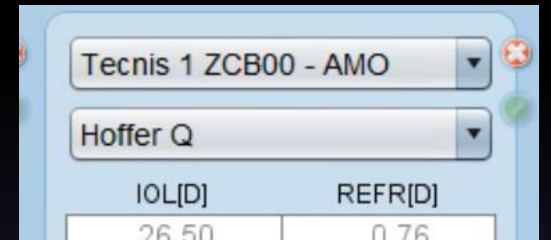
@StevenGSafran 1 month ago

So glad to hear he’s doing well!

Vitreorefractive Surgery

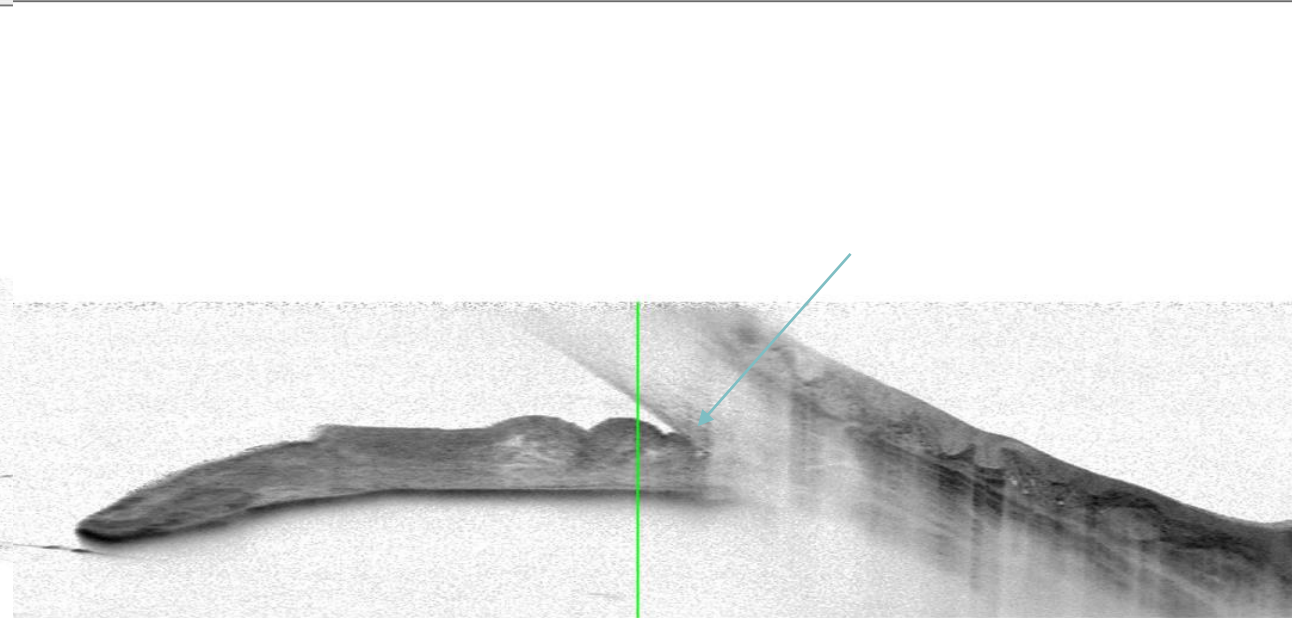
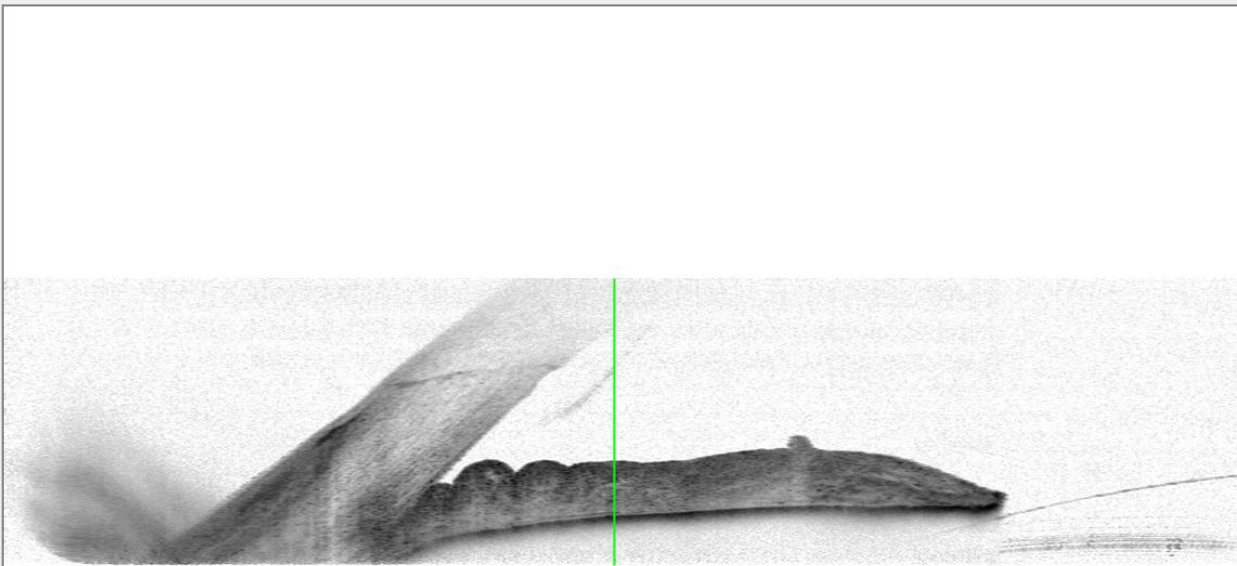
Patient referred unhappy with vision after cataract surgery/iStent and YAG capsulotomy

- 28 diopter ZCBoo which calculates in this eye to a -0.25 predicted outcome
- Instead she has a -2.50
- Vision isn't very clear
- IOP is still 35 on PG agent



Angle appears closed and her anterior chamber looks shallow.....

Aqueous Misdirection

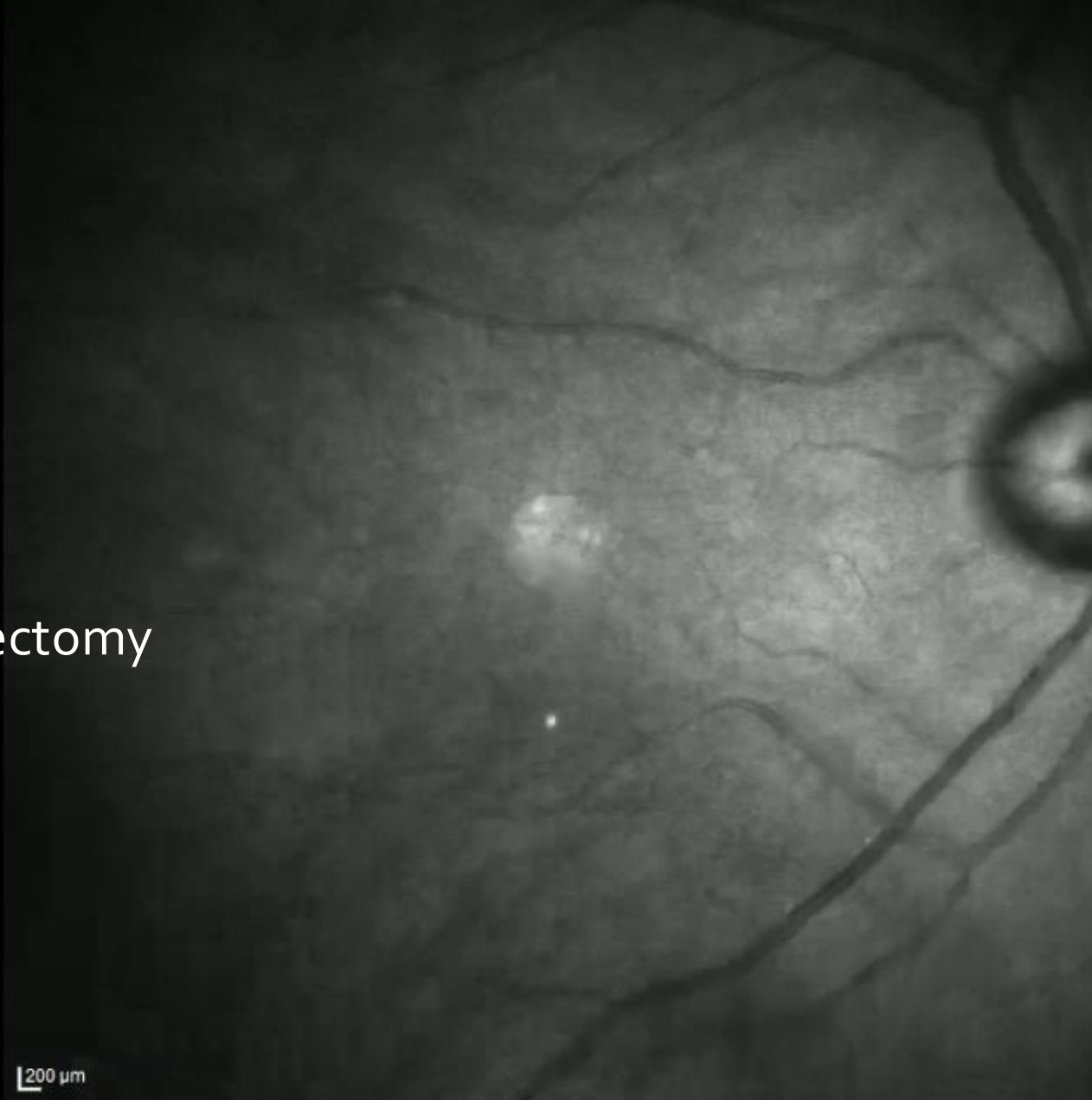


Treat with aqueous
suppression/cycloplegia....

IOP comes down into high teens but patient remains
unhappy with refractive outcome/cloudy vision

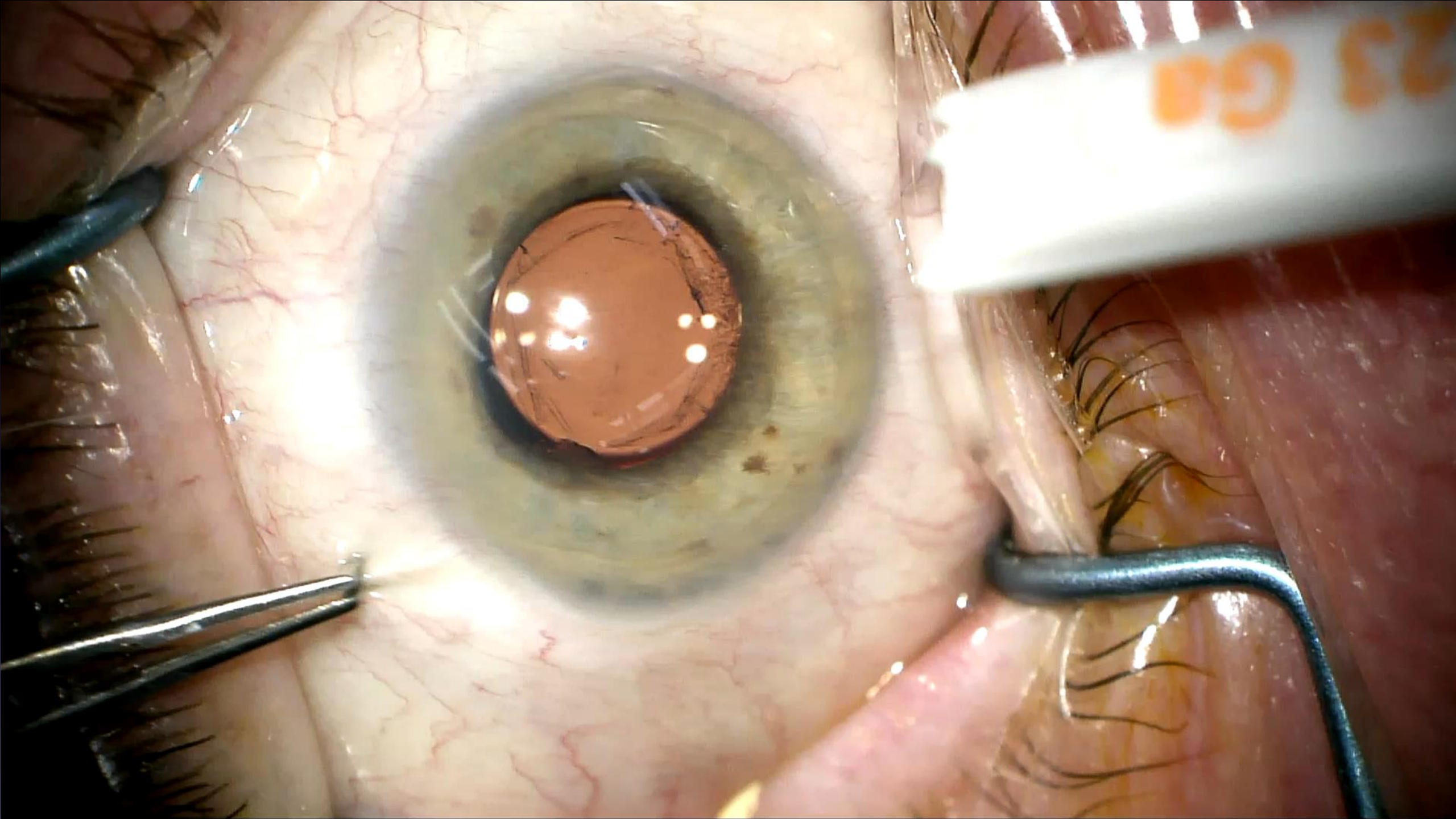
After 2 years
observation on max
meds with
borderline IOP
decision to do IZHV

IridoZonularHyloidVitreectomy

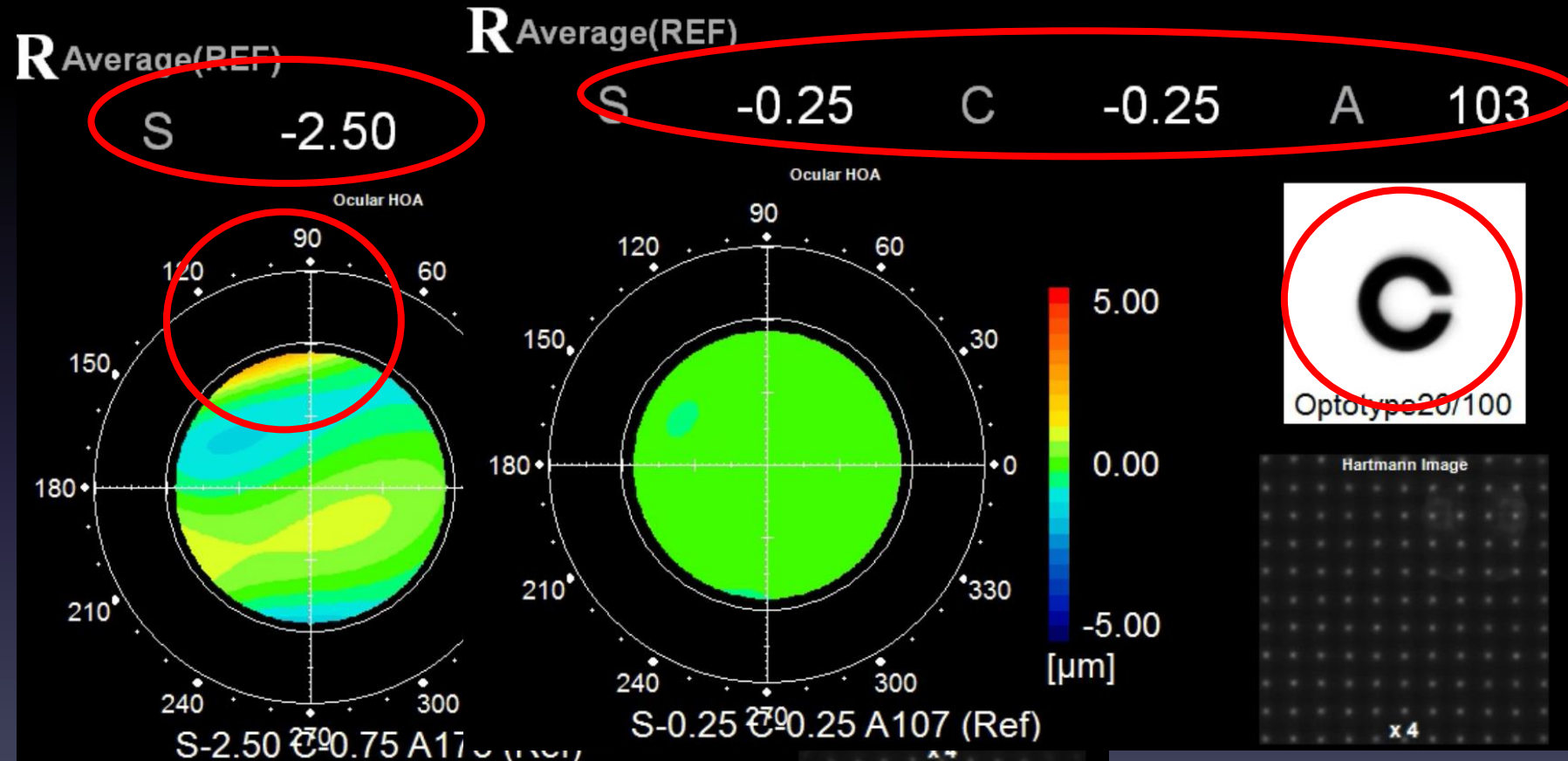


1/26/2022, OD

IR 30°

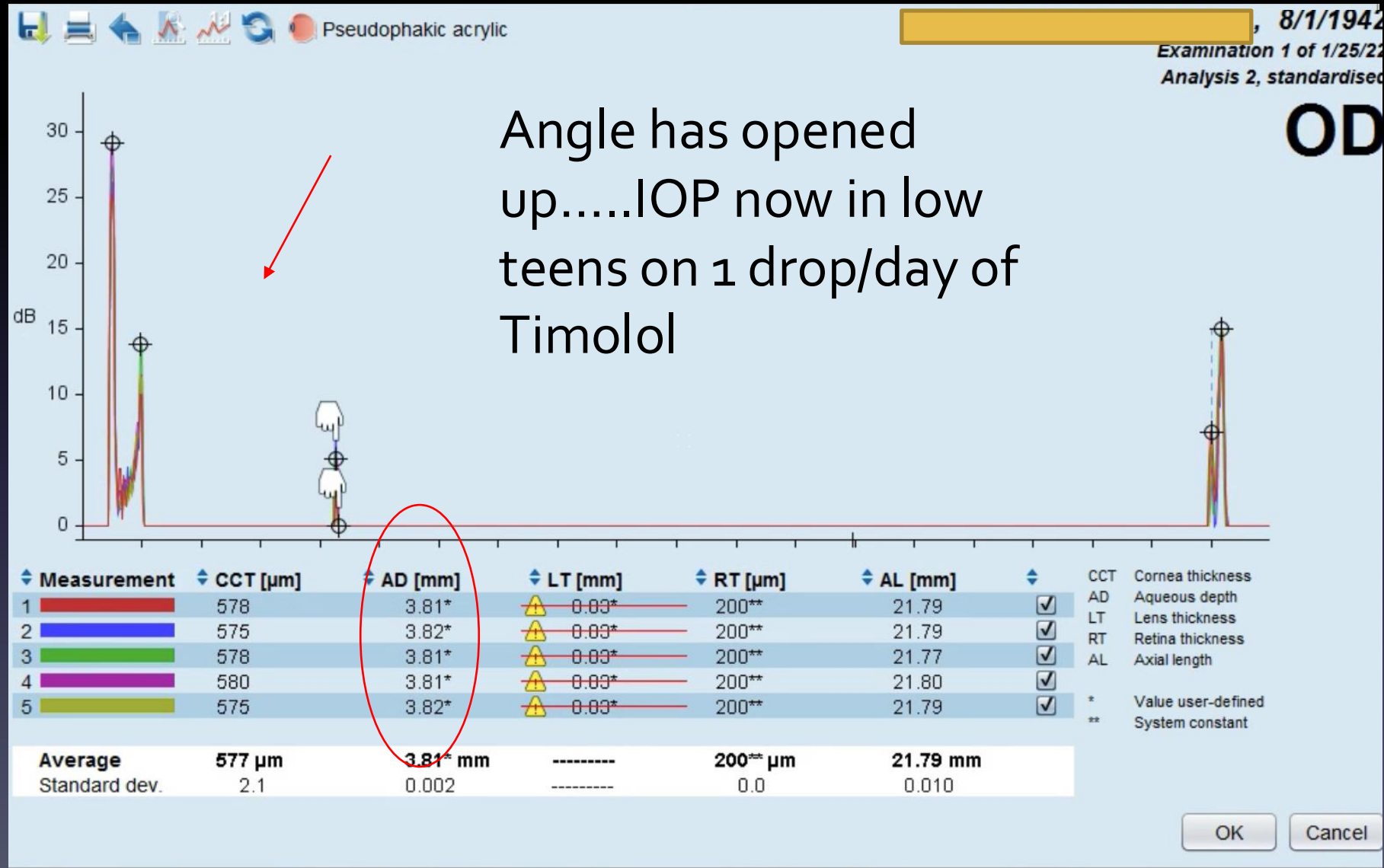


Refraction changes from this.....



Patient notices a marked improvement in clarity.....Decrease in HOA's

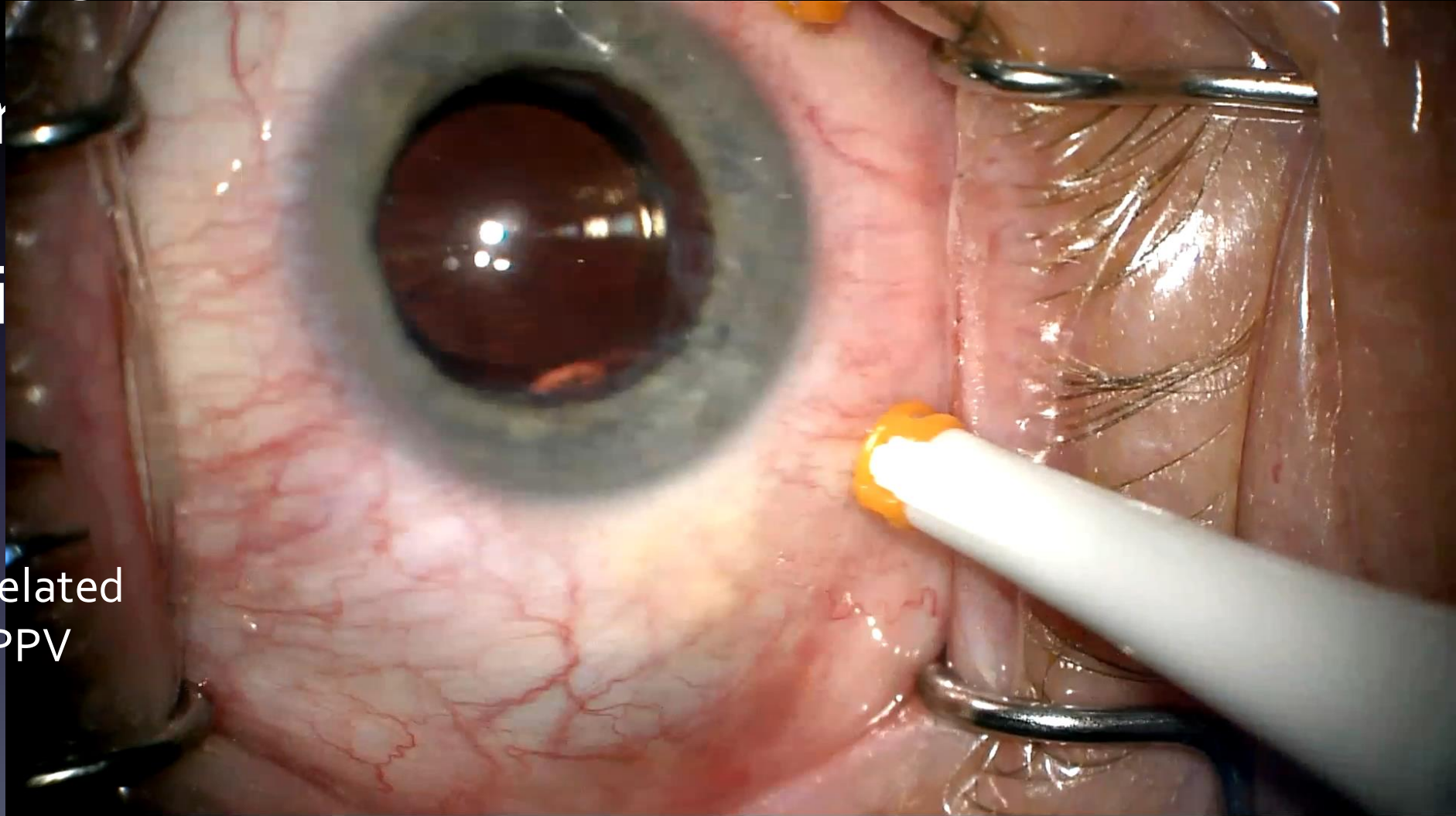
Effective IOP position has shifted



Lawyer referred from NYC for IOL exchange after surgery with Symphony placement

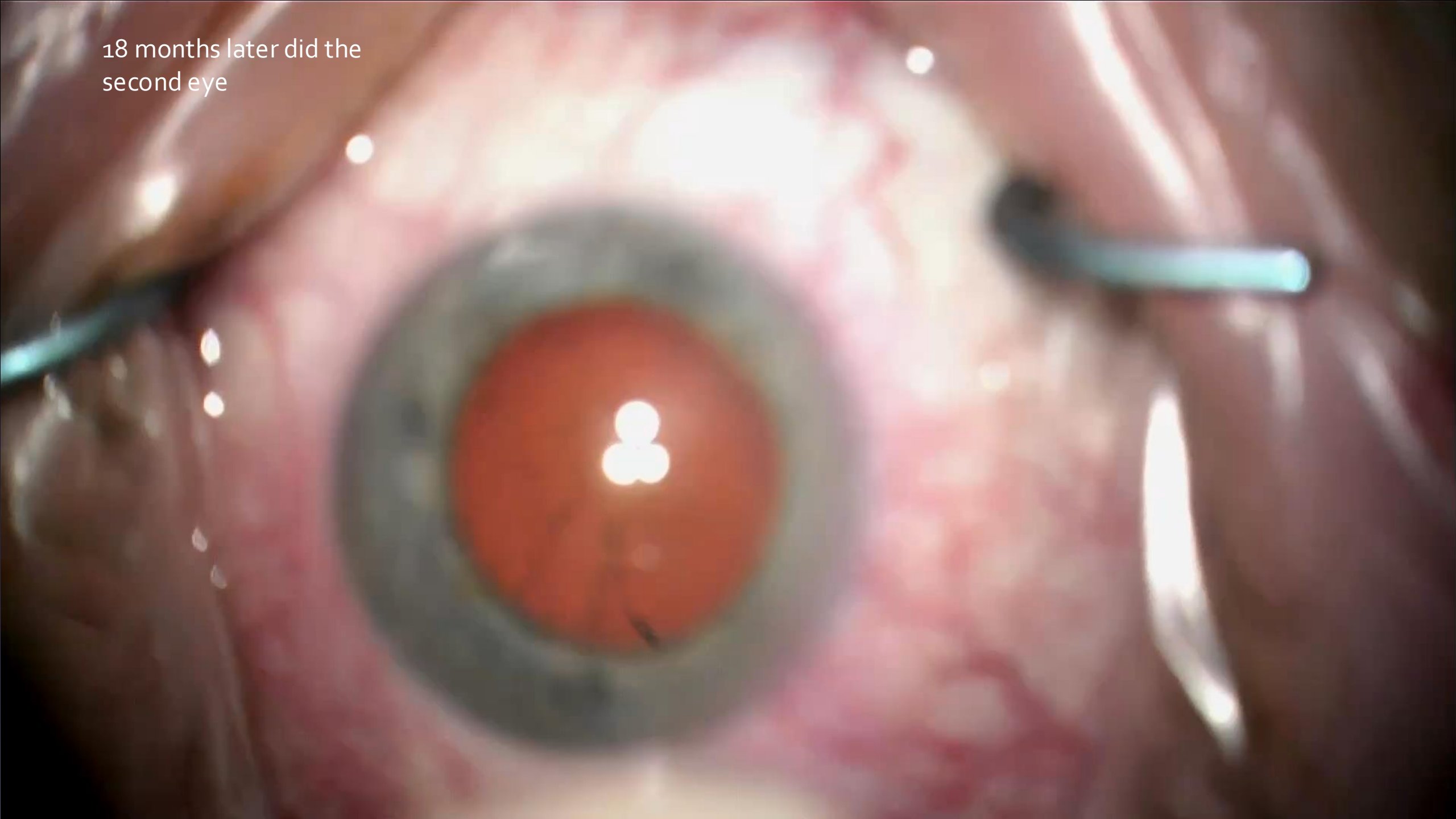
- Plano refr
- Blurred vi
- Glare

I felt his problem was related to the vitreous so did PPV instead of exchange





18 months later did the
second eye



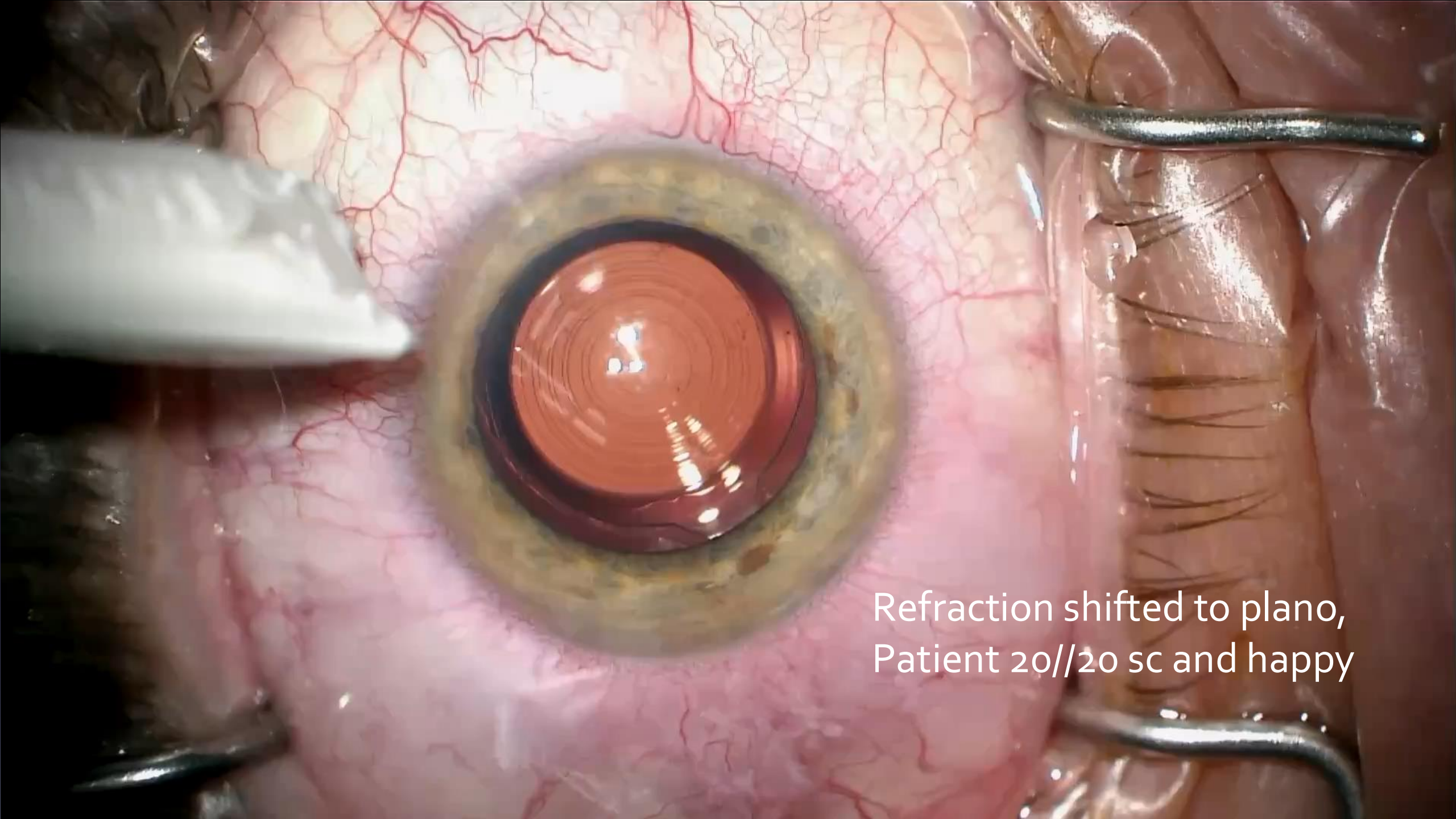
**Patient referred with
Odyssey IOL unhappy with
distance vision**

-0.5 refractive outcome

Vitreous floaters/opacities

20/50 uncorrected for distance





Refraction shifted to plano,
Patient 20//20 sc and happy

What about “Laser Floater removal”

I’ve been doing
20 years

Only useful for discrete opacities, not
helpful for diffuse cloudy vitreous
affecting quality of vision



ya
DOB: Aug 14, 1942
Feb 2, 2018 9:40:45 AM
Image: 8

Steven G Safran MD PA
OPTOS, P200DTx
Laterality: L
Red: 50%
Green: 50%
PRIOR

PreYAG laser
treatment



Zoom: 4.13
Presentation: Approved Feb 2, 2018

DOB: Aug 14, 1942
Feb 21, 2018 4:41:22 PM
Image: 3

Steven G Safran MD PA
OPTOS, P200DTx
Laterality: L
Red: 50%
Green: 50%

Post YAG laser
treatment

Zoom: 4.91
Presentation: Approved Feb 21, 2018

██████z
DOB: Sep 6, 1944
Apr 11, 2018 10:23:06 AM
Image: 7

Pre
YAG
laser

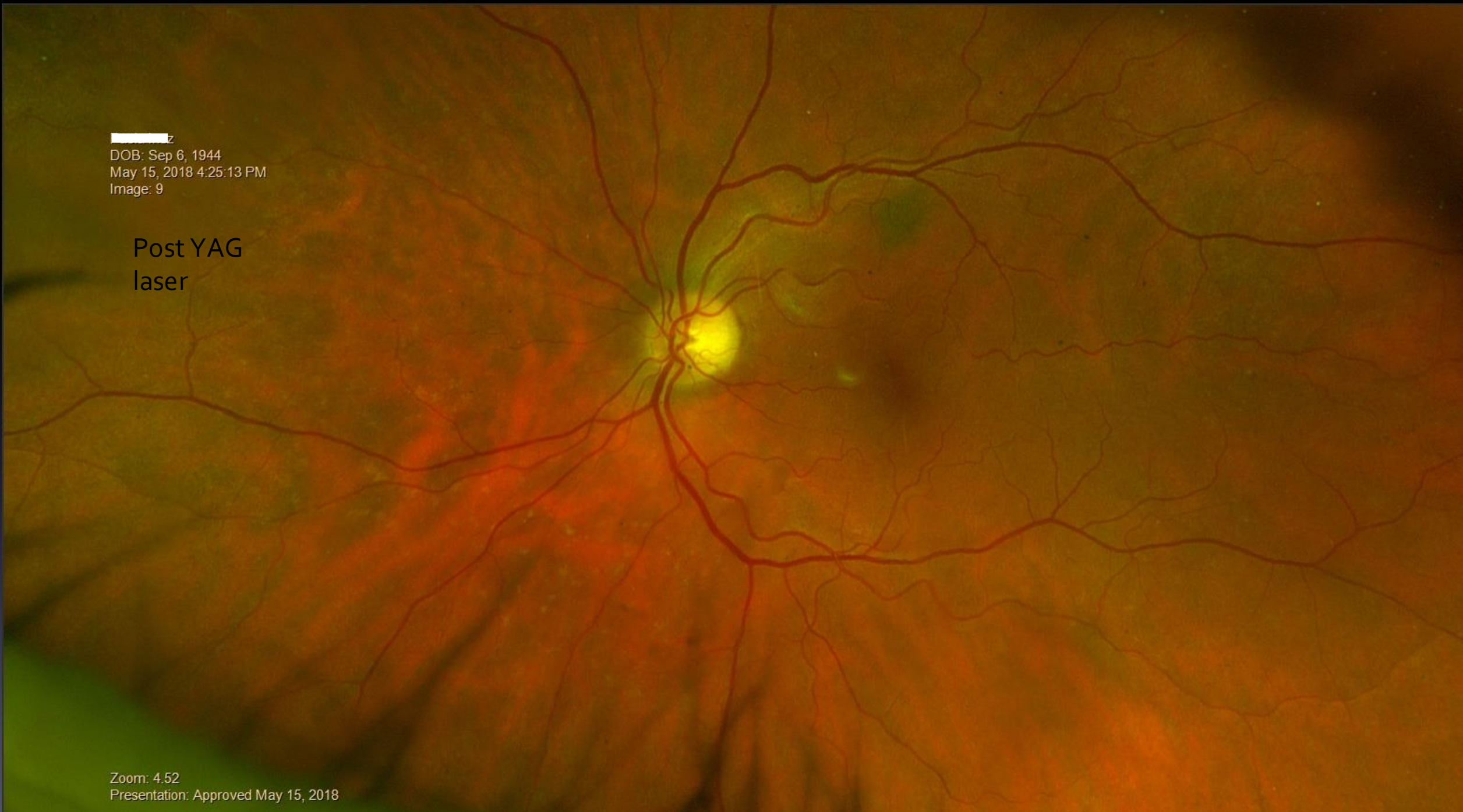


Zoom: 3.93
Presentation: Approved Apr 11, 2018

██████z
DOB: Sep 6, 1944
May 15, 2018 4:25:13 PM
Image: 9

Post YAG
laser

Zoom: 4.52
Presentation: Approved May 15, 2018



Turbid, cloudy
vitreous with
dense floaters

You are not going
to affect this with a
YAG laser!



What about protective role of vitreous?

Vitreous has an important function of mitigating effect of reactive oxygen species (ROS)
This helps protect other structures in the eye from damage (due to ROS)

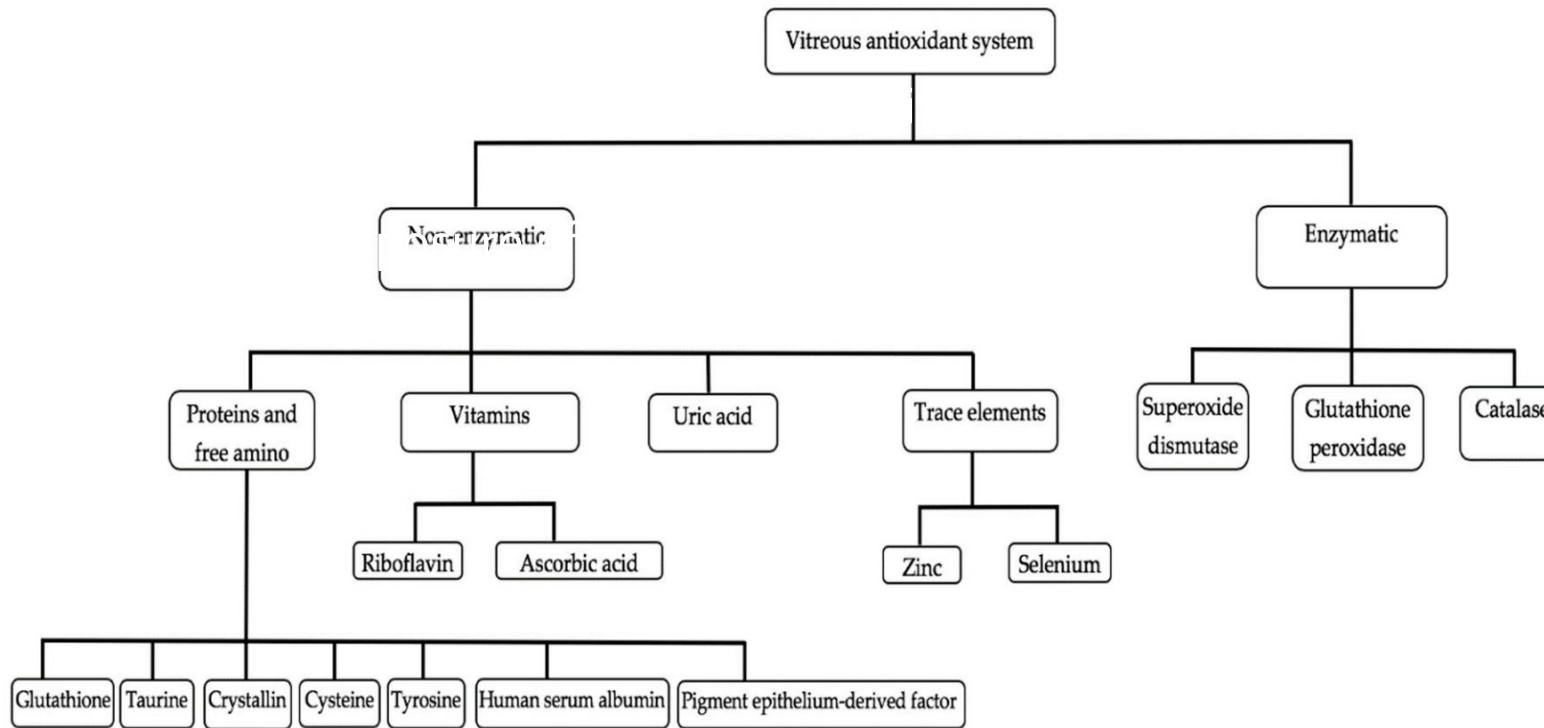


Figure 3. Classification of vitreous antioxidants. Courtesy of Emmanuel Ankamah.

Vitreous degeneration is also associated with chronic exposure to reactive Oxygen species

- Exposure to free radicals breaks down collagen/hyaluronic acid structure of vitreous causing liquefaction
- As vitreous liquefies it LOSES its ability to deal with Oxygen radicals and protect other structures in the eye
- That's why these eyes already have developed cataracts
- The syneretic vitreous that has broken down, liquefied and opacified has already lost most of its ability to protect other structures in the eye from ROS
- Removing opacified/liquefied/degenerated vitreous does not undermine the ability of the eye to deal with ROS the way removing a young persons clear vitreous does.

Perform optical vitrectomy only for opacified vitreous that already has undergone advanced syneresis

Presence of PVD determined by OCT (or B scan)

Avoid elective optical vitrectomy in younger patients with mostly clear vitreous and a discrete distracting floater

30 years after I started doing PPV routinely in my practice....teaching, talking, advocating for it as the best approach for anterior segment surgeons.....

It has become a much more accepted approach,
but questions and controversies still exist!

Is the pars plana approach the
best, most controlled way to
perform a vitrectomy?

YES!

Who should be doing anterior vitrectomy through a pars plana approach?

All surgeons should be trained to do this!

It is the best and safest way to do a vitrectomy

Surgeons should NO longer view performing a vitrectomy as something to be avoided at all cost as a complication but rather as an integrated tool for complex anterior segment cases

Most important thing is that
we provide the best /safest
treatments for our patients

We need to work together to do that!

Many of my cases are referred by retina groups.

I am fortunate to have retina colleagues that support what I do and
I in turn help them.

If a surgeon is referred a range of complex anterior segment pathology in his practice

Being able to use a pars plana approach is a tremendous advantage!

Not using these techniques puts one “behind the curve”

If a training program is NOT incorporating
and teaching PPV techniques for anterior
segment surgery....

They will rapidly be left behind those that
do!

Thank You!

