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Mark E. Johnston MD, FRCSC



Educational Seminars

- [2018 Refractive Surgery](#) [DOWNLOAD](#)
 Understanding The Femto Flap
- [2017 Discrimination: Refractive Patients](#) [DOWNLOAD](#)
 Current law prohibits discrimination against any group of patients with a specific disorder
- [2018 Cataract Surgery Review](#) [DOWNLOAD](#)
- [2017 Complex refractive surgery](#) [DOWNLOAD](#)
 Anterior basement membrane dystrophy, Trauma
- [2017 Cataract risks and indications](#) [DOWNLOAD](#)
 Risk factors for capsular rupture, Testing visual impairment
- [2017 Complex Cataract Surgery](#) [DOWNLOAD](#)
 History of a central vein occlusion and multiple steroid injections, Zonular dehiscence and choroidal hemorrhage.
- [2015 Review of Non-Surgical Cases](#) [DOWNLOAD](#)
 Surgery is not indicated in patients with topographic evidence of an abnormal cornea, very high corrections, cataract, keroid formation, history of syncope, and age under 18 or over 60.
- [2016 Review of the Physics and Biology of Vision](#) [DOWNLOAD](#)
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- [2014 Cataract Surgery Cases](#) [DOWNLOAD](#)
 Complex Surgical Cases- See select Cases on Videos
- [2014 Refractive Symposium](#) [DOWNLOAD](#)
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 March 2013

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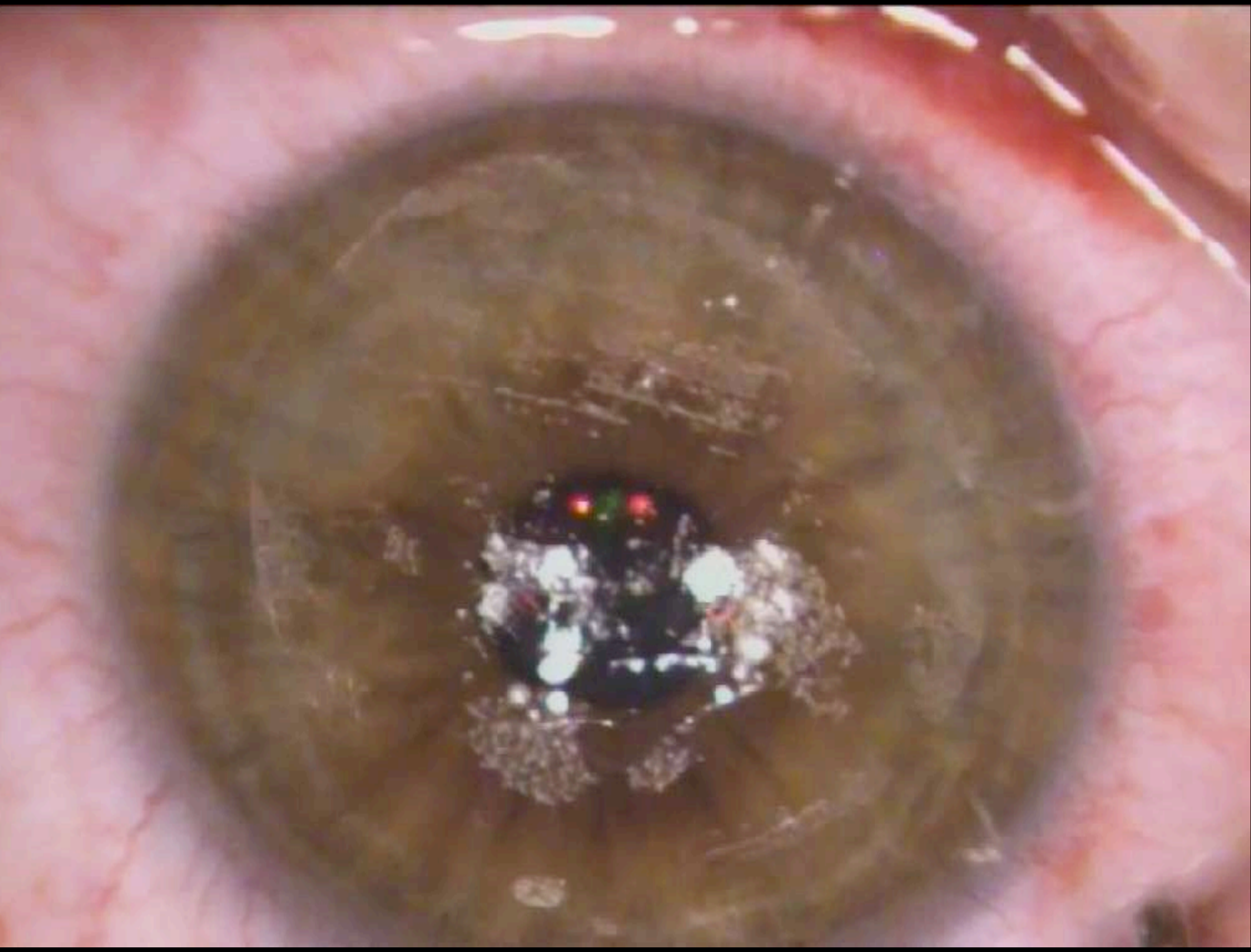


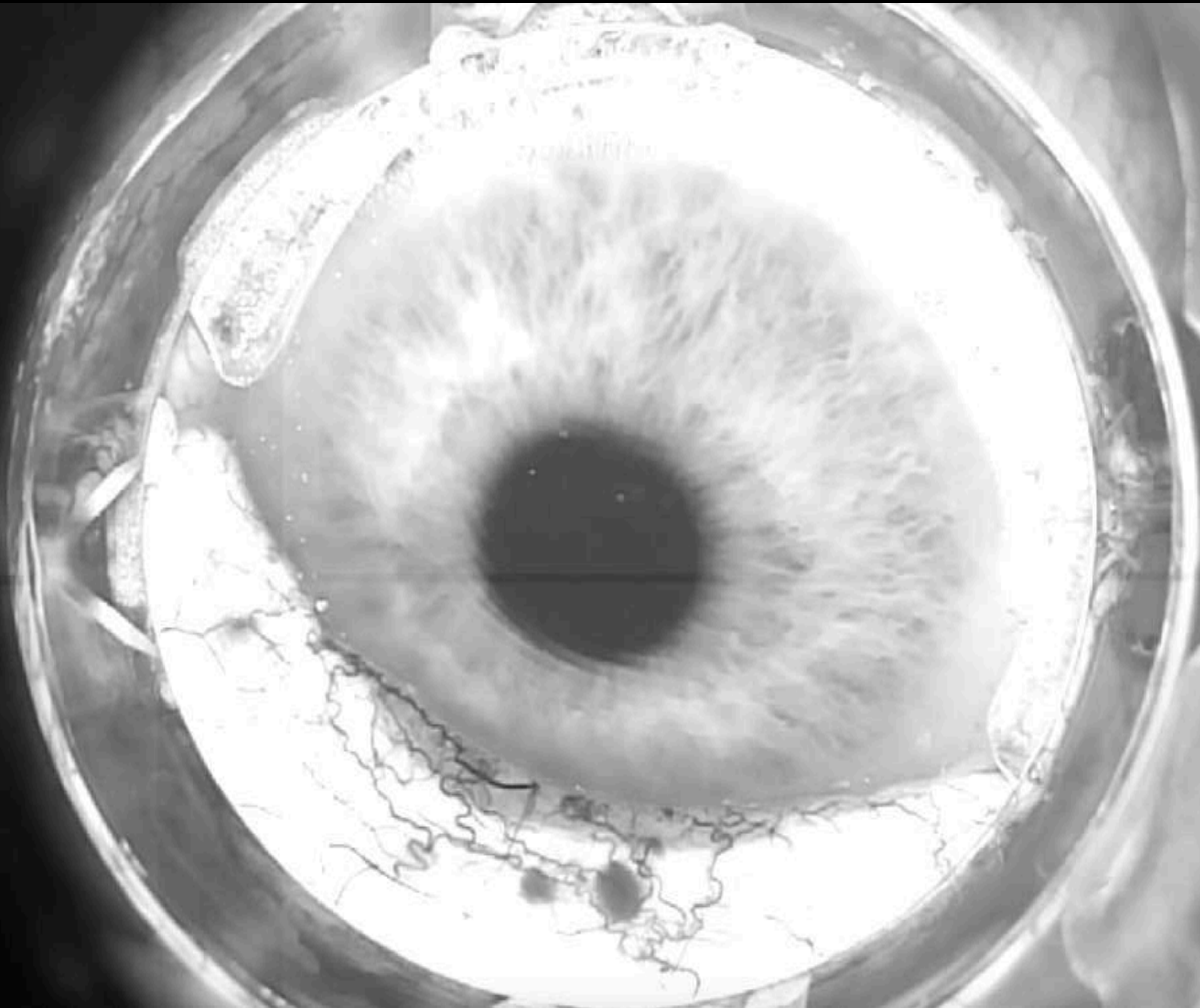
Nebraska Laser Eye Associates
4909 S 118th St, Omaha, NE 68137
(800) 433-2015 or (402) 397-2010

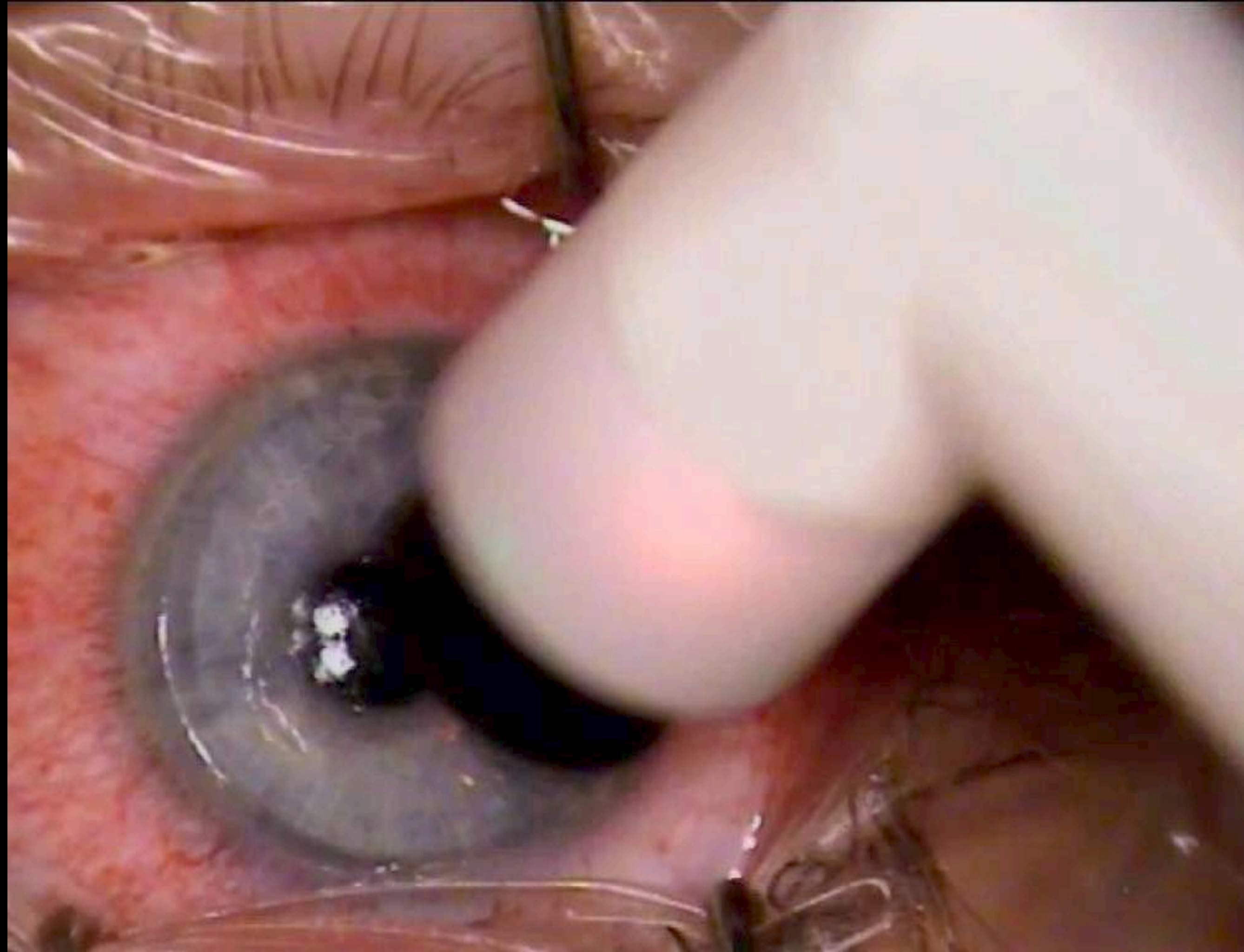
www.markjohnstonlasik.com

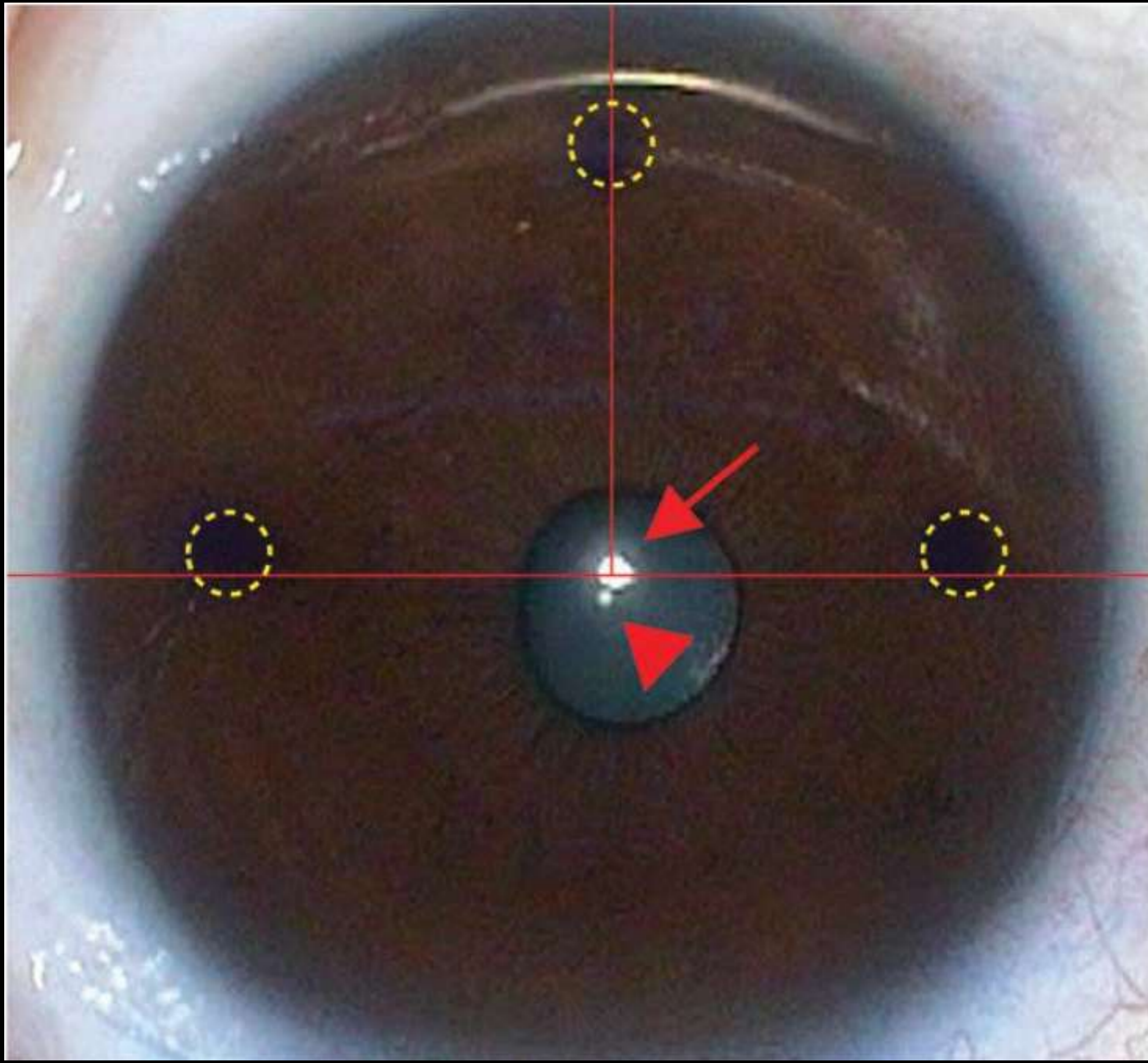
REFRACTIVE REVIEW

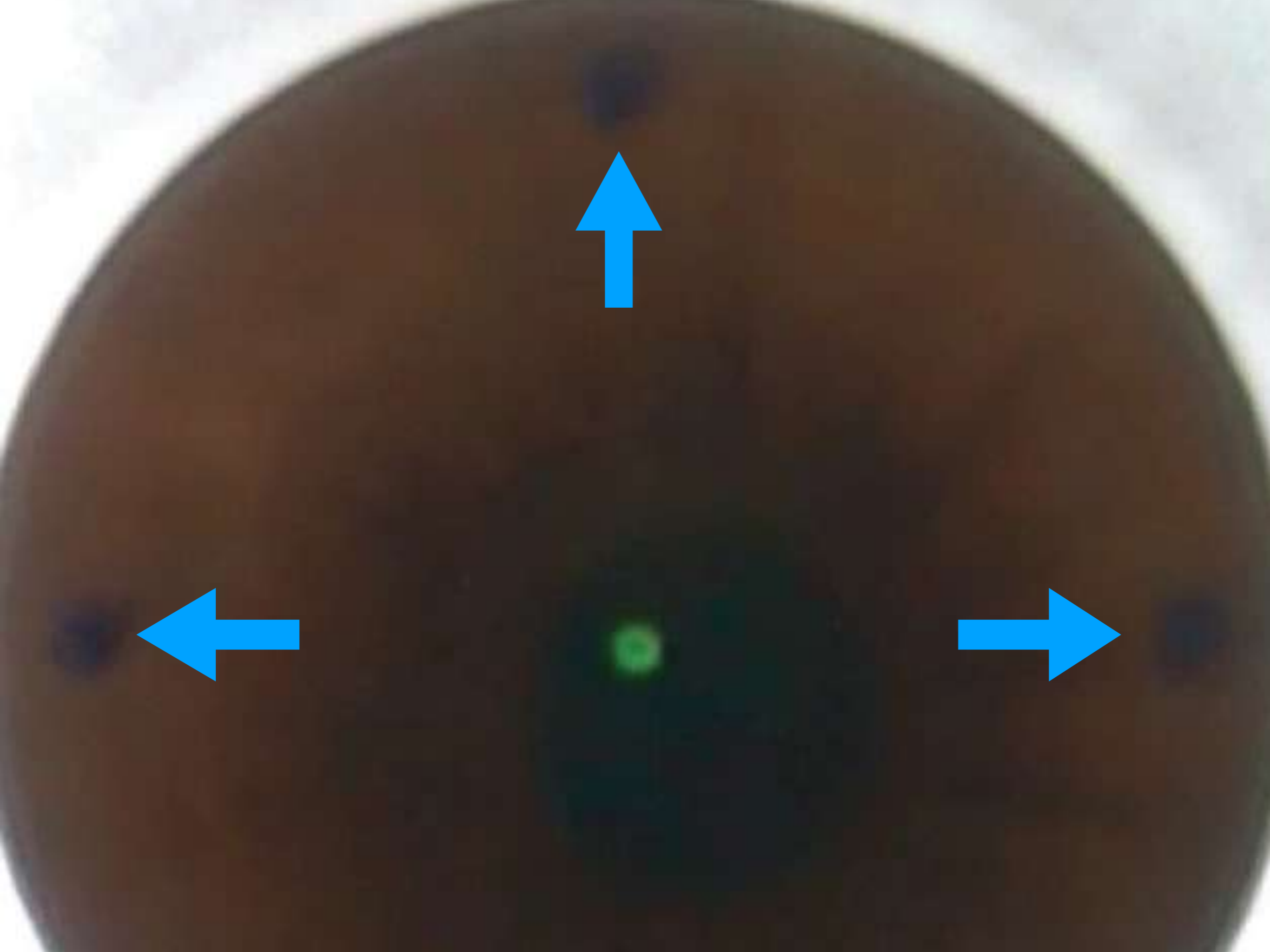
Centration of the Lasik Flap
and the Lasik Ablation

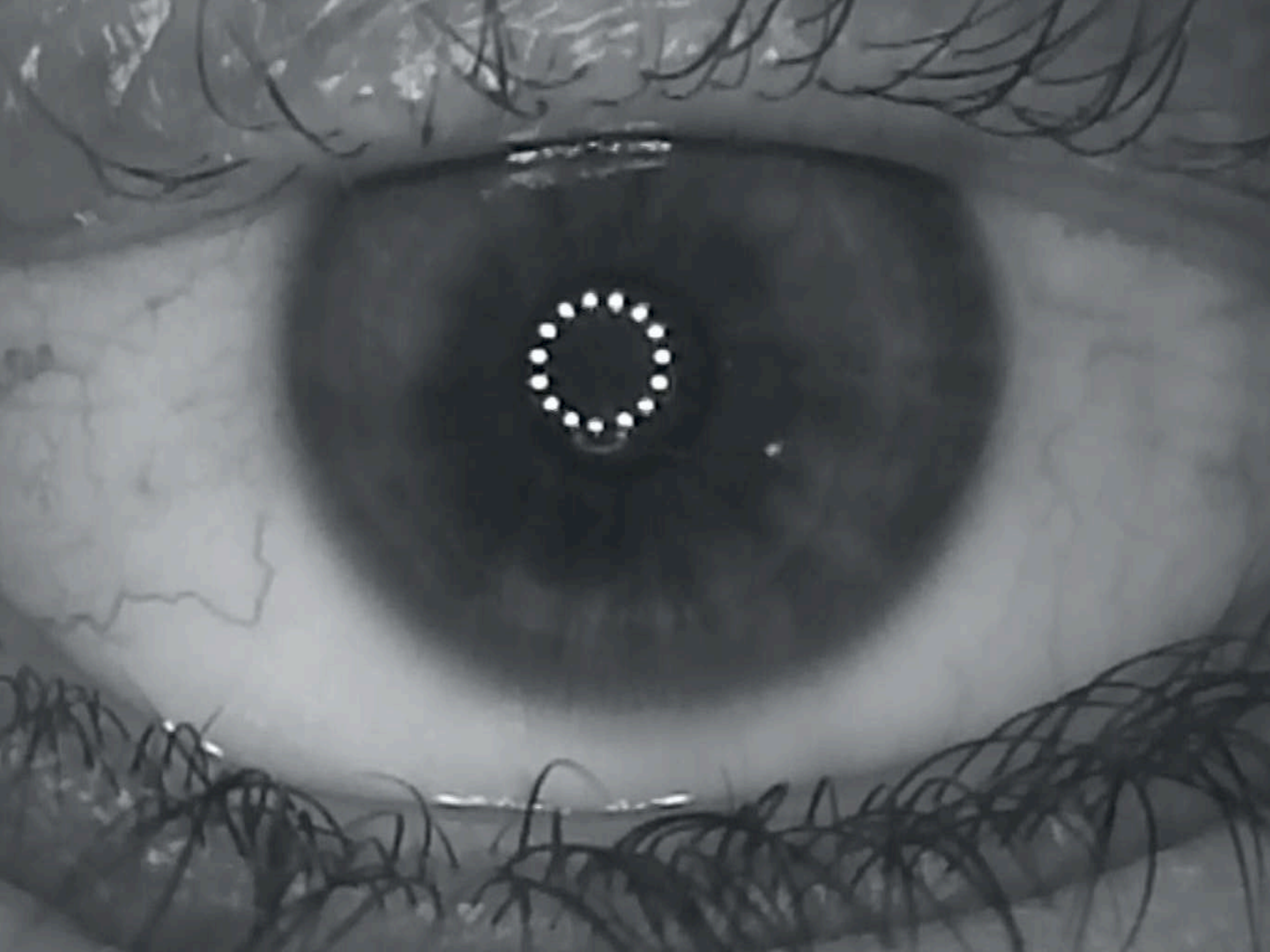


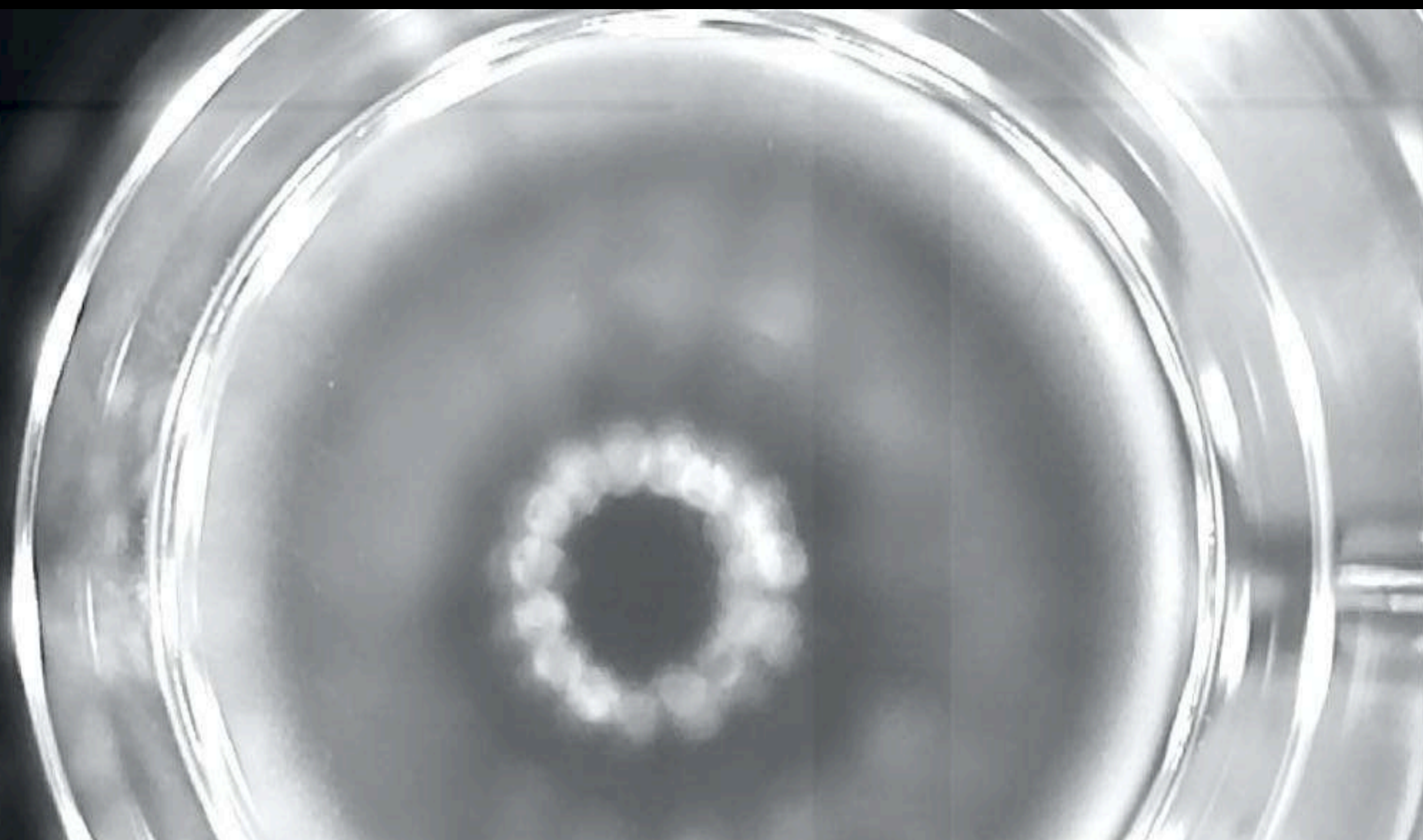










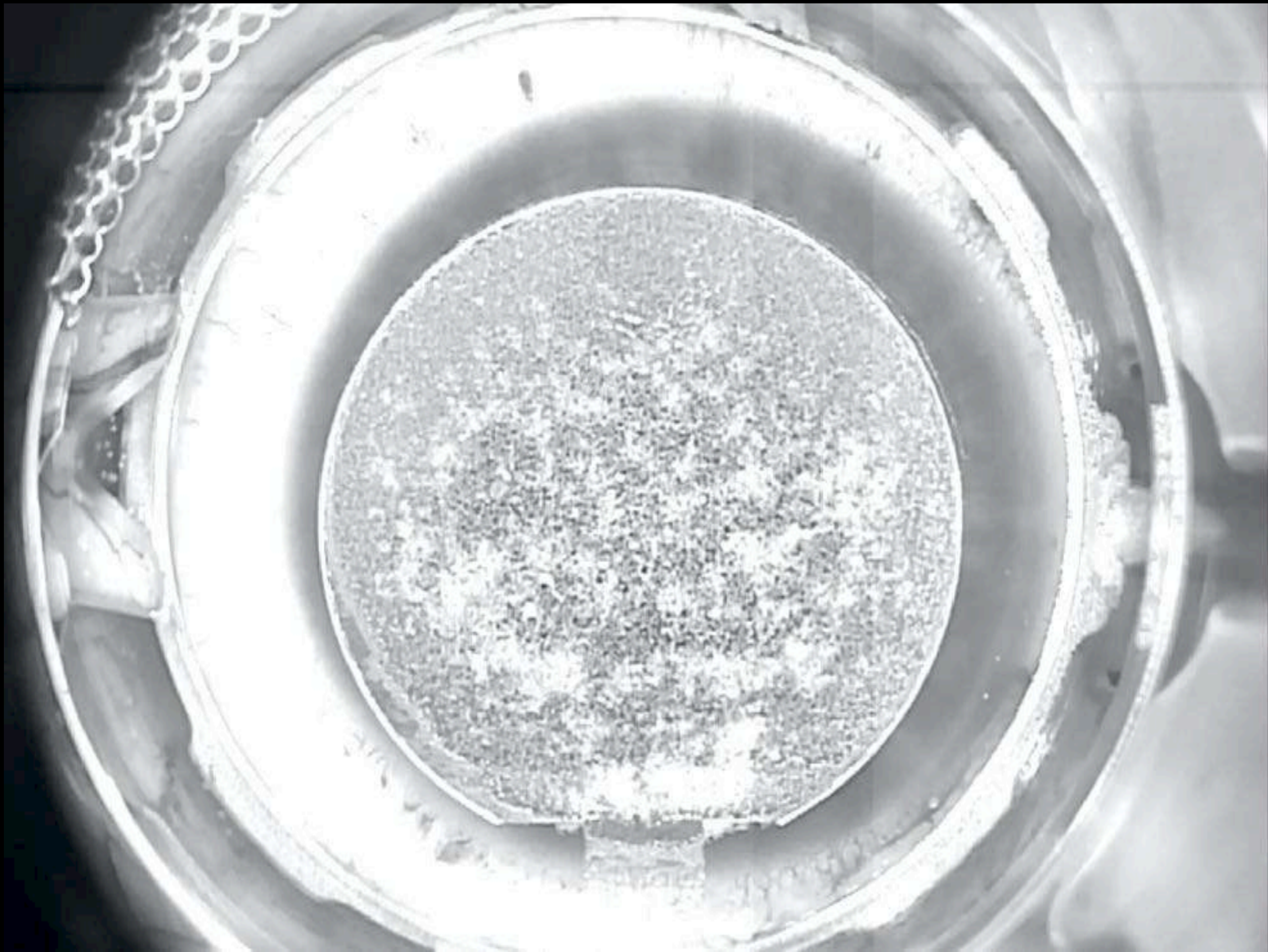


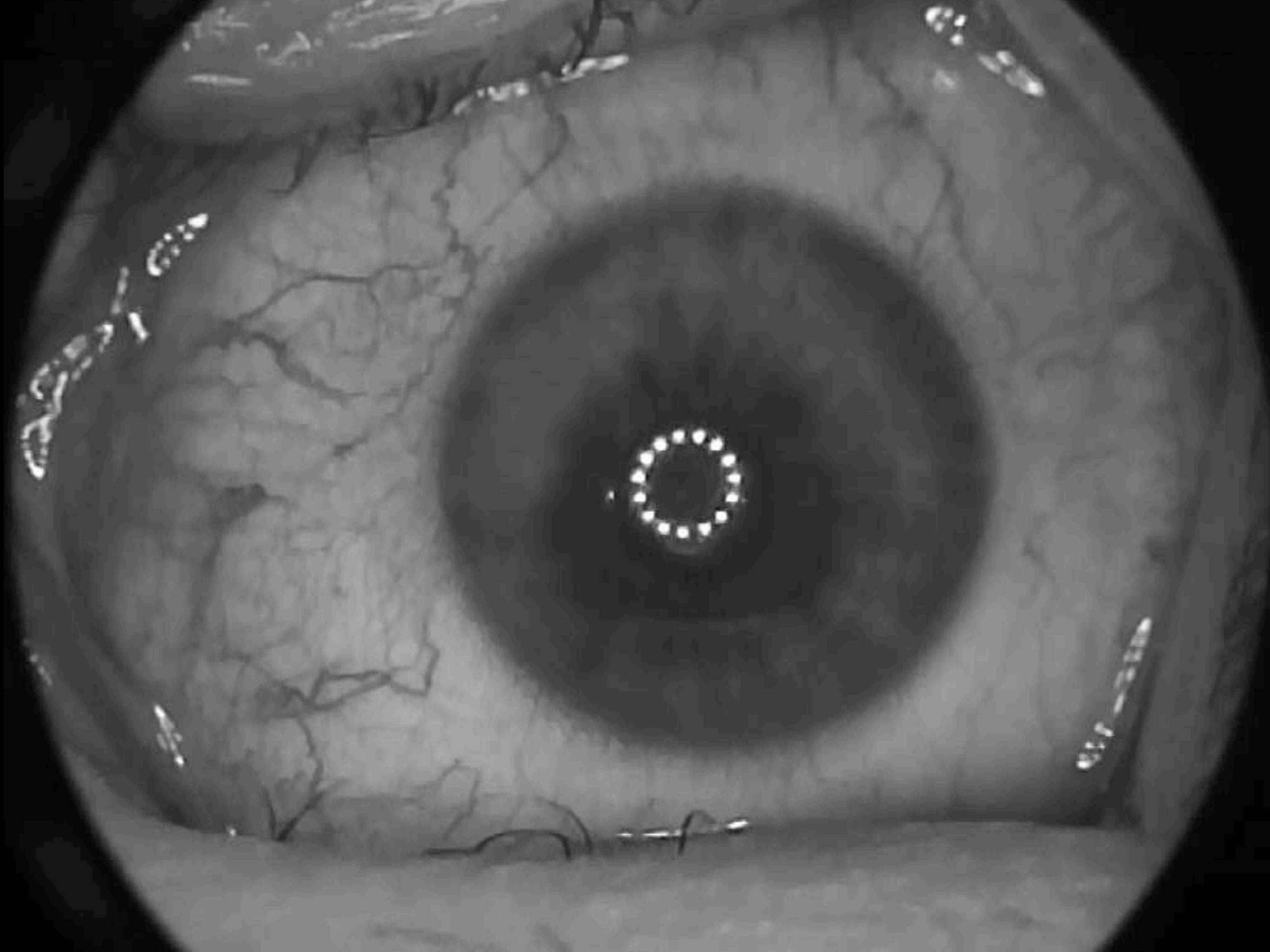
**Suction ring centered on the limbus with nasal offset.
Flap ablation can be adjusted by the laser towards
the visual axis.**

SUCTION RING MUST BE
ABSOLUTELY
TANGENT/VERTICAL
FROM THE FLOOR

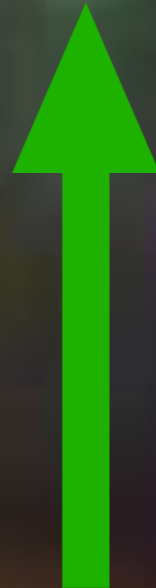




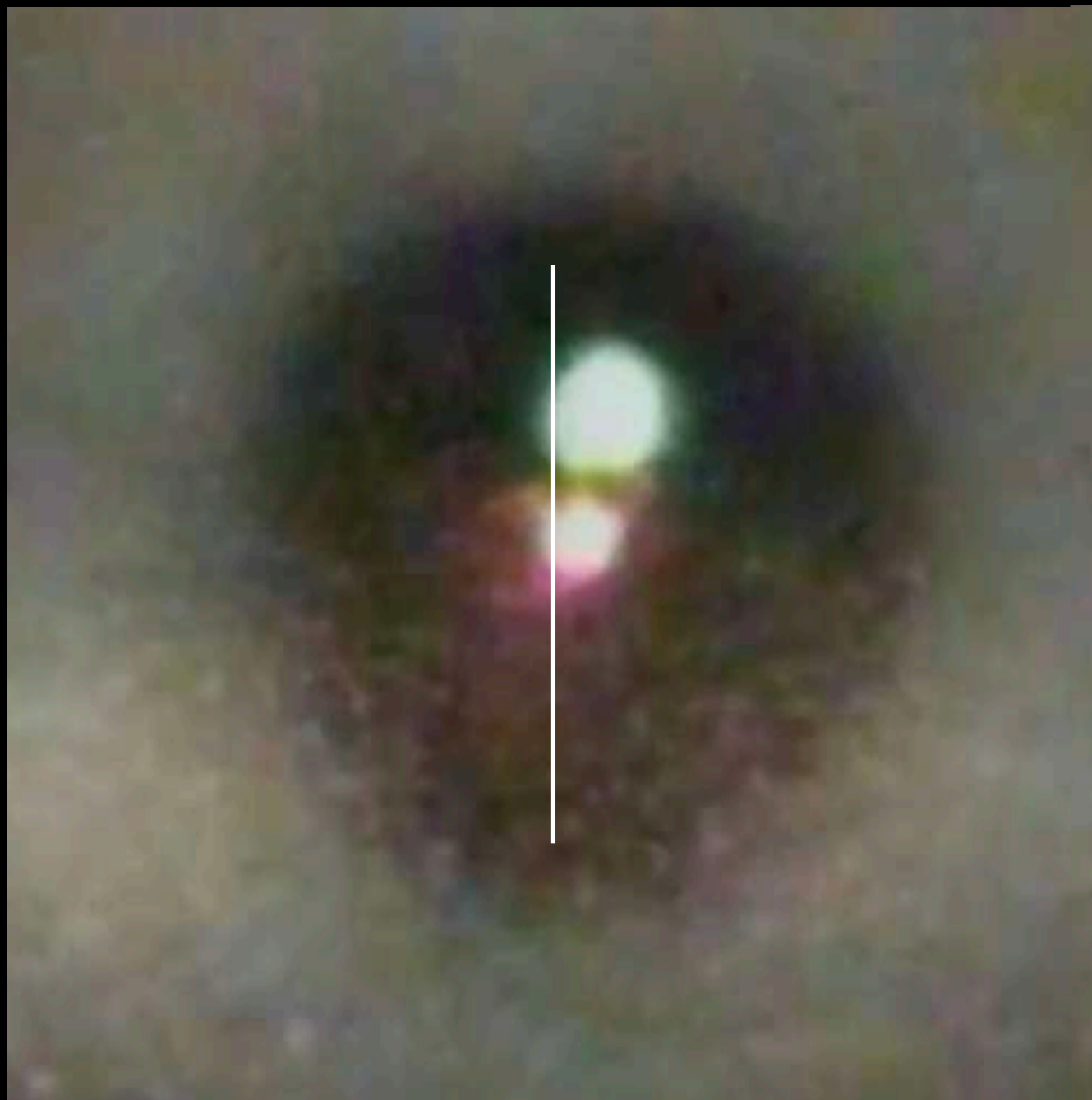




Patient Position under the microscope



Visual axis



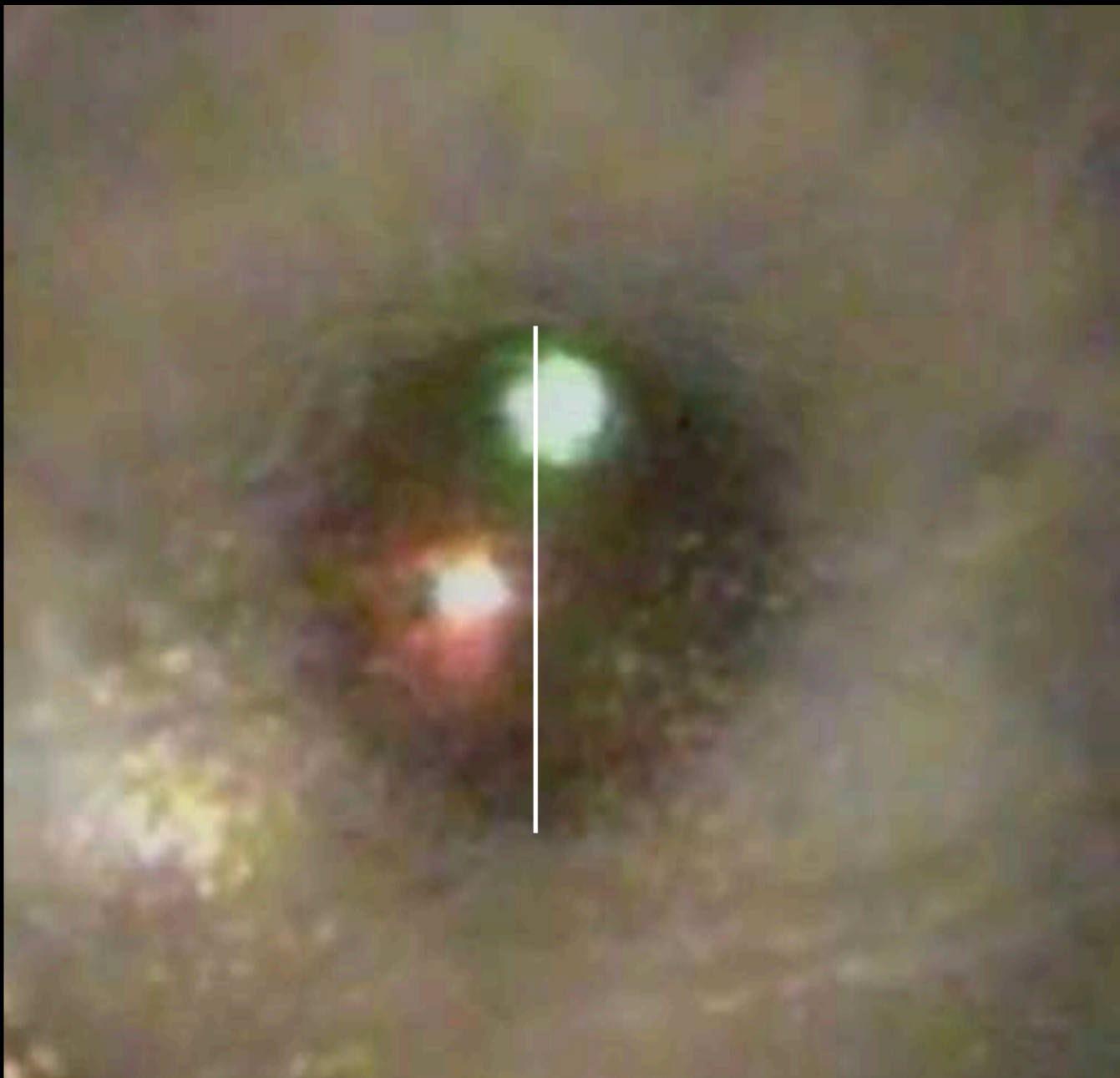
Tracker to Pupil center



**Visual axis
adjustment**

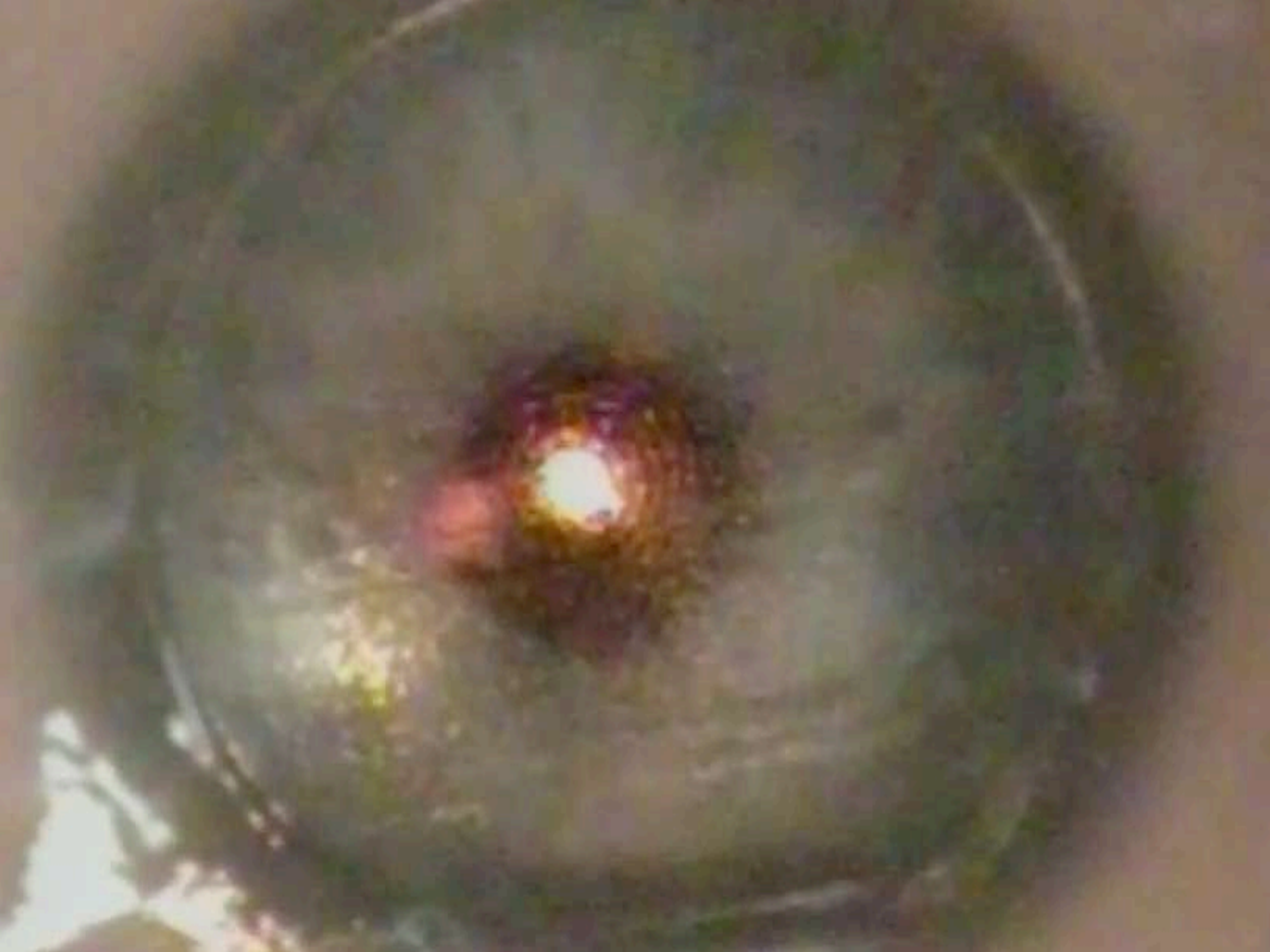


Tracker to Pupil center

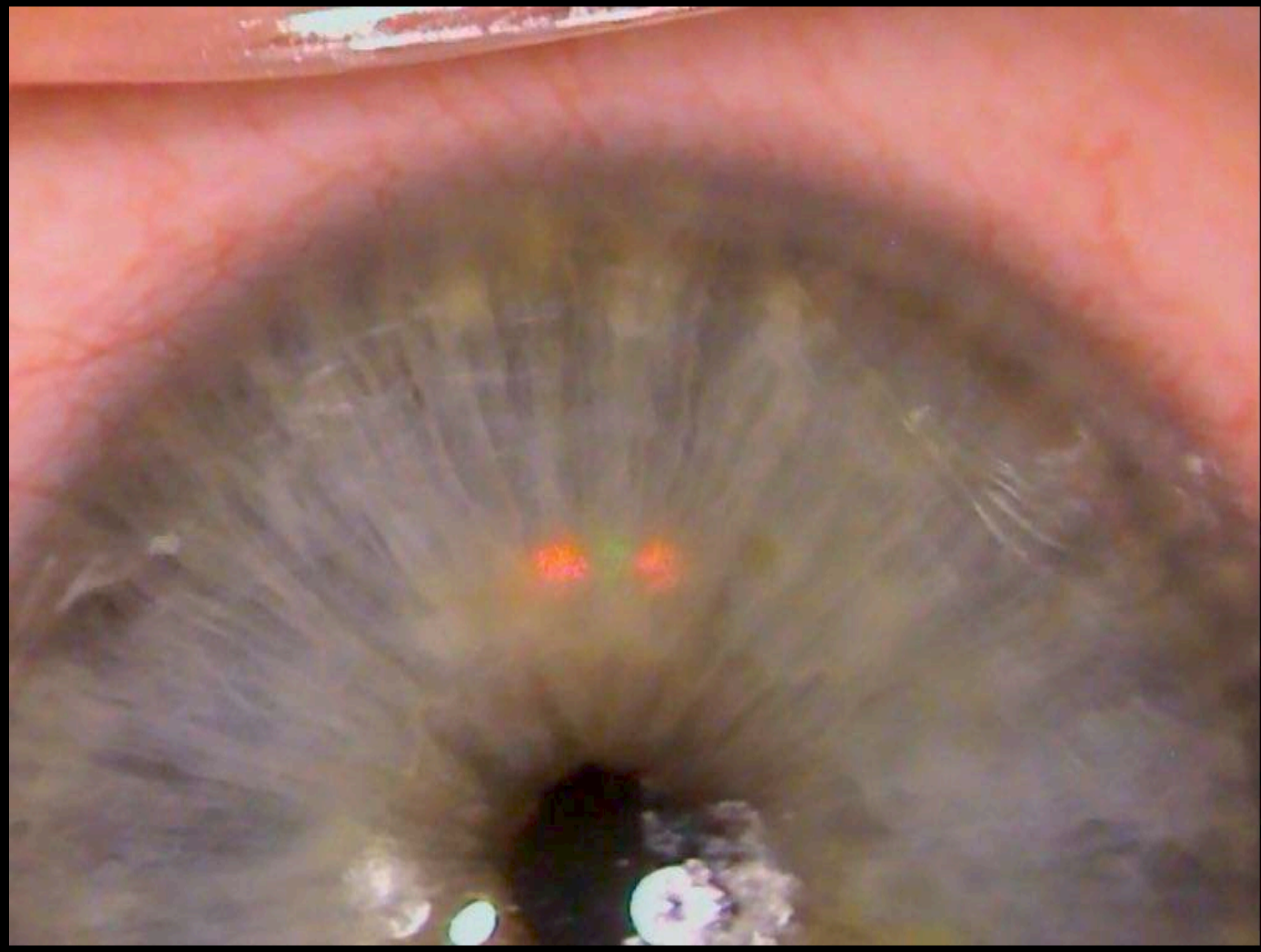


**Visual axis
adjustment**



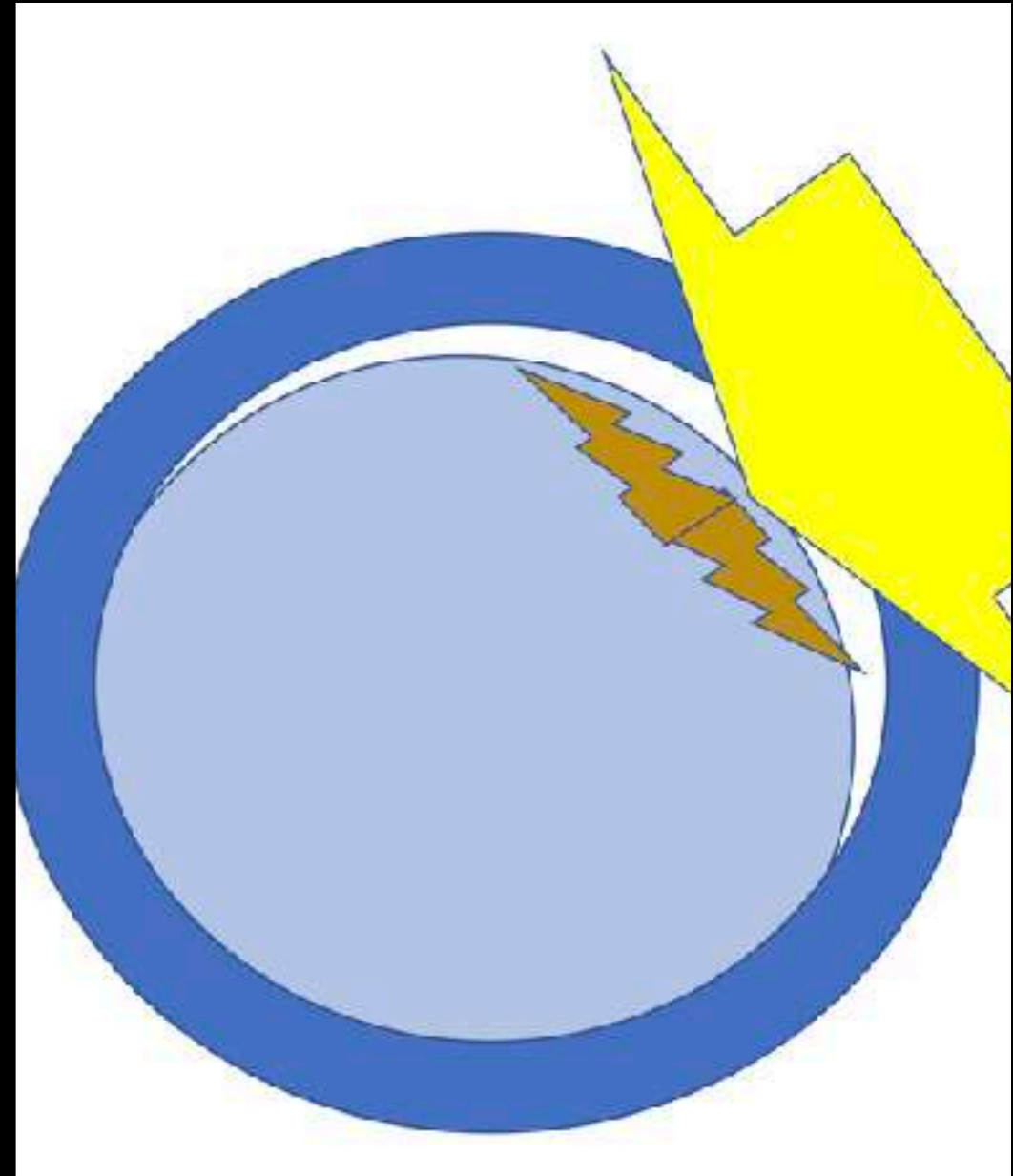


Late Flap trauma



Issues with a slipped flap with folds

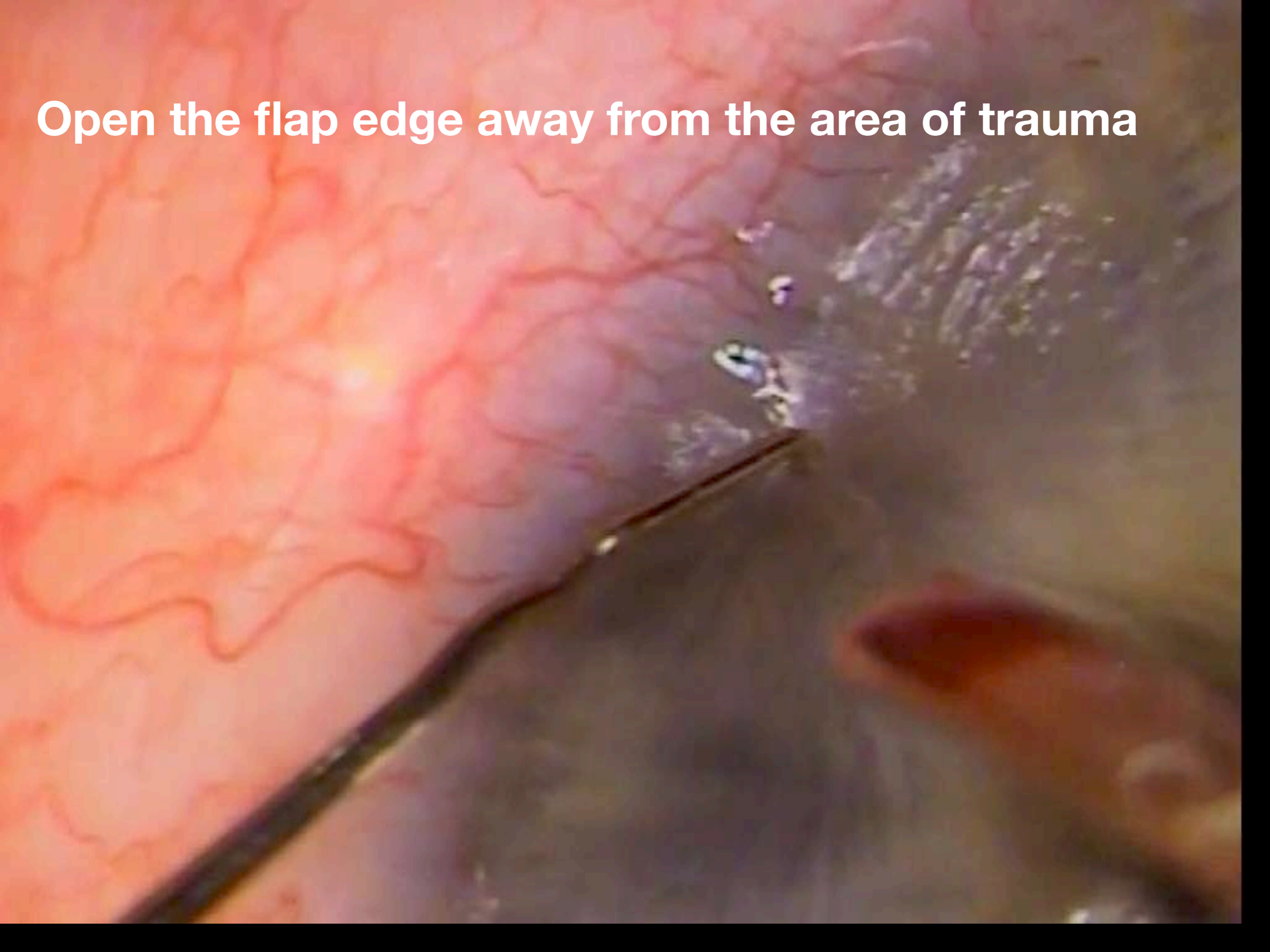
- Epithelial quickly covers the newly exposed flap bed and often is under the flap
- Epithelial Ingrowth treatment and prevention
 - Need to clean the flap edge and the posterior flap
 - Need to recess the peripheral epithelium so that the epithelium spreads **from the flap towards the limbus**
- Folds
 - Add fluid to make the tissue swell
 - Recess the peripheral epithelium to assure that the flap can sit in the correct position

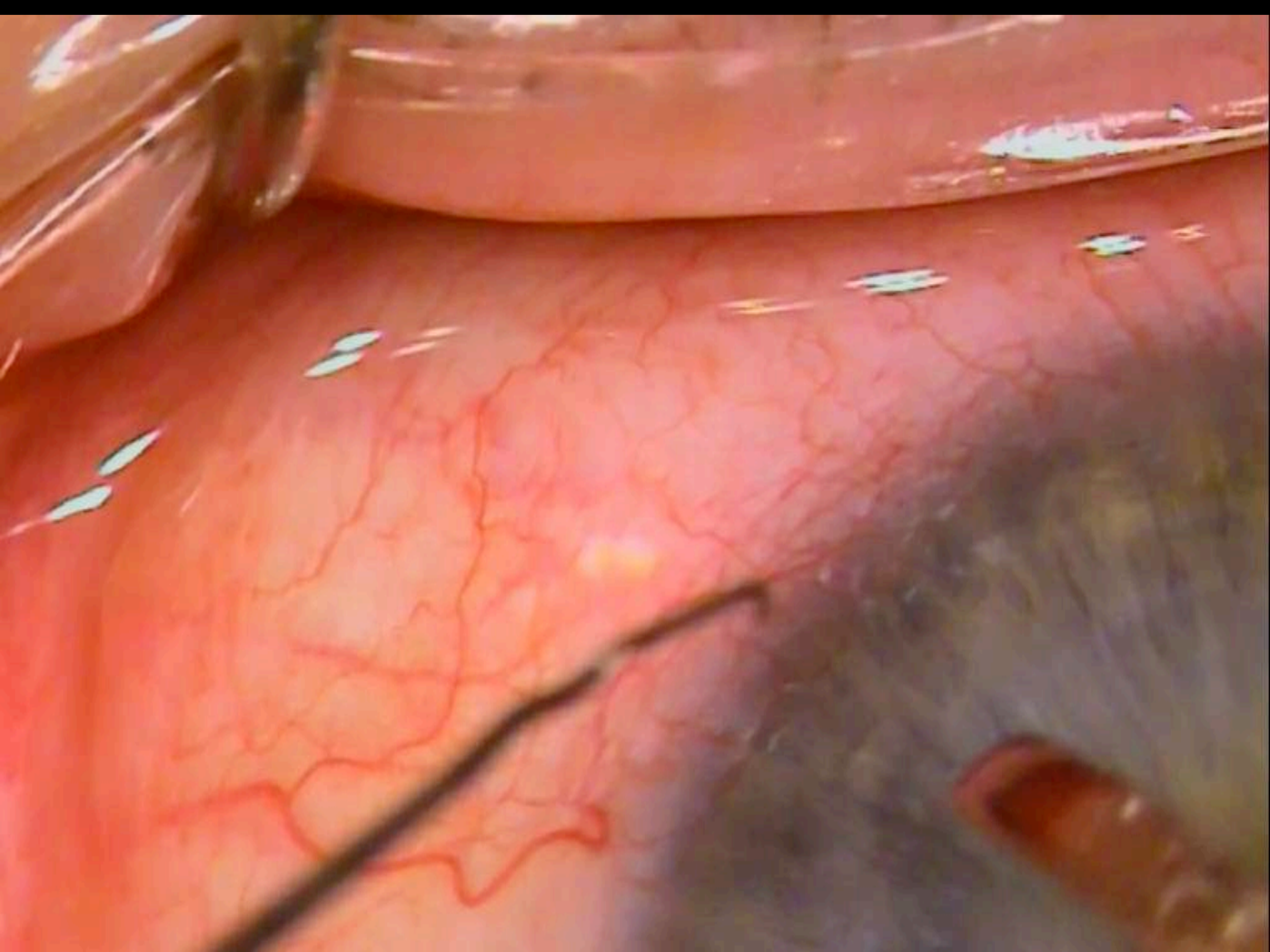


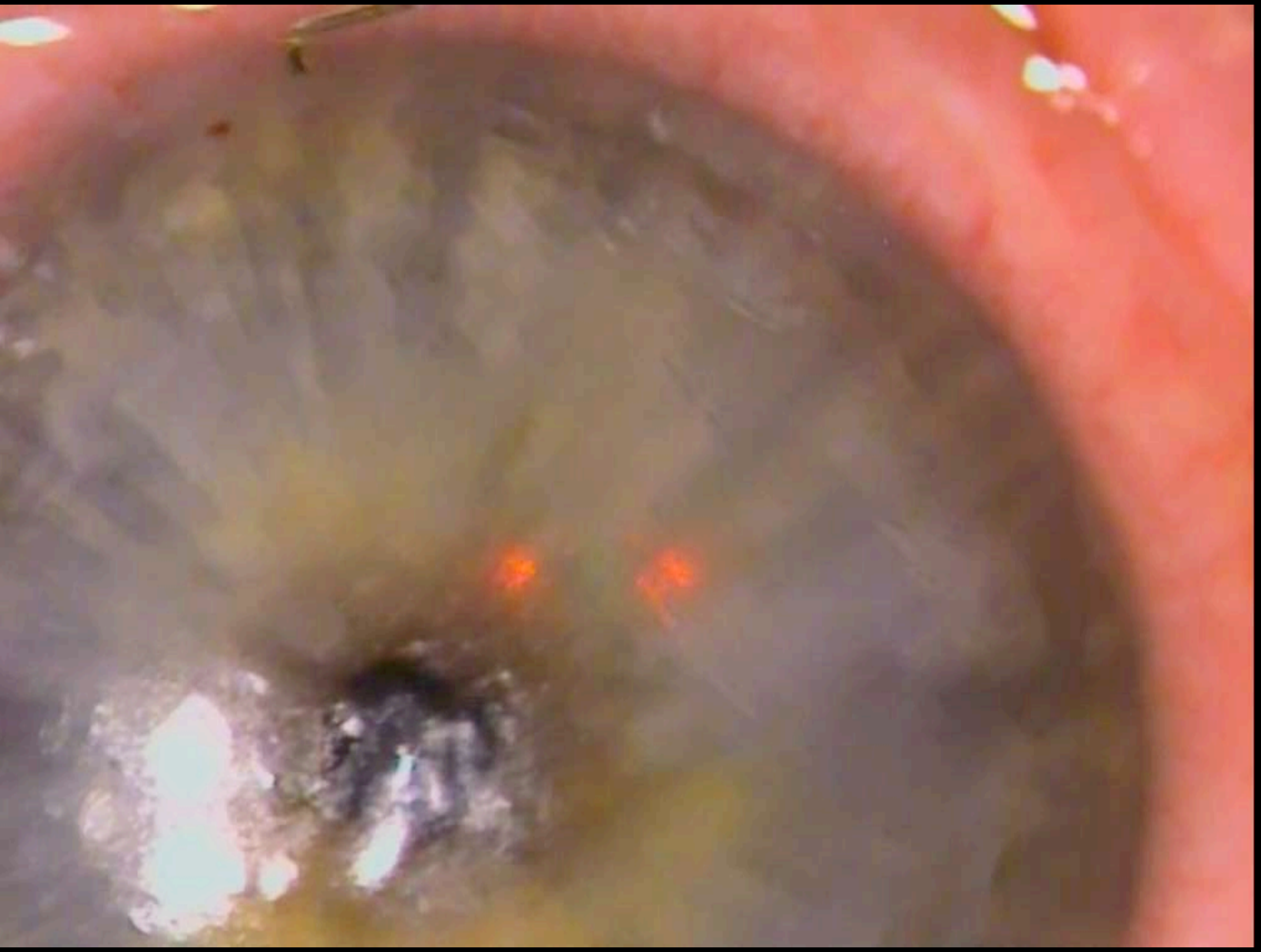
Alcohol sponge to soften the peripheral epithelium

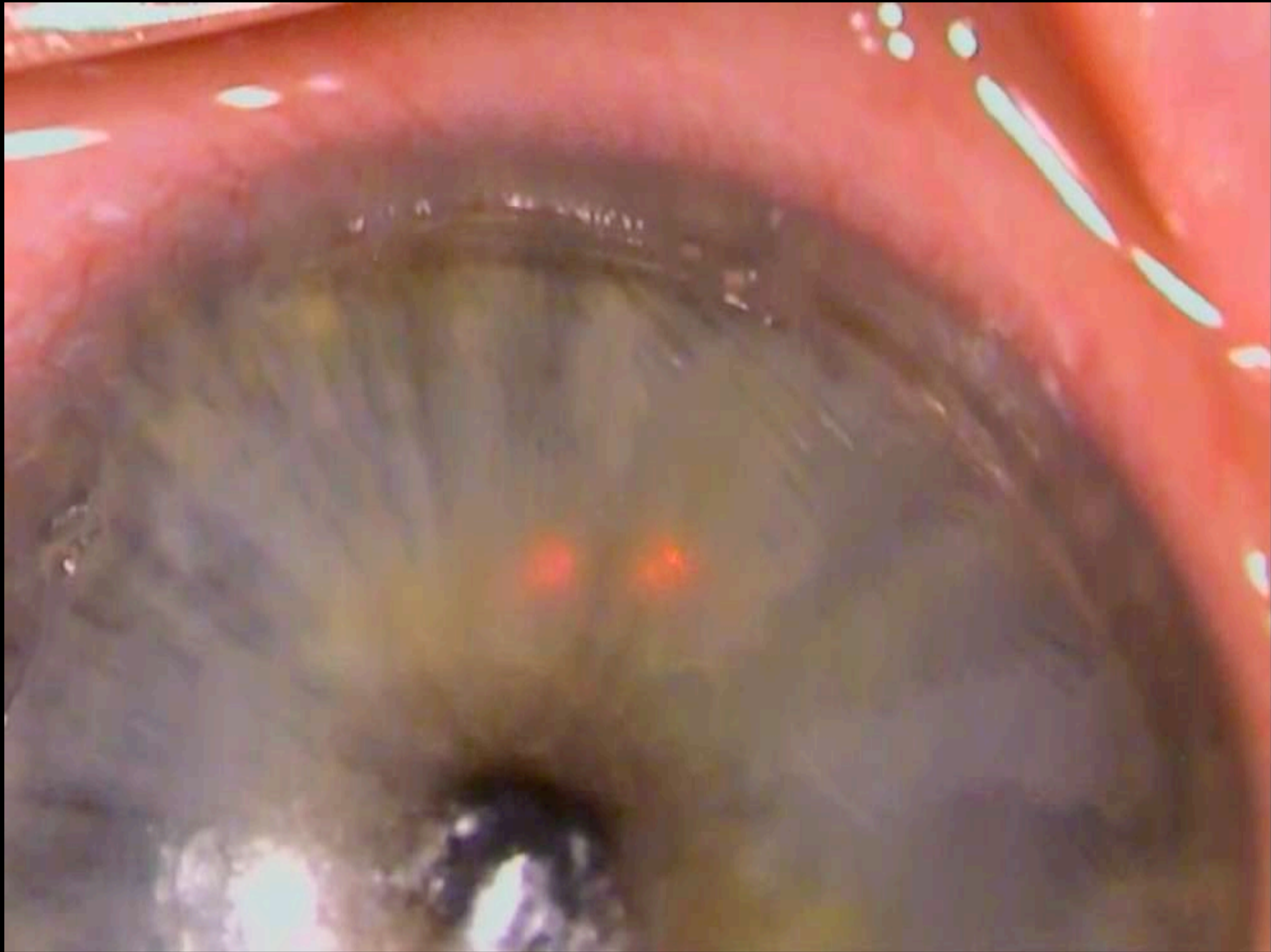


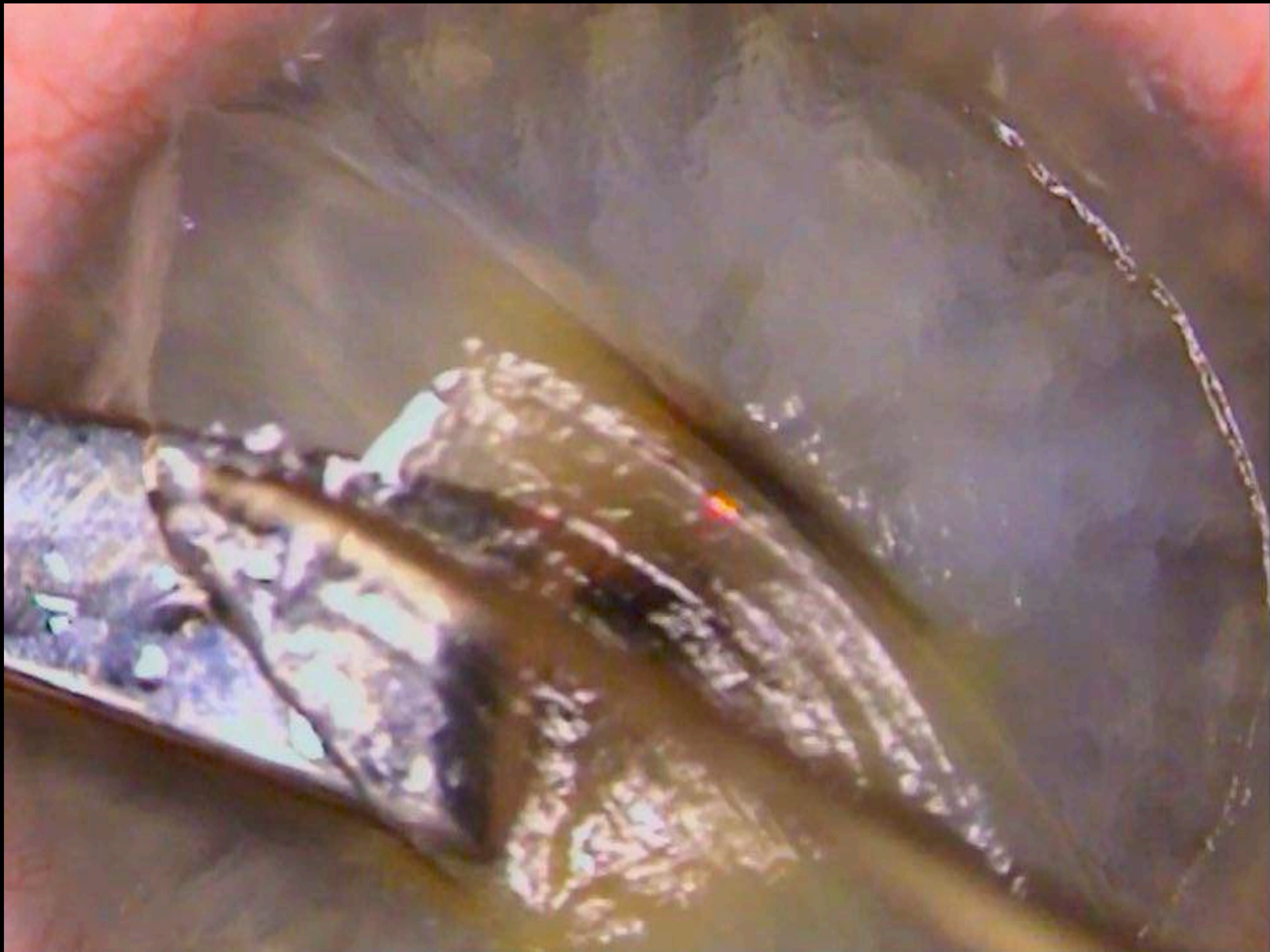
Open the flap edge away from the area of trauma







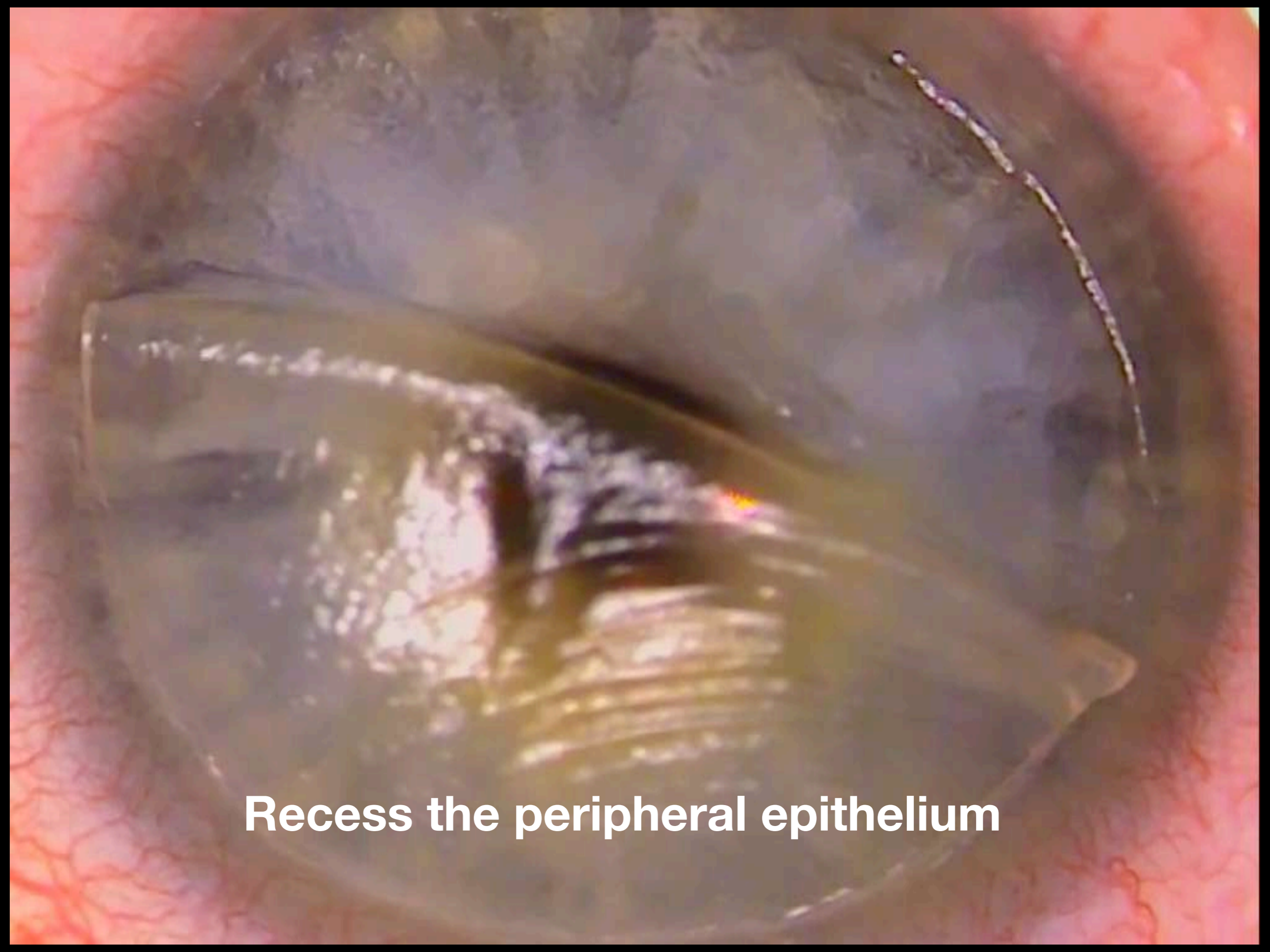




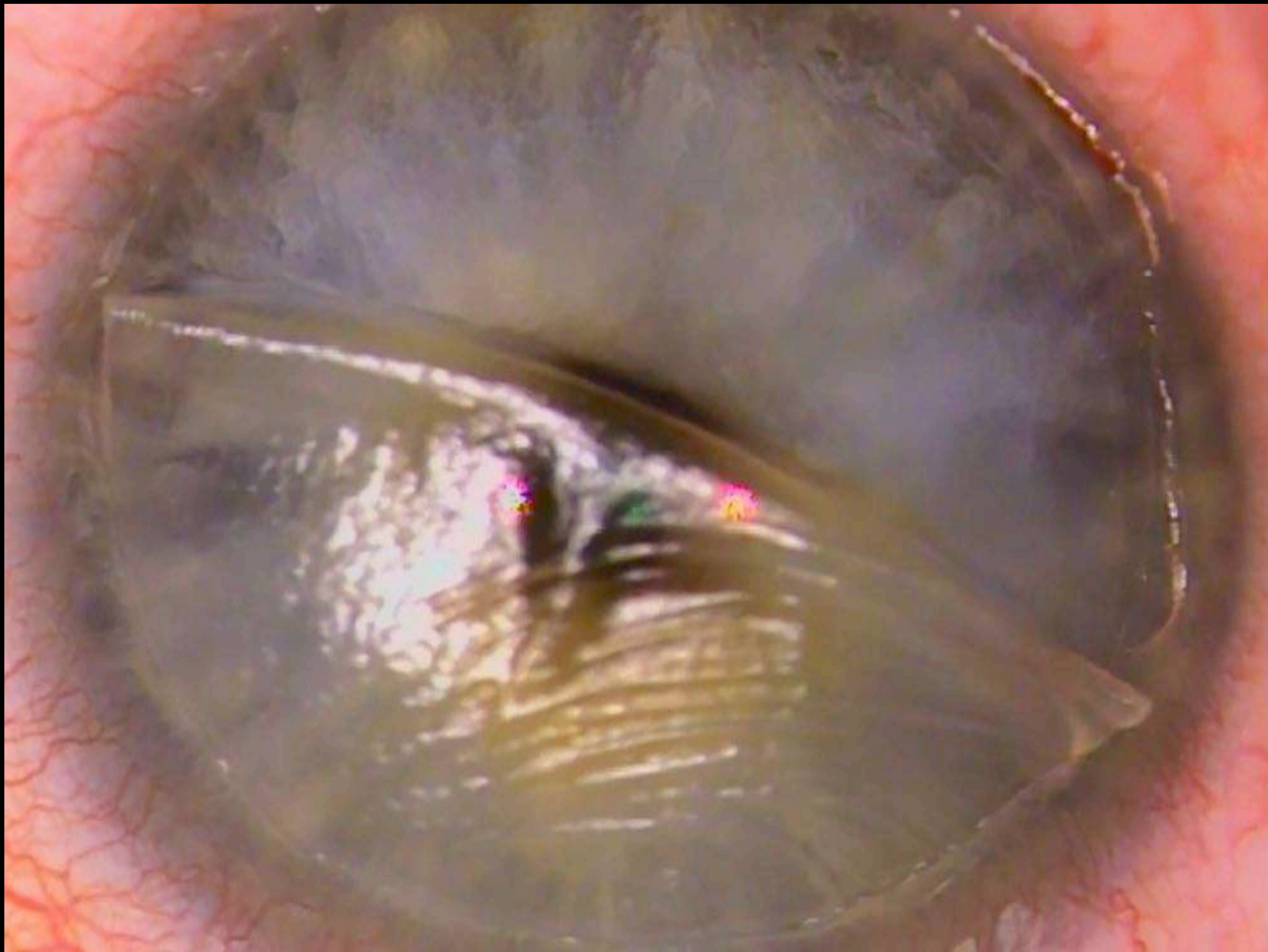


Use a dry sponge to remove the epithelium from the posterior flap and edge





Recess the peripheral epithelium



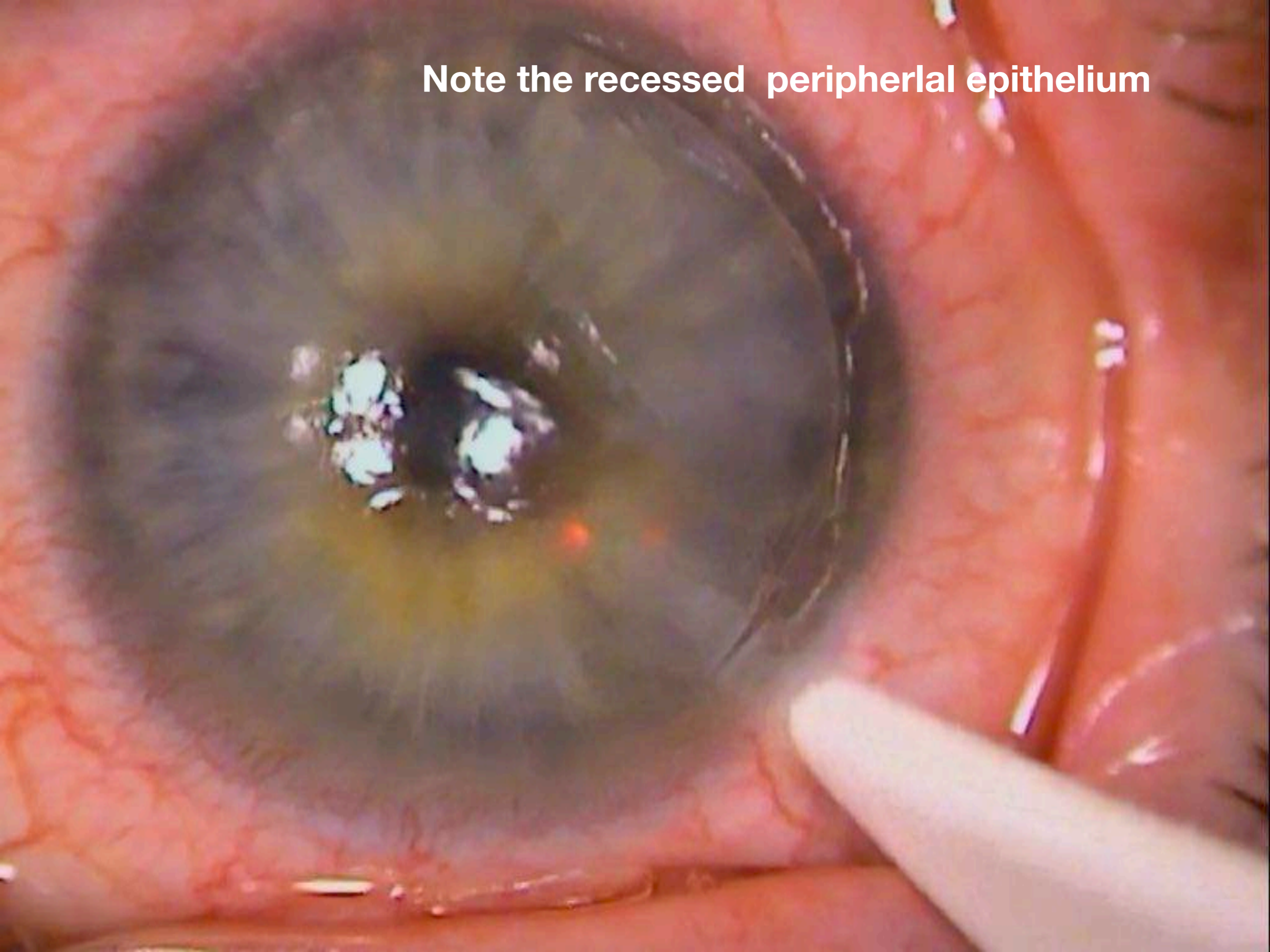
Hydrate the folds in the flap with BSS



An intraoperative photograph showing a surgical flap. The flap is a large, dark, rectangular piece of tissue with a central, circular, mesh-like structure. The surrounding tissue is pinkish-red and appears to be part of a surgical site. The text "Refloat the flap" is overlaid in white at the bottom of the image.

Refloat the flap

Note the recessed peripheral epithelium



Use of the Honan Intraocular Pressure Reducer Prior to High Risk Cataract Surgery

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Nebraska Laser Eye Associates*

**The author has no financial interest in
the subject matter of this presentation.**

Purpose

- To assess the risk of posterior capsule rupture and vitreous loss when a Honan balloon was used before high risk cataract surgery.
- The secondary purpose, using the National Health Service “Cataract National Dataset”, was to study which specific risk factors were most common in patients in which a decision was made to use the Honan Balloon.



The Cataract National Dataset Electronic multicentre audit of 55 567 operations: risk stratification for posterior capsule rupture and vitreous loss,
N Narendran, P Jaycock, RL Johnston, H Taylor, M Adams, DM Tole, RH Asaria, P Galloway and JM Sparrow,
Eye (2009) 23, 31-37

Calculated risk of Capsular rupture or vitreous loss

Patient

DOB

Age	<60	1.00	
	60-69	1.14	
	70-79	1.42	
	80-89	1.58	
	90-	2.37	1.58
Gender	Female	1.00	
	Male	1.28	1.28
Glaucoma	No	1.00	
	Yes	1.30	1.00
Diab Ret	No	1.00	
	Yes	1.63	1.63
Brown/white lens	No	1.00	
	Yes	2.99	2.99
No view fundus	No	1.00	
	Yes	2.46	1.00
PXE, Loose zon	No	1.00	
	Yes	2.92	1.00
Pupil size	Large	1.00	
	Medium	1.14	
	Small	1.45	1.45
Axial Length	< 26.0	1.00	
	> 26.0	1.47	1.47
Doxazosin	No	1.00	
	Yes	1.51	1.00
Able to lie Flat	Yes	1.00	
	No	1.40	1.00

Other risk factors (circle)

- Flomax
- Shallow AC
- Restlessness
- Language
- Alz meds
- Statin
- SOB
- Trauma
- Rheumatoid
- Toric
- Allergy

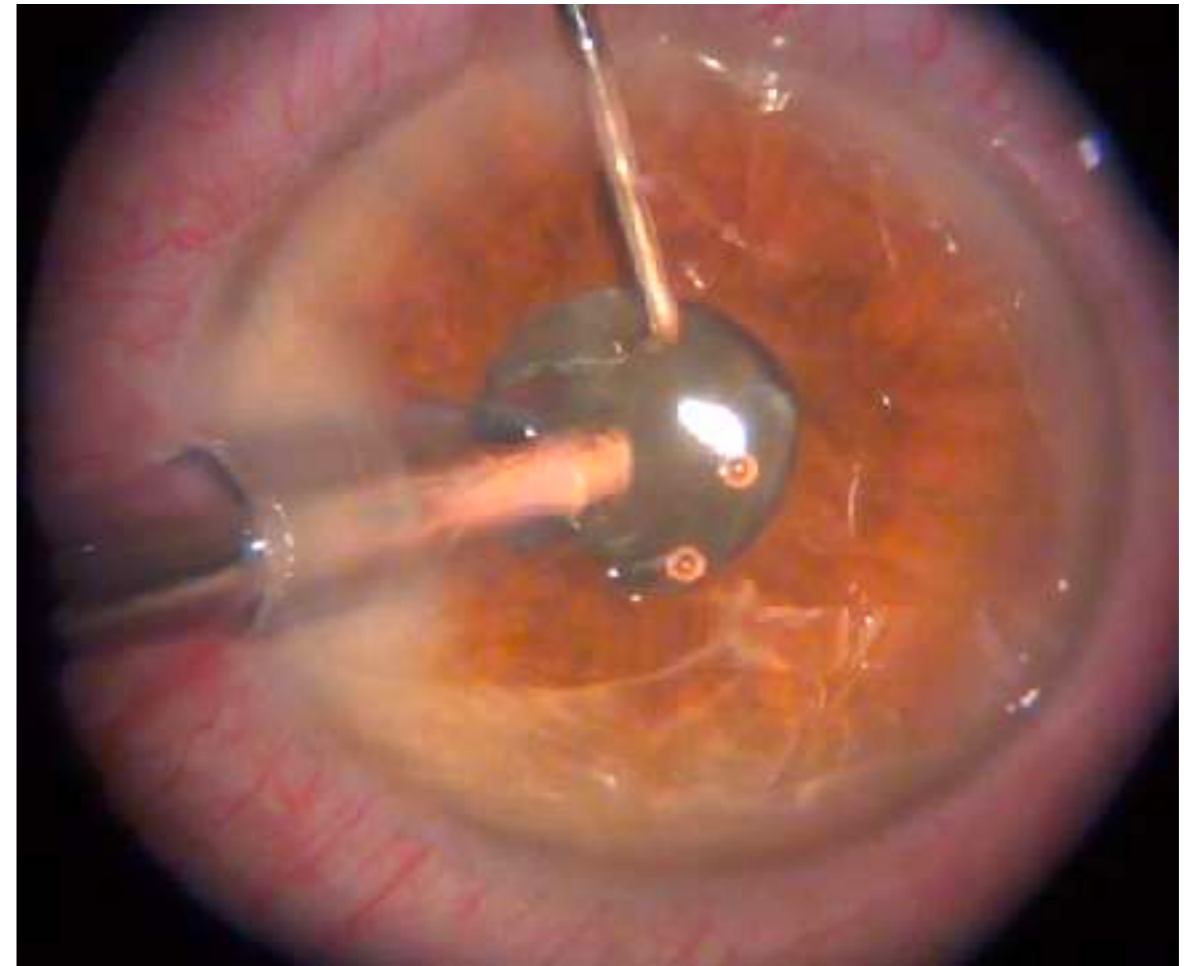
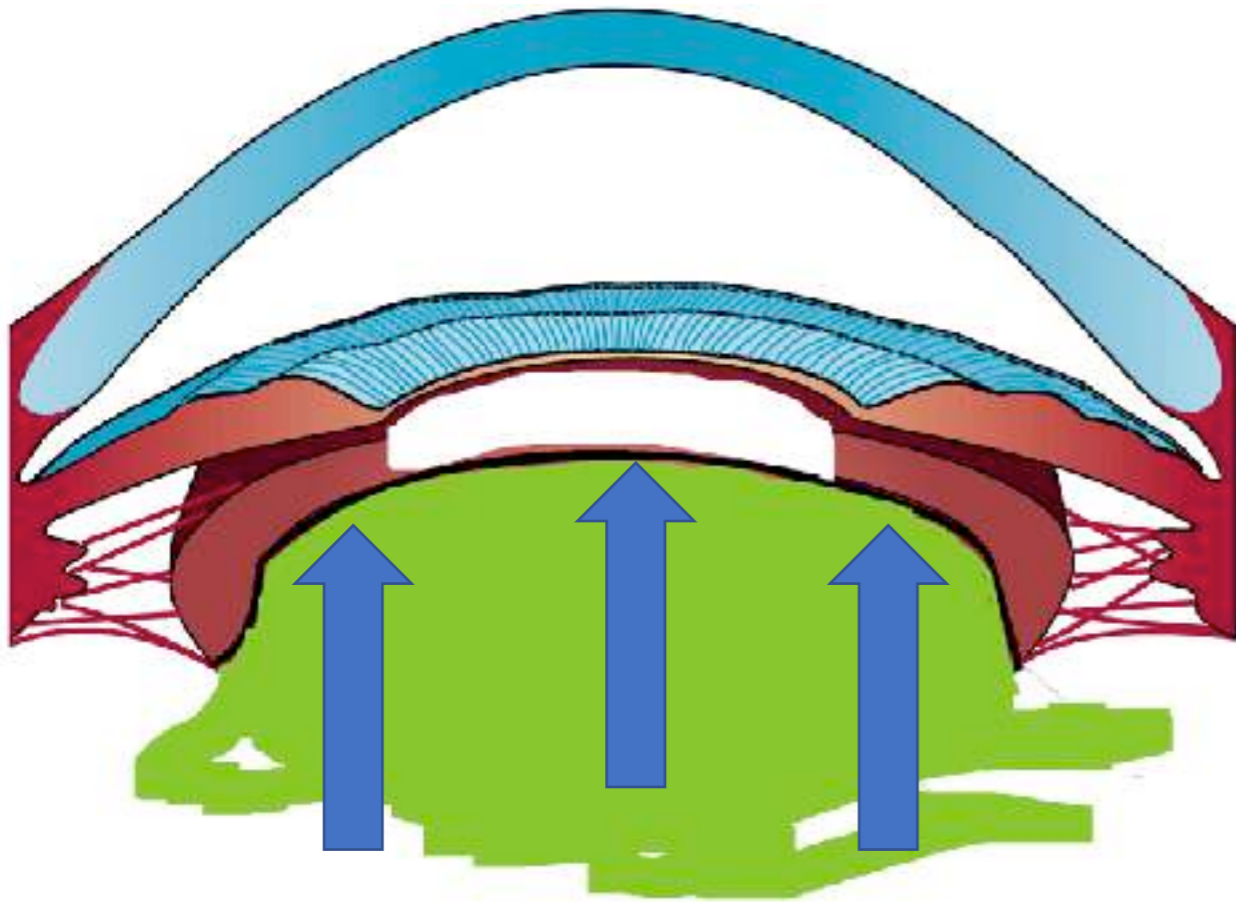
Odds Ratio

21.01

Prob V %

14.00

- Less vitreous pressure may
 - allow more room for hydro-dissection, rotation of the lens, and phacoemulsification
 - decrease the risk of iris prolapse
 - easier removal of cortex from the capsular fornix
 - bimanual technique often a useful adjunct



Methods

- A prospective study was done of all cataract surgeries by one surgeon over a one year period.
 - After clinical review of the patient and risk factors ,the surgeon made a clinical decision on which patients to use a Honan device.
 - The dilated pupil size was measured at the slit lamp just before surgery.
 - An optical biometer (IOL Master) was used to measure the anterior chamber depth.

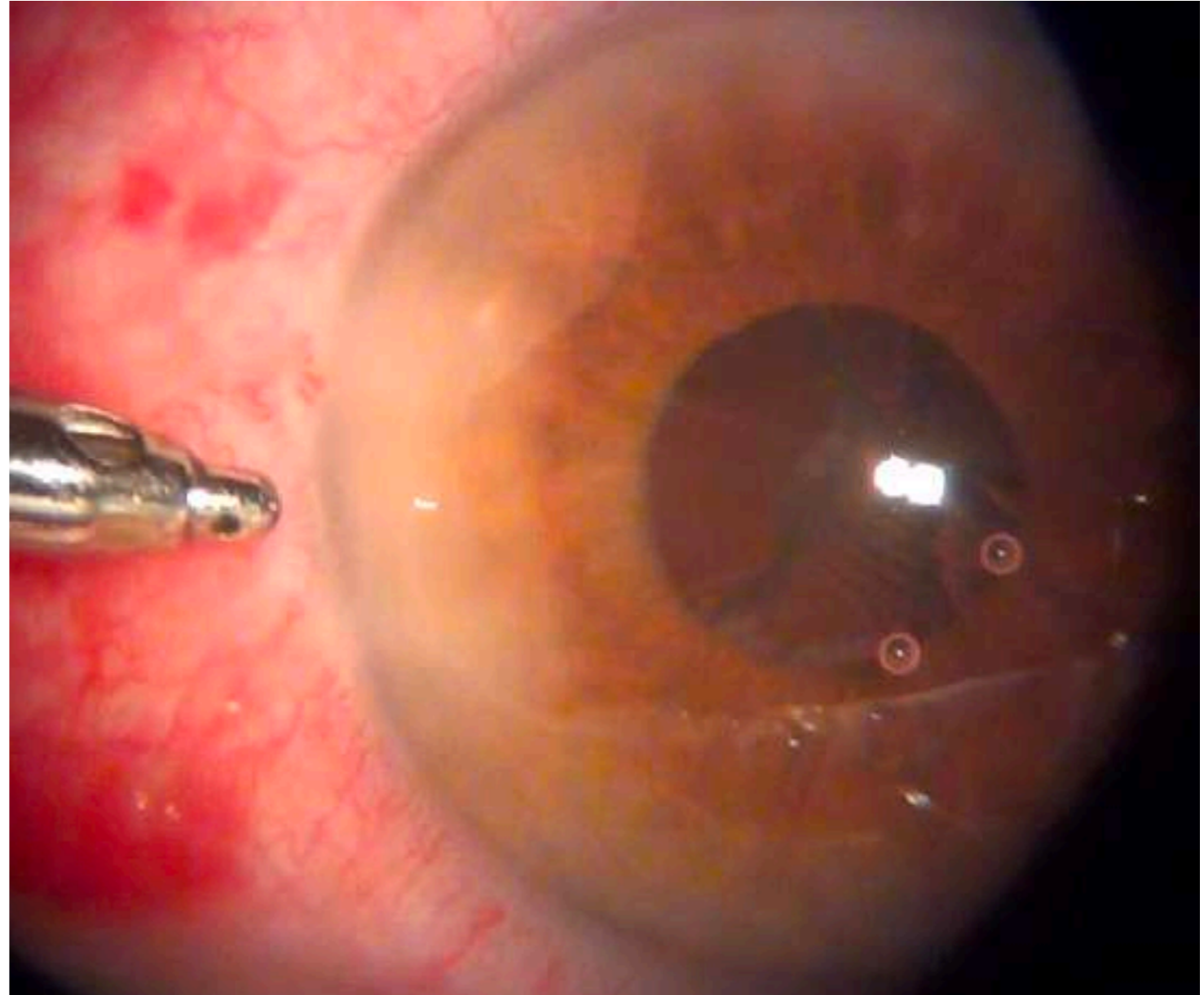
Methods

- Selected patients had the Honan balloon applied for 10 minutes at 40 MM Hg just prior to the surgical prep.
- When the Honan was used, non-preserved epinephrine 1% (diluted 1/3 in BSS) was injected into the anterior chamber immediately after making the initial incision.



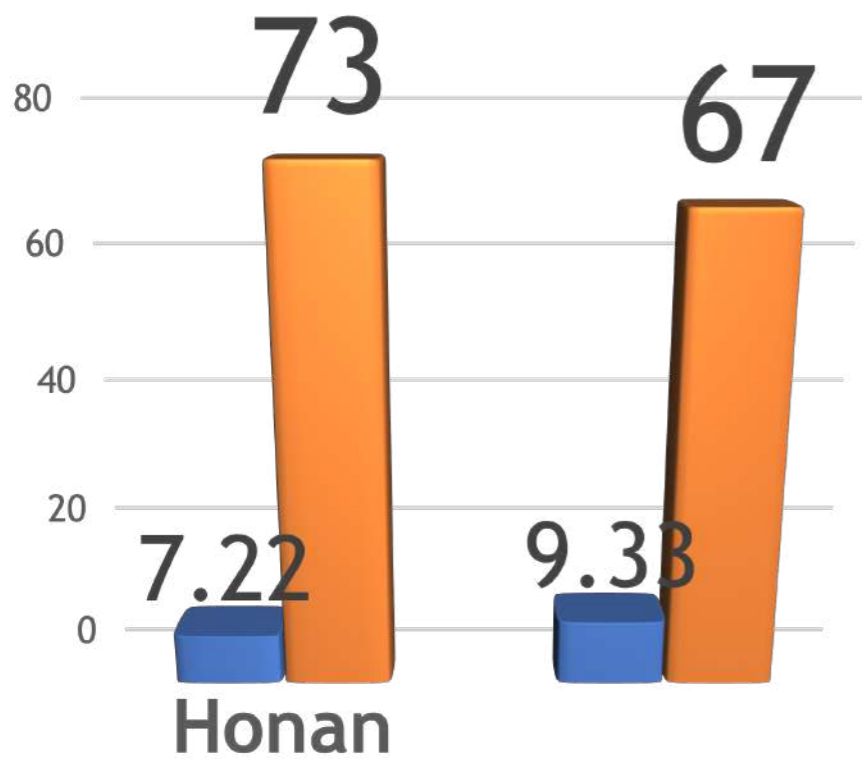
Results

- Of a total of 370 cases, the Honan was used in 58 eyes.
- Honan was more common in males (Odds ratio 1.81, $p=0.038$).
- Honan group risk factors included:
 - shallow anterior chamber =38,
 - small pupil =27,
 - dense lens=22,
 - α -adrenergic blocker =10,
 - calcium channel blocker =10,
 - PXE =3.



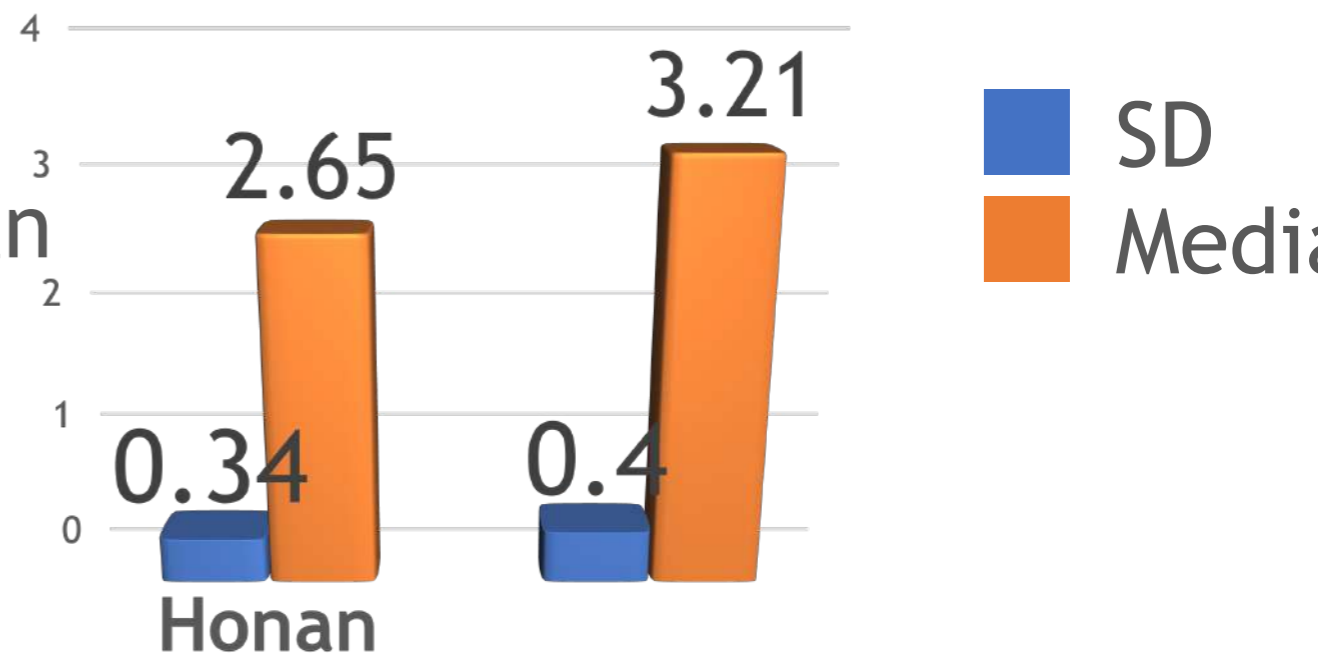
Age: Honnan group significantly older

Age



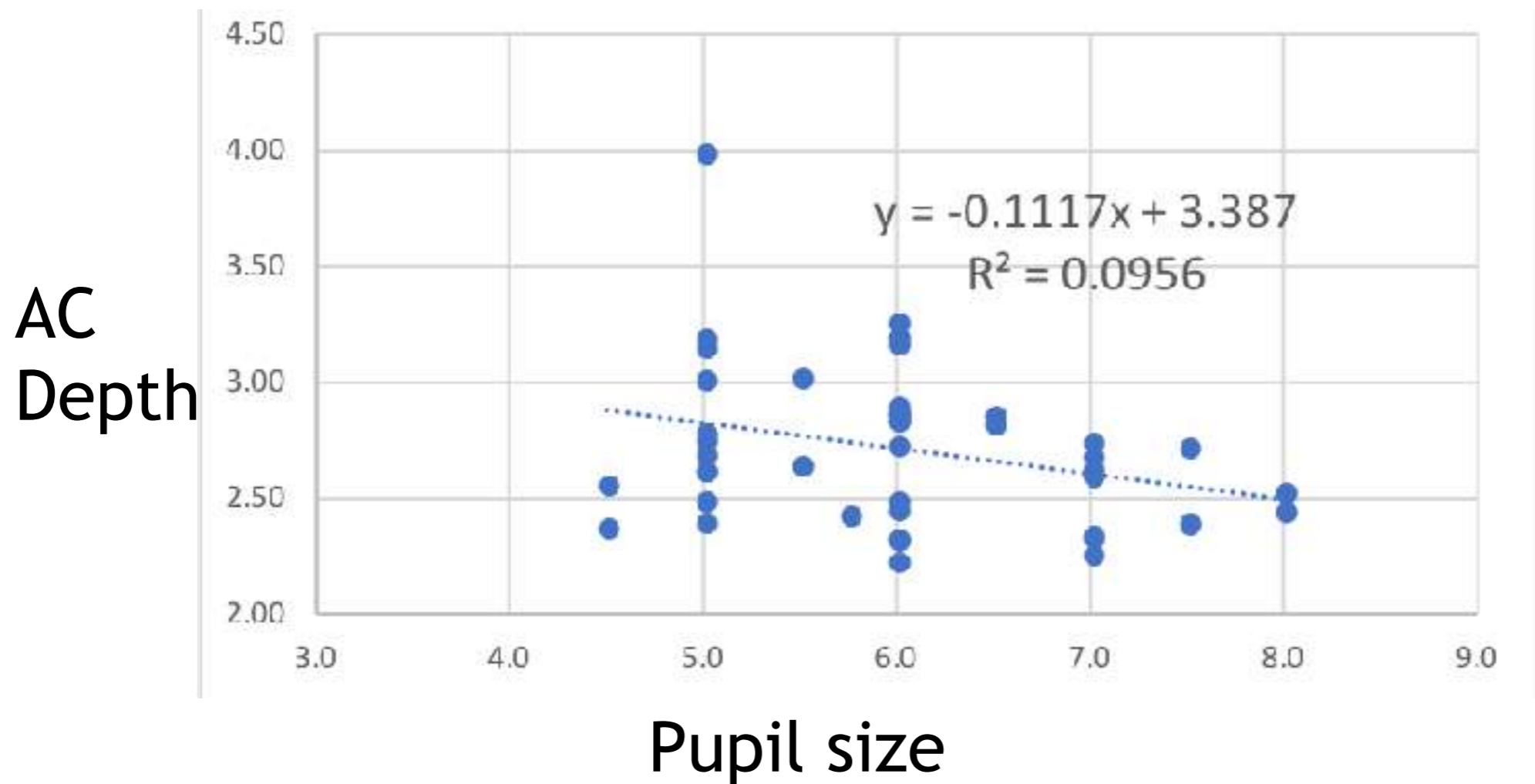
Anterior Chamber Depth: Significantly less in the Honnan Group

Anterior Chamber Depth



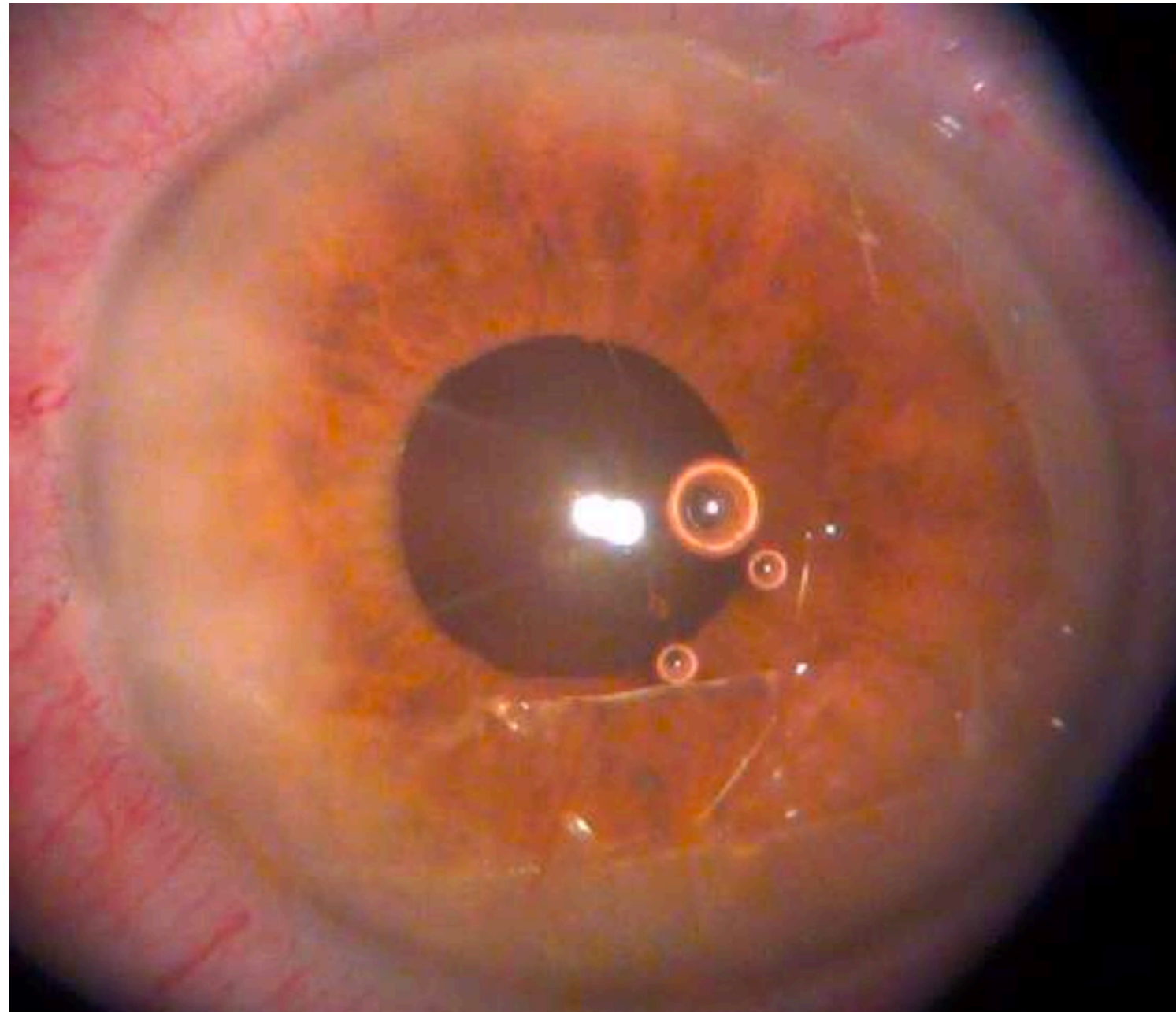
Honan Balloon was typically used with:
Small Pupils and/or Shallow Chambers

Average Pupil Size:	6.0 mm.	SD 1.0
Average AC Depth:	2.65 mm.	SD 0.34



Results

- In neither group did iris prolapse occur or was mechanical dilation necessary.
- There were no cases of capsule rupture in the Honan group.
- In the Non-Honan group, one eye with phacodonesis required an anterior vitrectomy.



Conclusion

- The Honan balloon is a safe adjunct in complex cataract surgery.
- The cases selected for Honan use were more likely to have a shallow anterior chamber, a smaller pupil, be older, and be male.
- The use of the Honan balloon should be considered in cases that are at higher risk for capsular rupture during cataract surgery.

