






To a stressless phaco
No magic just tips and tricks

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Contineous learning curve



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Contineous learning curve

- Steep in the beginning
- Difficult cases under RA or GA
- Flatter afterwards
- Challenge yourself !
- Every new technique = stress
- Mastering the theory



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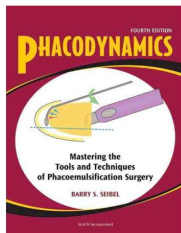
Master the theory and you're halfway !

- Phaco machine(manual, rep, user meetings)
- Cataract surgery \approx physics/math
- Always a plan B !



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The bible !



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Always a plan B !

- Strategy to address the complication
 - protocol
 - backup from a more experienced colleague
 - video
- Required materials
 - Present in OR / location known !
 - Familiar with its manipulation
- Calm (protocols) and step by step



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Materials for complications

- Vitrectomy / trocar for pars plana approach
- Iris hooks / Malyugin ring
- Capsular hooks
- Capsular tension ring
- Sutures / additional viscoelastic material
- Anesthetic for retrobulbar anesthesia
- Marker
- Tisseel
- Box with extra instruments



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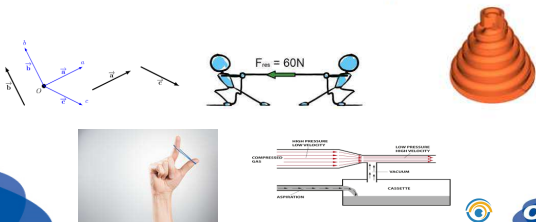
Materials for complications

- Crescent blade
- Cautery
- Sulcus lens
- Triamcinolone
- IOL cutter
- Miloop
- Please note the expiration date !



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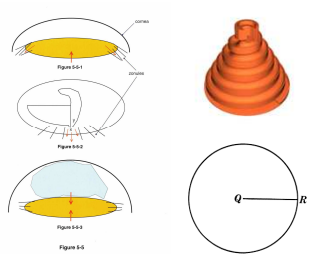
IT'S ALL ABOUT PHYSICS AND MATHEMATICS !




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Capsulorhexis

- KEEP THE LENS SURFACE FLAT



The diagrams illustrate the capsulorhexis procedure. Figure 55-1 shows the initial capsulorhexis incision. Figure 55-2 shows the progression of the incision. Figure 55-3 shows the final stage where the lens is being lifted. A 3D model of the lens is shown to the right. A circular diagram below shows the radius R and the diameter Q .



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Tearing versus ripping



A photograph showing a person's hands tearing a piece of cardboard. The person is wearing a green sweater and has red nail polish. The cardboard is being held in one hand and is being torn with the other hand.



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Safe rhexis
*Follow -Exit – Park -Reenter
the highway*

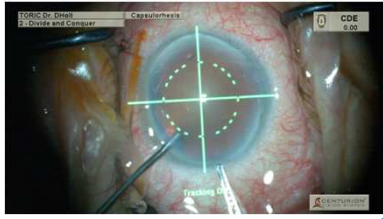


A photograph showing a person's hands ripping a piece of cardboard. The person is wearing a green sweater and has red nail polish. The cardboard is being held in one hand and is being ripped with the other hand.



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Safe rhexis: exit-park-reenter



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Tearing and not regrasping
=
tearing + ripping
=
less control



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Capsulorhexis: follow the highway

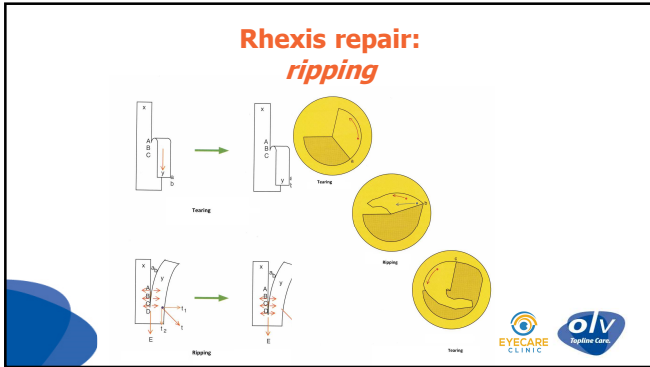
The rhexis is not going in the expected direction.

STOP!!!

Determine the cause and correct it.



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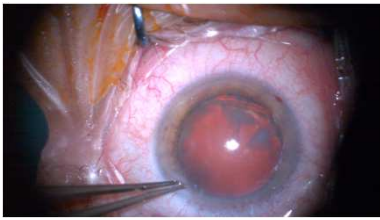


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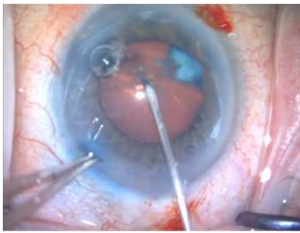
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Rhexis over a cortical spoke



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Cutting of an incomplete rhexis



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Hydrodissection
The GOOD and the BAD



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Rotation of the nucleus

- Danger of poor hydrodissection:
 - Posterior capsular tear!
 - Zonulolysis
- How to avoid it:
 - Perform proper hydrodissection.
 - Use a push and release technique to rotate
 - NEVER overstretch
 - Emulsify without rotation



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Do not overstretch



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Cracking: PUT THEM DEEP
you want to rip them apart !



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Sculpting en cracking: PUT THEM DEEP


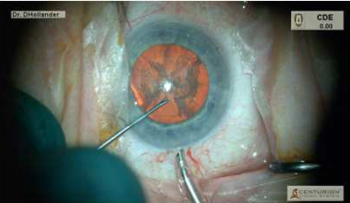


Figure 3-181

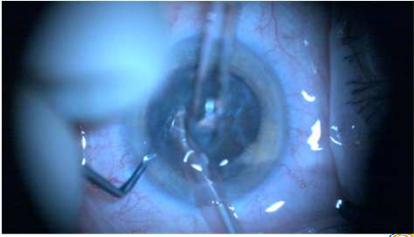
Figure 3-182



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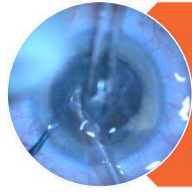
Plan B: Non-rotating nucleus.



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Plan B: Non-rotating nucleus.



Create a complete groove and initiate a crack.
Create the second groove at a 45° angle and initiate a crack.
Emulsify the nucleus.
Sweep the last half centripetally

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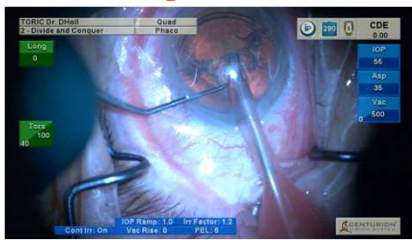
Tips sculpting en cracking

- Adjust phaco mode to cataract density.
- Sculpt to 2/3 depth.
- Place instruments deep and parallel to the groove.
- If the first groove doesn't break, start with the second



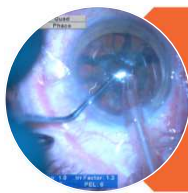
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Less gives more !



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Less is more



Too efficient phaco:
 No occlusion
 You're eating the piece
 Risk of capsular tear
 Difficult to grasp the first quadrant



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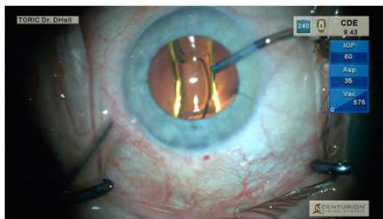
Think logically in terms of principles of forces and vectors

- Use **leverage** to the maximum and in the correct direction.
- **Elasticity** has a maximum (push and release).
- A larger surface with **vacuum** results in greater traction.
- Excessive phaco efficiency impedes proper vacuum.



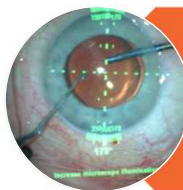
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Positioning a toric IOL



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Positioning a toric IOL

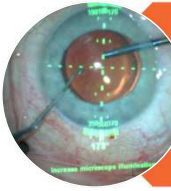


- Put the IOL 10° anticlockwise
- Rotate the IOL to correct axis
- Always apply peripheral pulling and pushing (lever effect)
- Check monocularly
- Hydrate one paracentesis and then quickly the other





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Positioning a toric IOL



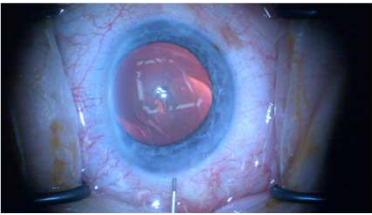


- Avoid dislocation of the optic from the bag
- Check position of IOL and tonus
- Repeat the steps eventually
- Final monocular check
- Inject AB slowly !



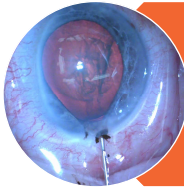
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Irisprolaps





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Irisprolaps: MAKE IT SOFT

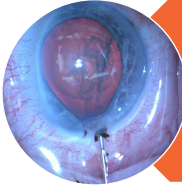


- Minimize manipulation / avoid touching the iris
- Make the eye SOFT (dry I/A)
- Reposition through the paracentesis





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Irisprolaps

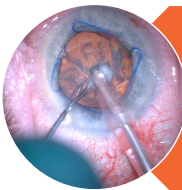


Work in a closed system
Use a dispersive viscoelastic above the iris before inserting the tip or IOL.





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Irisprolaps



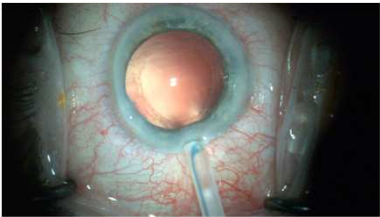


Insert phaco without irrigation
Caution: Flush the phaco needle in I/A mode BEFORE sculpting to avoid corneal burns




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Inserting a capsular tension ring
FILL IT UP




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Inserting a capsular tension ring





- Pre-bent capsular tension ring
- Fill the bag completely
- Caution: folding the capsule or stretching the ring
- Rotate the capsular tension ring.



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When in the wrong chamber...


- Entering the posterior chamber during cataract surgery : there it comes ...



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When in the wrong chamber


- 1. Don't panic. Don't leave the eye!



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When in the wrong chamber


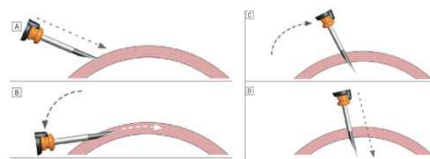
- 1. Don't panic. Don't leave the eye!
 - Maintain a deep anterior chamber (irrigation ON)
 - Other hand: fill the AC with visco-elastic (dispersive)
 - Gently pull out your irrigation device (phaco / IA)
 - Think



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When in the wrong chamber


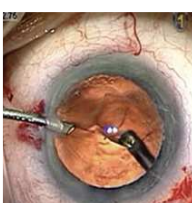
- 2. When in doubt : take the extra step :
place a trocar (pars plana)



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When in the wrong chamber

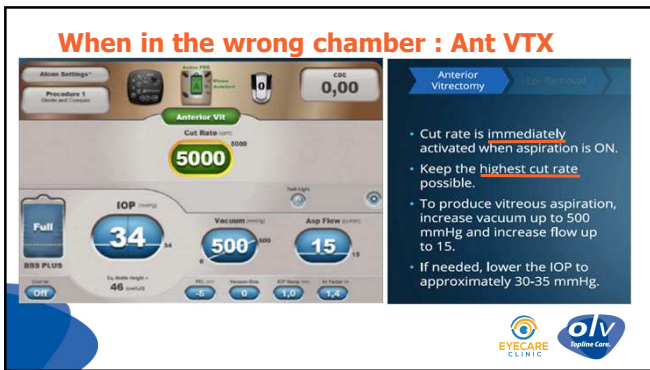
- 3. Anterior Vitrectomy
 - Make sure you see the opening of your vitrectome
 - Nice and easy (high cut rate)
 - Irrigation in the AC ON
- Stain the vitreous in the AC with triamcinolone (Vitreal S)



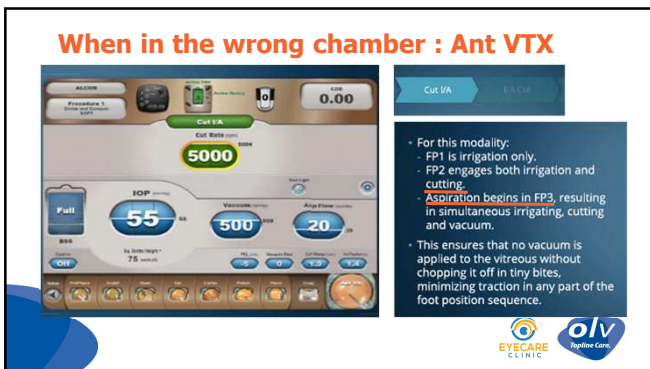
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When in the wrong chamber : Ant VTX

IA Cut

- In this modality:
 - FP1 is irrigation only.
 - FP2 engages vacuum.
 - FP3 activates cutting mode.
- This setting allows followability during residual cortex removal after prolapsed vitreous has been dispatched.
- Surgeons can remain in FP2 while removing lens material with nearly instant activation of the cutter in the event of vitreous presenting.

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When in the wrong chamber

- 4. Place IOL in the sulcus if possible
 - always make IOL calculation for sulcus IOL pre-op
- 5. Pilocarpine (Miostat) at the end of the surgery
 - Check pupil (regular)
- 6. Be Proud

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When in the wrong chamber

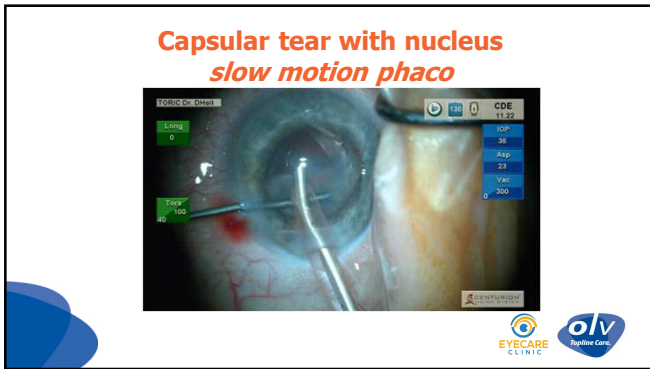
Looks like it's fuck this shit o'clock.

No shame in placing an IOL in 2nd time

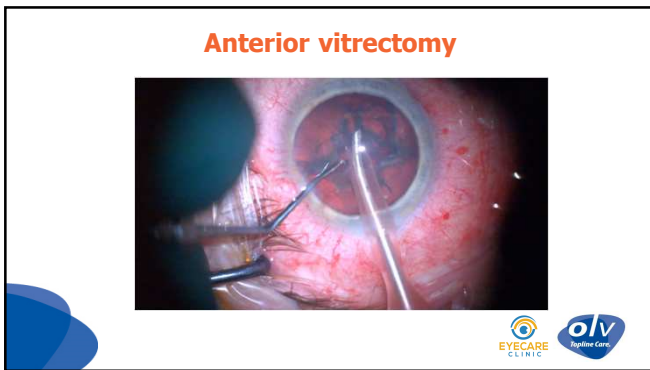
Clean the AC !!!!!

your e cards
someecards.com

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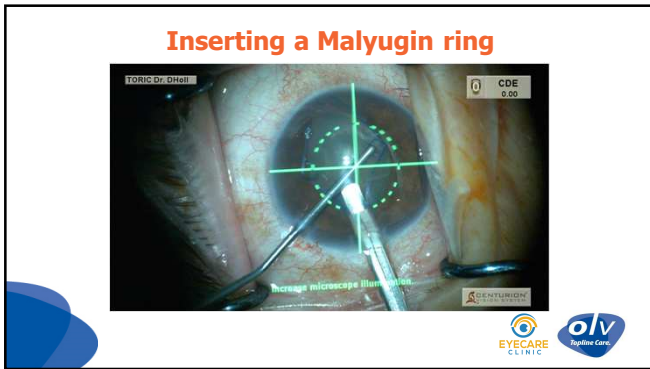
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Tips in case of posterior capsular tear

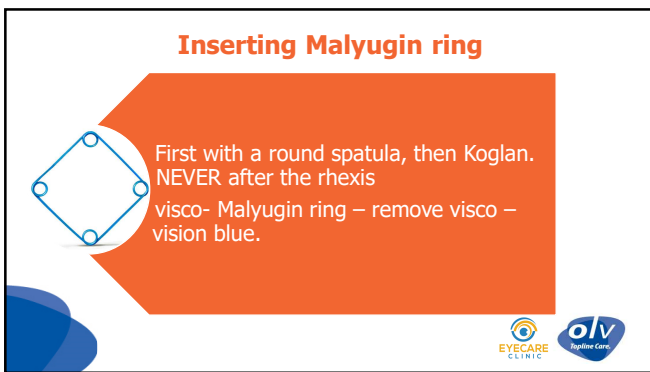
- Maintain a deep anterior chamber
- If the nucleus is present: use eventually a trocar + dispersive viscoelastic
- Consider vitrectomy if necessary.
- Reposition the nucleus above the intact capsule
- Dye the vitreous or check it through (minimal) traction

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Cataract surgery ≈ dominoes





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Small issues can set off a cascade



- Can I get away with it?
 - Small pupil
 - Rhexis / Hyperreactive iris / cortex removal
 - Vision Blue
 - Poor hydrodissection

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If in doubt: take the extra step !

- Vision Blue, iris hooks, Malyugin ring, CTR
- Extra experience
- Avoiding very difficult situations

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Do's and dont's

- Be kind to your incisions (foreceps)
- Standard incisions always the same
- 2,2 mm incision
- Flush
- Bimanual I/A
- Exit fast from incisions



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Do's and dont's

- Remove small lens particles first
- Don't remove non rotating epinucleus with phaco tip
- Pull on cortex and not on epinucleus
- Polish under water and not with visco in the bag



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Repair anterior capsular tear

- Cut in another location within the anterior rhexis and complete the rhexis.
- If rhexis is incomplete, be cautious during hydrodissection and rotation. Avoid rotating with an incomplete rhexis, use a push and release technique, and work very slowly.



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Argentinian flag sign



- Same principles apply.
 - Cut and tear the rhexis.
 - Avoid rotation.



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How to avoid an Argentinian flag ?



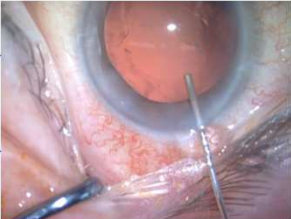
- Maintain a deep anterior chamber
- Relieve pressure in the capsular bag through paracentesis
- Consider using mannitol preoperatively



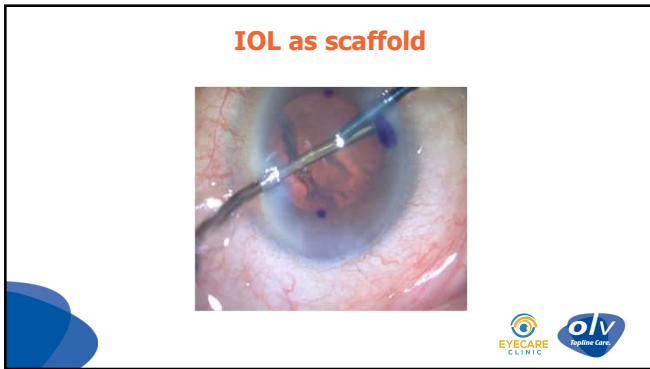
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Repair anterior capsular tear after irrigation/aspiration (I/A)

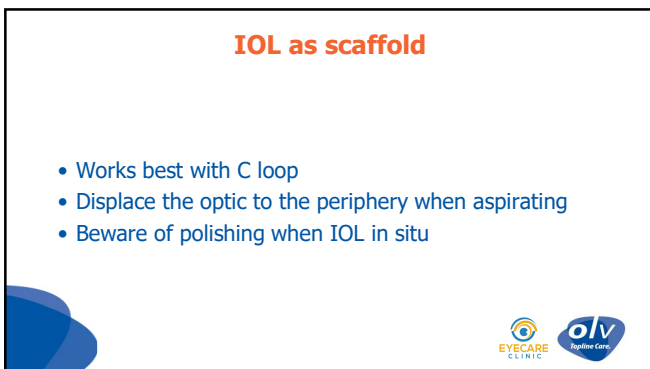
- Fill the capsular bag
- Pull centripetally!
- Be cautious of a pointed structure in the rhexis, as it may lead to extension



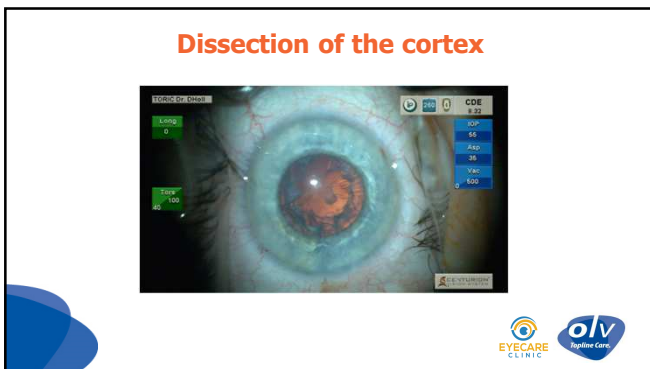
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