Management of Early IOP Rise After Implantation of Latest Model Posterior Chamber Phakic IOL

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No financial interests in the subject presented

Introduction

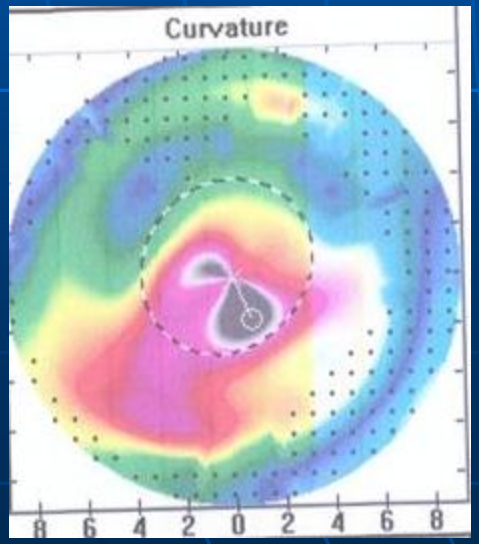
- In the event of early post-op built up IOP in the posterior chamber due to multiple factors, the ICL-iris complex will be pushed forward. This will be associated to narrow angles, shallowing of the anterior chamber and elevated IOP.

Introduction

- Potential causes:
  - Peripheral Iridotomies (too small, too peripheral, not patent, blocked by visco)
  - Retained viscoelastic
  - Oversized ICL
- Differential diganosis is critical for appropriate treatment/management.

Case presentation

- 33 y-old female: Post-LASIK Ectasia with stable cone after CXL 9 months age
  - OS -3.5’ -1.5’ x 25º = 20/33
    - W to W ≈ 11’6 (Caliper)
      - ACD ≈ 3’33 (A-scan)
        - CT ≈ 489 µ
      - YAG PI iridotomy



STAAR SURGICAL

SEARCH | CALCULATOR | SELECT DOCTOR | HELP

Welcome Ahmad Moh'd El Moatassem

SELECTED DOCTOR
52711 - Ahmad Moh'd El Moatassem
International Medical Center
Dubai, United Arab Emirates

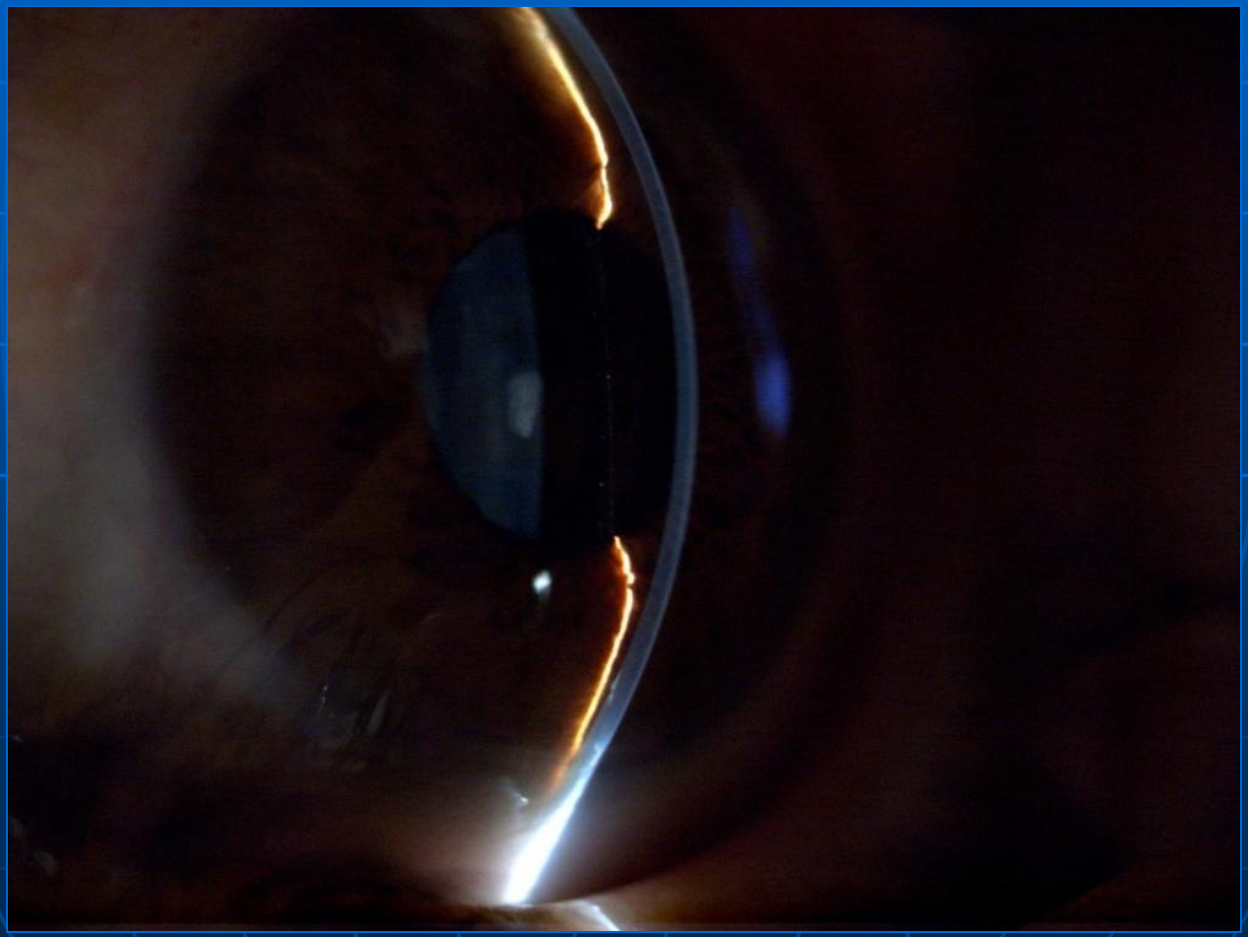
Doctor ID	**52711**	Ahmad Moh'd El Moatassem Date: 2012.02.13	Version 4.01 NaCl
Surgeon Factor	3.16		
Calculate For	○ICL ◉Toric ICL		
Patient ID	16581		
Operative Eye	○OD ◉OS		
DOB	1977.01.01		
BVD	12		
Sphere	-3.5		
Cylinder	-1.5		
Axis	25		

	Power	Degrees
K1	46.25	@ 144
K2	48.12	@ 54
ACD	3.19	
CT	0.534	
WW	11.4	
CL Sphere	0	
CL Cylinder	0	
CL Axis	0	

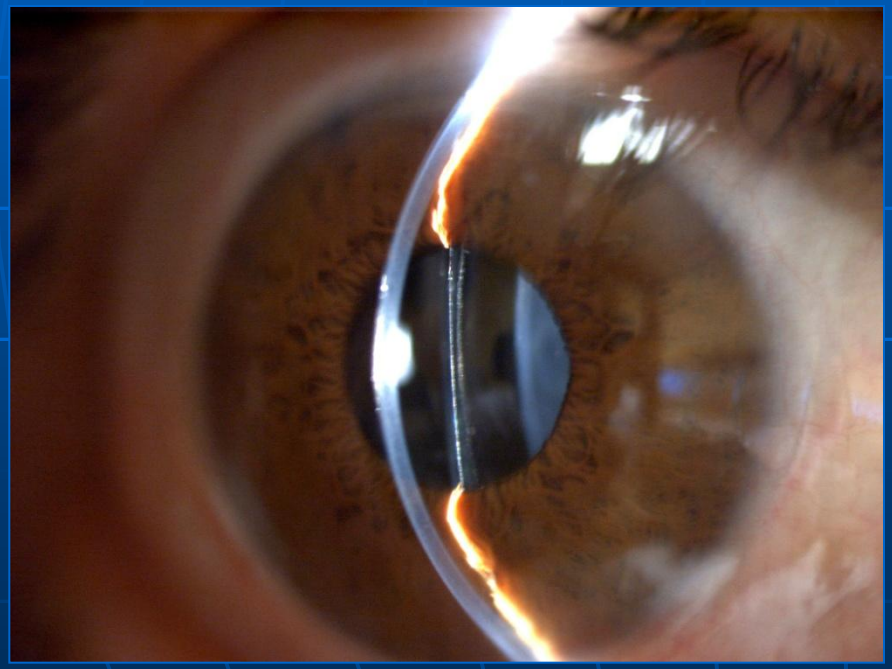
Exp Sphere	-00.55
Exp Cylinder	00.12
Exp Axis	096
Exp Seq	-00.49
Lens Selected	TICM120 -7.00/+2.0/X115
Lens ID	
Lens Sphere	
Lens Cylinder	
Lens Axis	

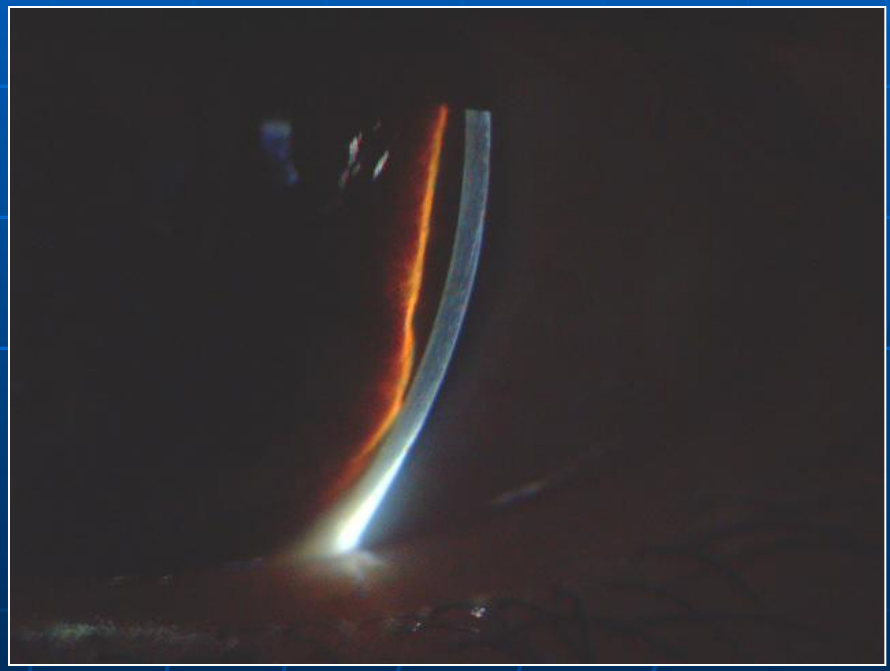
5 hours postop→ elevated IOP

> 30 mmHg



Is it wrong sized ICL or pupillary block?





High IOP > 30-40 mm Hg

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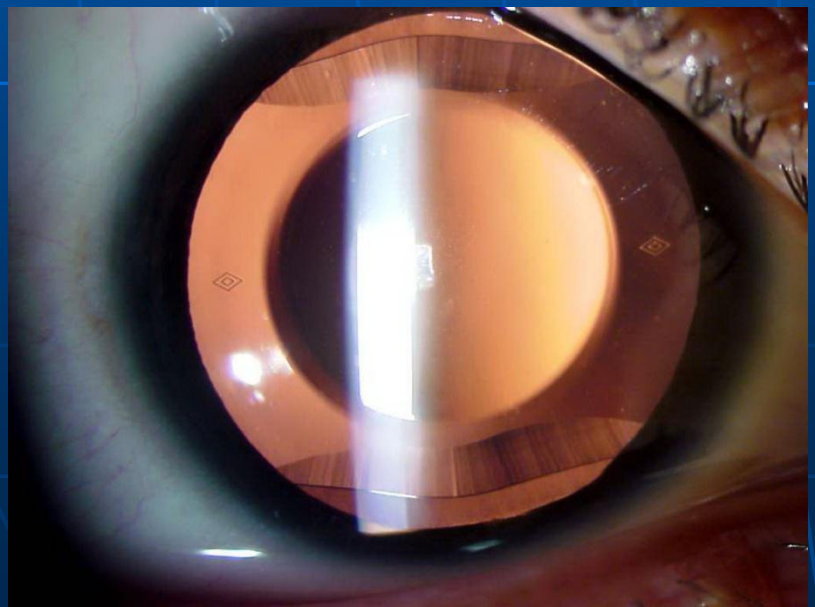
High ICL Vault > 1.5 Corneal Thickness (measured)

PUPIL DILATION

cycloplentolate + phenylephrine

TOPICAL IOP lowering agent + Oral Acetazolamide



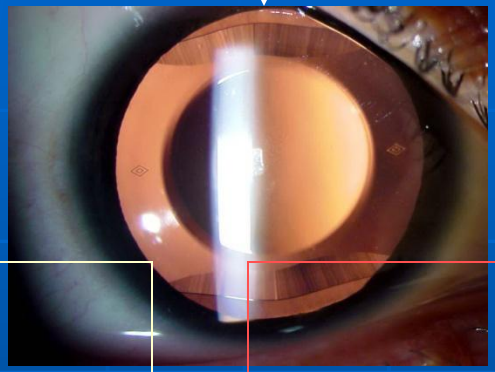
Pupil diameter should be at least 9 mm so the edges of the ICL are not covered by the pupil. This will allow aqueous and potential remaining visco to flow out decreasing IOP, facilitating the diagnosis.

High IOP > 30-40 mm Hg

&

High ICL Vault > 1.5 Corneal Thickness

Dilation,Acetazolamide + topical IOP lowering med, monitor in 2-3 h



IOP normal & ICL vault normal

IOP high & ICL vault normal

IOP normal & ICL vault high

IOP high & ICL vault high

Pupillary BLock by insufficient PIs

Viscoelastic retention

Oversized ICL

Oversized ICL & Angle Closure

Not ICL related

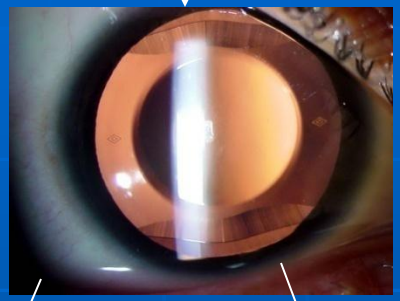
ICL related

High IOP > 30-40 mm Hg

&

High ICL Vault > 1.5 Corneal Thickness

Dilation, monitor in 2-3 h



IOP normal & ICL vault normal

Pupillary BLock by insufficient PIs

Widen or make a new PI at 1-2 mm^2. Narrow window to treat, block starts as soon as pupil constricts beyond edges of the ICL. Keep topical + oral control IOP

IOP high & ICL vault normal

Viscoelastic retention

Keep dilated, topical + oral acetazolamide.

Check at 24 h , usually back to normal, if IOP still high, then I/A at OR

IOP normal & ICL vault high

Oversized ICL

Keep dilation until exchange, usually exchange after 1 week, eye more quiet and allows for comfirmation of the Diagnosis

IOP high & ICL vault high

Oversized ICL

&

Angle Closure

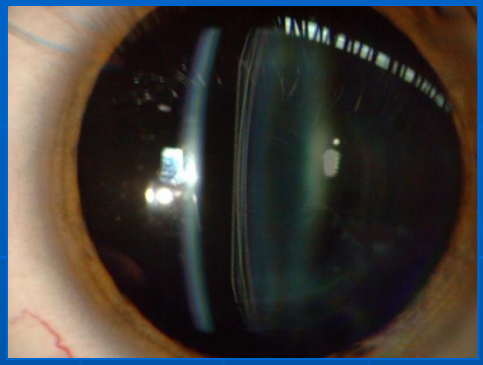
Keep dilation until explant/ exchange, usually within 24 h.

No pilocarpine

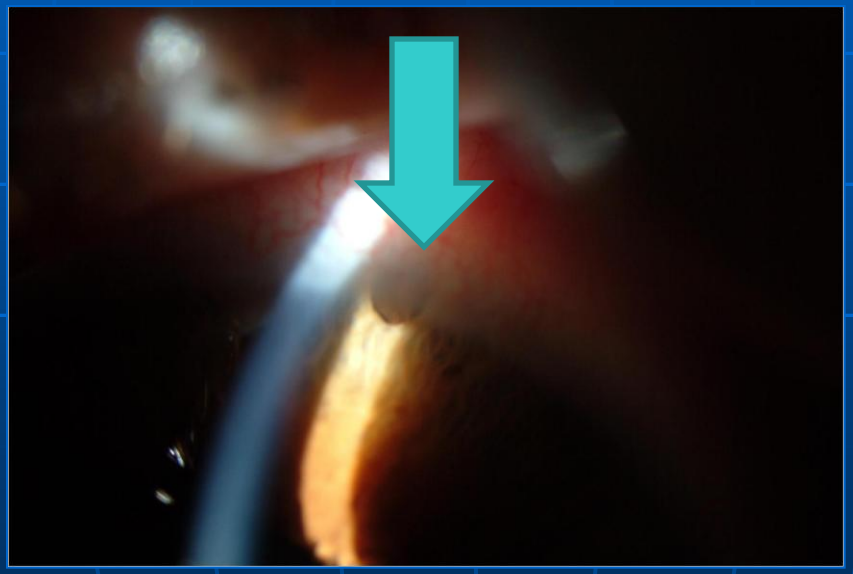
Back to our case

- Dilatation→Dilation,Acetazolamide + topical IOP lowering med, monitor in 2-3 h

After 2-3 hours



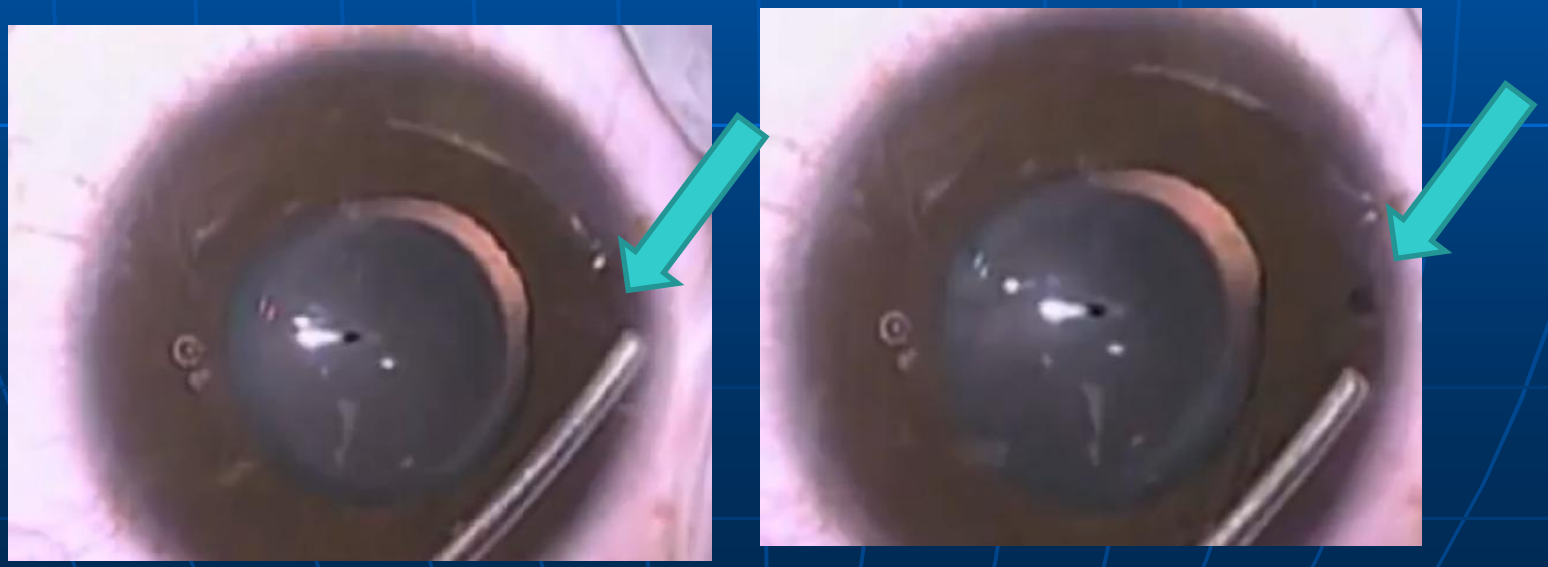
- IOP normal & ICL vault normal→
- Pupillary block dt insuffient PI

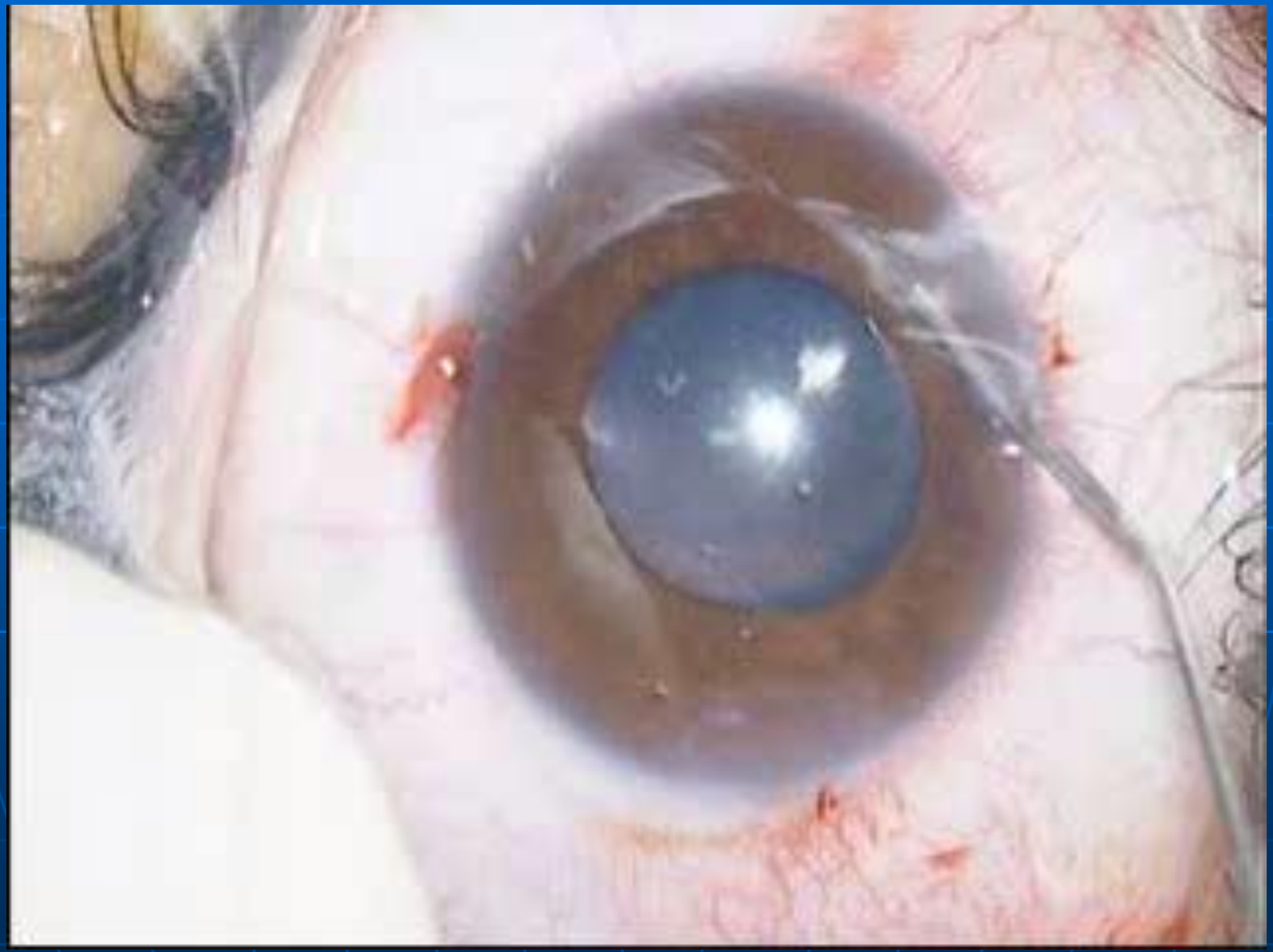


- Try to do another PI or dilate the existing one

Different ways to do Iridectomy or Iridotomy

- YAG PI and might do prior Argon
- Surgical during the procedure
- Or even using a vitrectomy probe

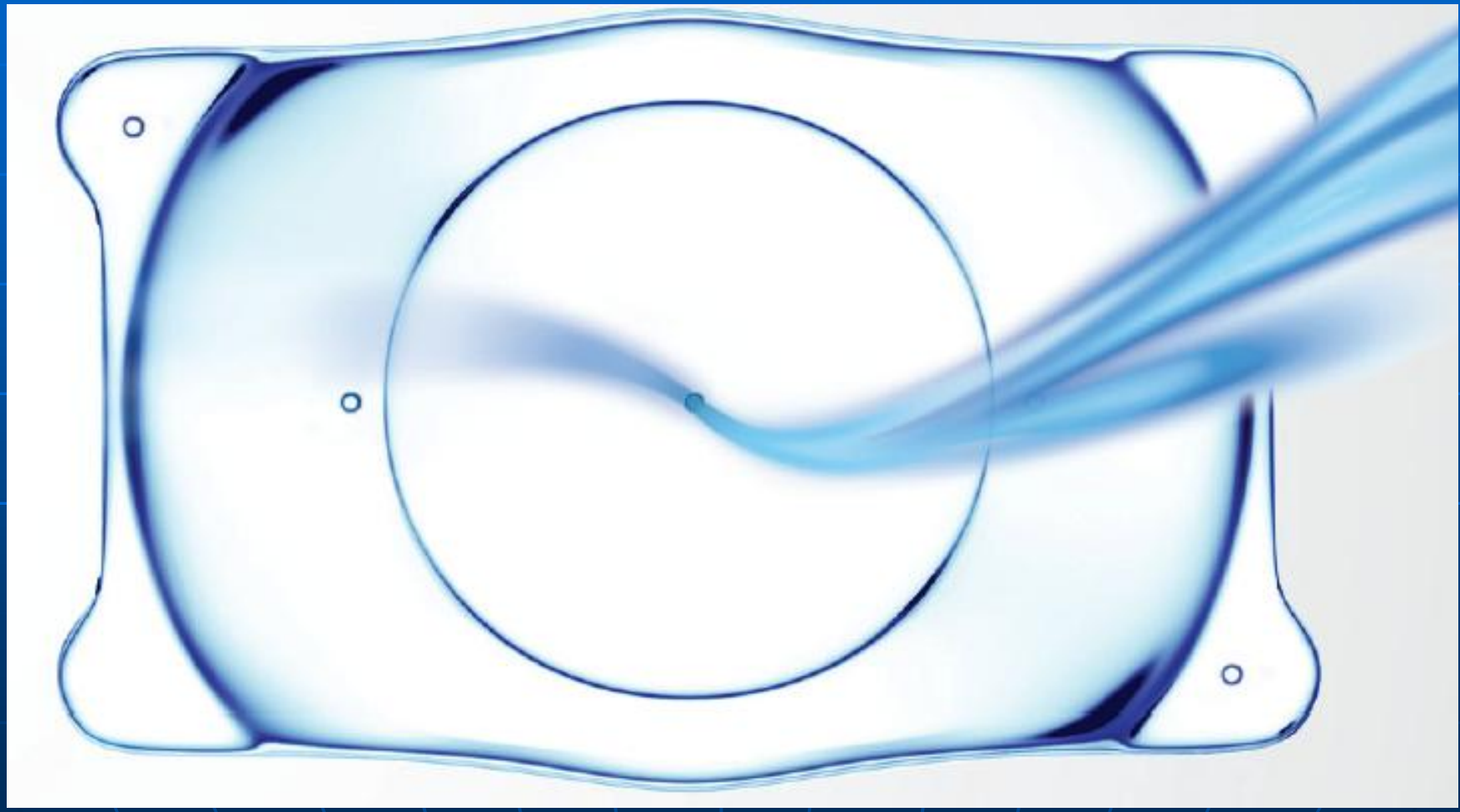




In conclusion

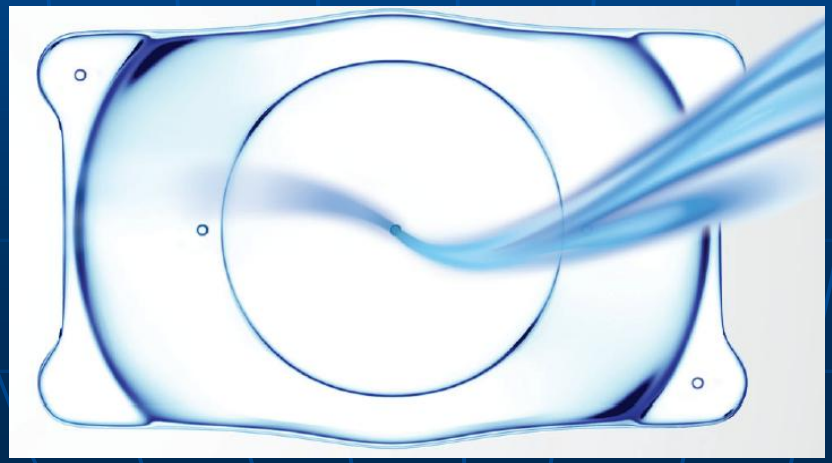
- The most probable cause of early post-operative IOP spike is viscoelastic retention, then non-patent /insufficient PIs, then oversized ICL.
- The decision tree provided above tackels the situation of combined High IOP + High Vault.
- You can have high ICL vault without any signs/symptoms, and this will be covered at a different presentation.
- You can also have high IOP with normal vault after few days (when visco is not the problem any more) and then a differential diganosis by gonioscopy should be made.

NEW ICL model V4C



The new Visian ICL® V4c with CentraFLOW

- Technology clearly simplifies the ICL surgical procedure
- Eliminates the need for PIs ;
- Restores a more natural aqueous flow
- Facilitates OVD removal



THANK
You