

JCRS Consultation Section: 25 Year Retrospective

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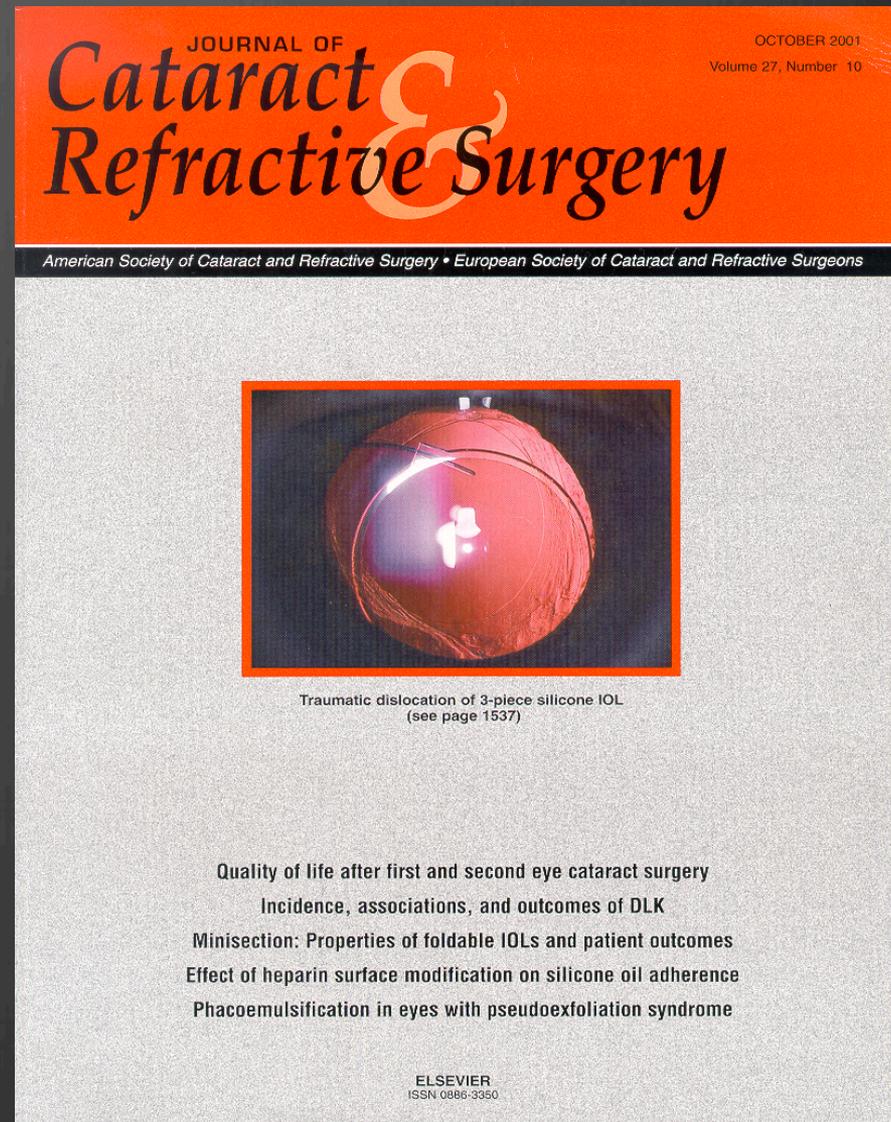
Samuel Masket MD - Disclosures

- ⊗ Accutome – Grant Support
- ⊗ Alcon – Consultant, Lecture Fees
- ⊗ Haag-Streit – Consultant, Royalties
- ⊗ MST – Lecture Fees
- ⊗ Ocular Therapeutix – Consultant, Shareholder
- ⊗ PowerVision – Consultant
- ⊗ WaveTec Vision Systems – Consultant, Lecture Fees
- ⊗ US Patent Anti-Dysphotopic IOL

JCRS – Consultation Section

Expert opinions are solicited for difficult case conditions

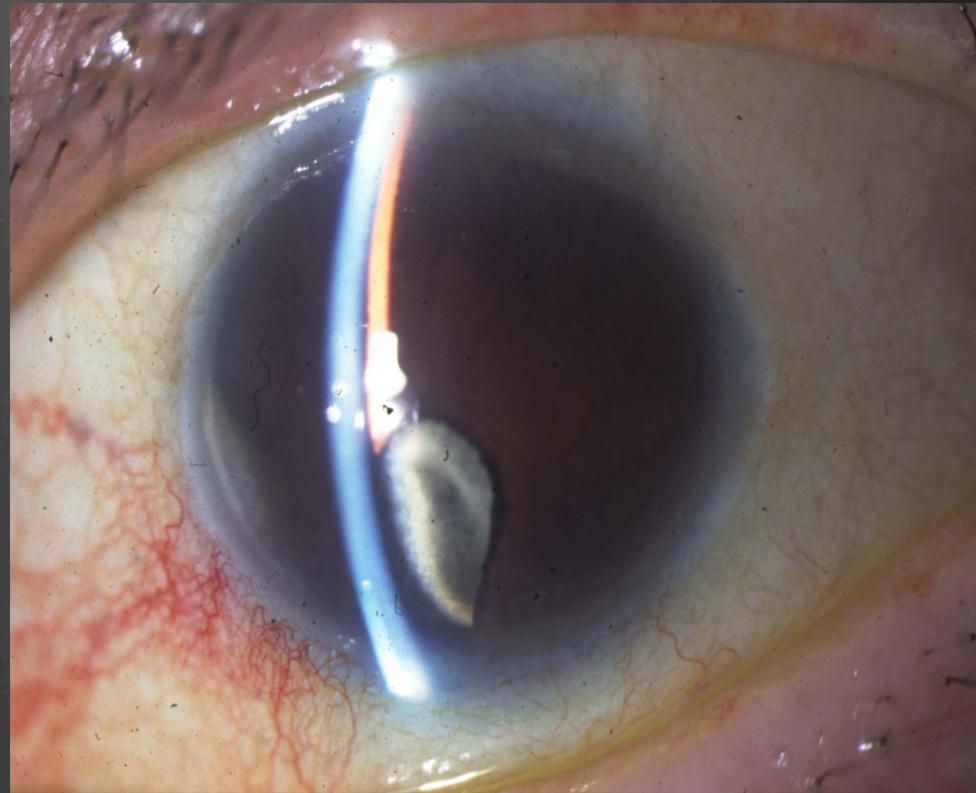
Today we will consider clinical situations from earlier and current issues and compare management then to now based on evolution of technique and technology



Condition 1 April 2003

Microcornea Coloboma Cataract Syndrome

- 74 y/o Female
- RE NLP after multiple procedures 10 years earlier
- Functionally blind



Condition 1- continued



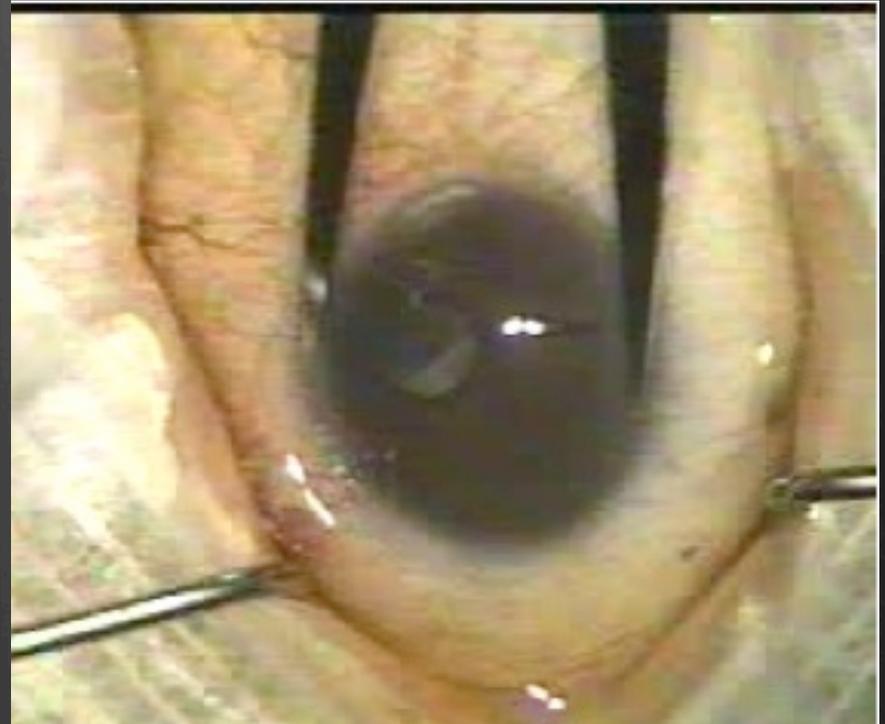
LE

- Mature cataract
- No view; known history coloboma effecting posterior pole
- B- scan U/S: Retina attached

Condition 1- Continued

Clinical Findings LE

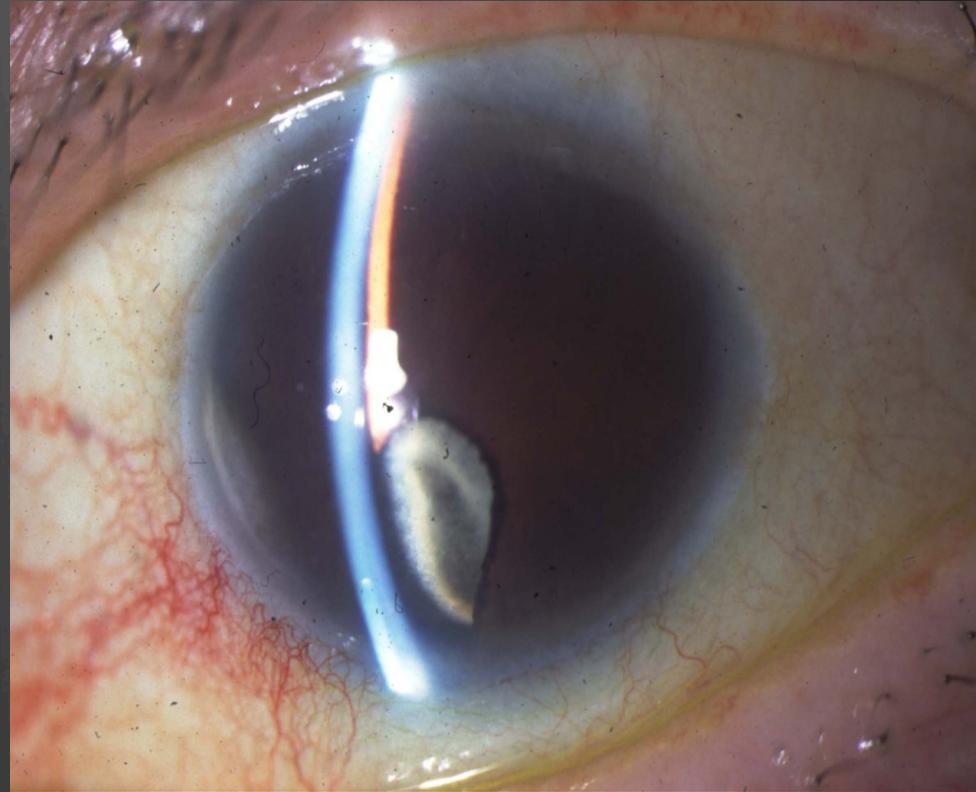
- ⊗ VA LP below
- ⊗ IOP 21 mmHg
- ⊗ Very shallow AC
- ⊗ Corneal Diameter 7.5 mm by 8.5 mm
- ⊗ AL 24.6 mm
- ⊗ Ave K's 48.5 D

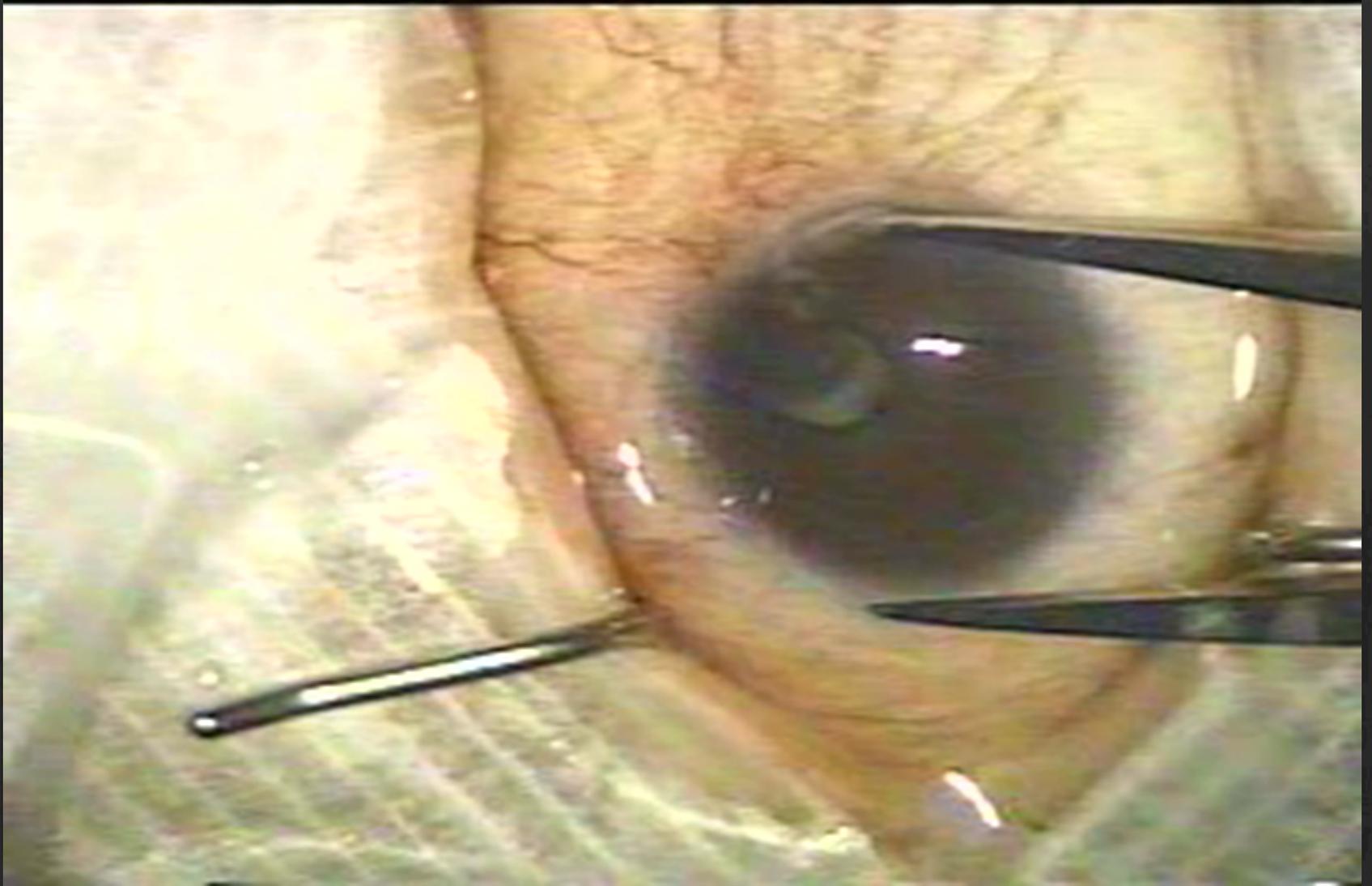


Condition 1- continued

Expert Opinions

- Phaco/PCIOL
- ECCE /PCIOL
- ECCE/Trab/PCIOL
- ICCE no IOL





Condition 1- Outcome

Three months postoperative

- ⊗ VA sc 20/400
- ⊗ VA cc 20/200 with +2.00 – 2.25 x 070
- ⊗ Functions as a sighted individual
- ⊗ IOP 18 mm Hg
- ⊗ Extensive inferior coloboma including macula and optic nerve

Condition 1 - February 2014

Microcornea Coloboma Cataract Syndrome

- 46 y/o male
- Subluxated mature cataract with fibrotic anterior capsule
- Nystagmus
- > 50 PD ET
- Biometry – 18.5 D



Expert Opinions

- ⊗ ECCE with Artisan “Iris Claw” IOL
- ⊗ Nd:YAG laser zonulysis to promote lens luxation
- ⊗ ICCE – leave aphakic
- ⊗ ICCE with sutureless scleral fixated IOL (“glued IOL”)

Dr. Masket 2.2 mm

OZI

0

3

C.D.E.
0.00

Irr

110

Asp

30

Rise

0

Vac

400

Ampl

90

0

T On

20

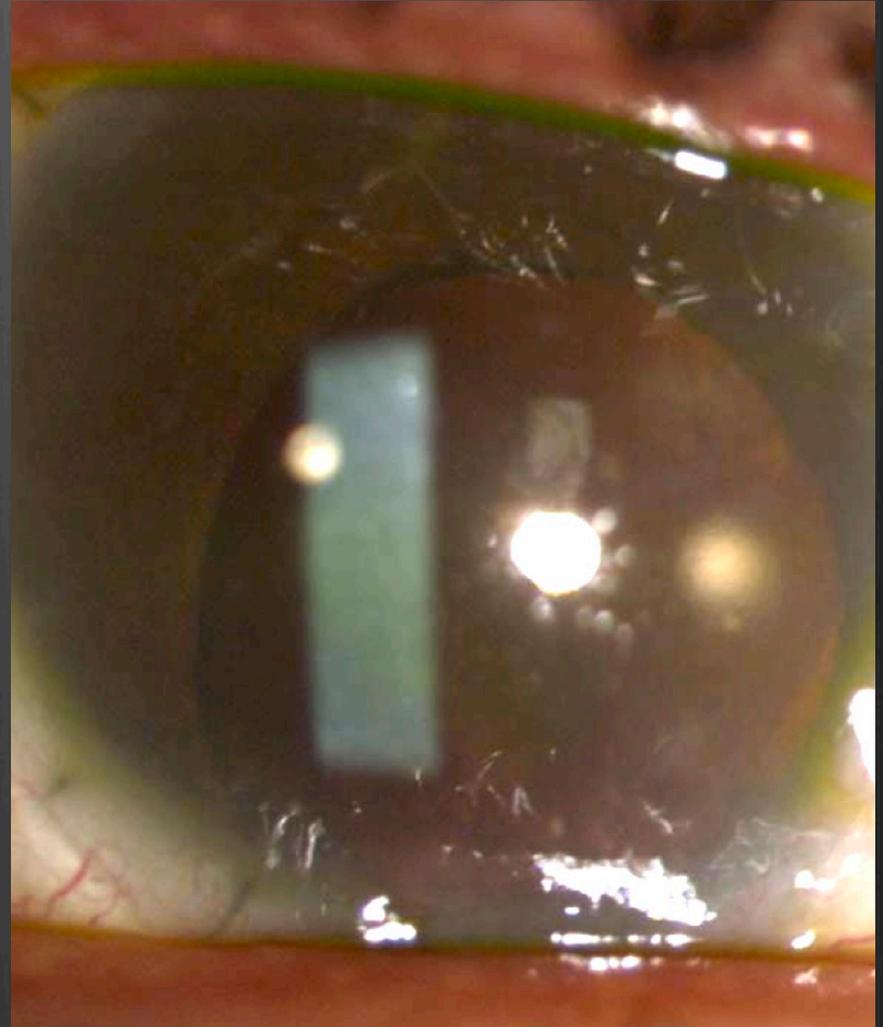
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ALCON

Outcome

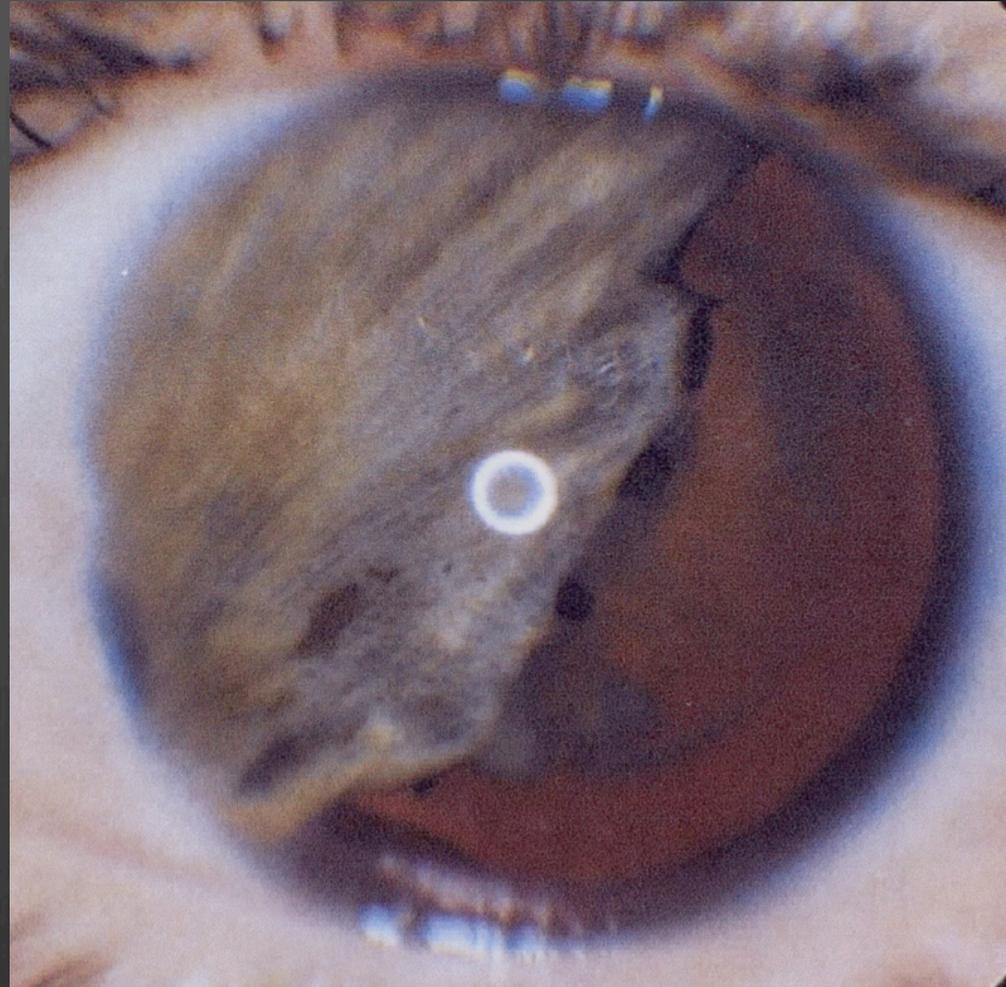
- ⊗ 2 Mos Post-Op
- ⊗ BCVA 20/100 +2
- ⊗ BCNVA 20/50
- ⊗ IOL Centered/Stable
- ⊗ Nystagmus Improved
- ⊗ Surgery LE pending



Condition 2 - October 1997

Iris Defect

- ⊗ 39 y/o woman injured at 7 years old
- ⊗ BCVA FC 3 feet
- ⊗ Increasing glare
- ⊗ 180 degree iridodialysis
- ⊗ Dense NS cataract
- ⊗ Posterior pole normal
- ⊗ Strongly motivated to retain iris



Expert Opinions

- ⊗ Phaco with Iridoplasty/Iridodialysis Repair
- ⊗ Phaco alone
- ⊗ Phaco with Custom Contact Lens
- ⊗ One mention of artificial iris devices

- ⊗ Patient Opted Against Surgery

**No Artificial Iris Devices are US
FDA Approved**

**Humanoptics Custom Iris is
Limited to Investigational Use
Only**

**No Other Devices are Available
in the US**

Condition 2 – Feb 2007

Iris Defect

JOURNAL OF CATARACT & REFRACTIVE SURGERY



Red reflex demonstrating iridozonular dialysis (*left*) and disinserted iris adhering to anterior capsule centrally (*right*) resulting from a bungee cord injury (see page 178)

DSEK under topical anesthesia
11-year follow-up of LASIK
Quality of vision with aspheric IOLs
Incidence of post-cataract endophthalmitis
Longitudinal study of IOL exchange

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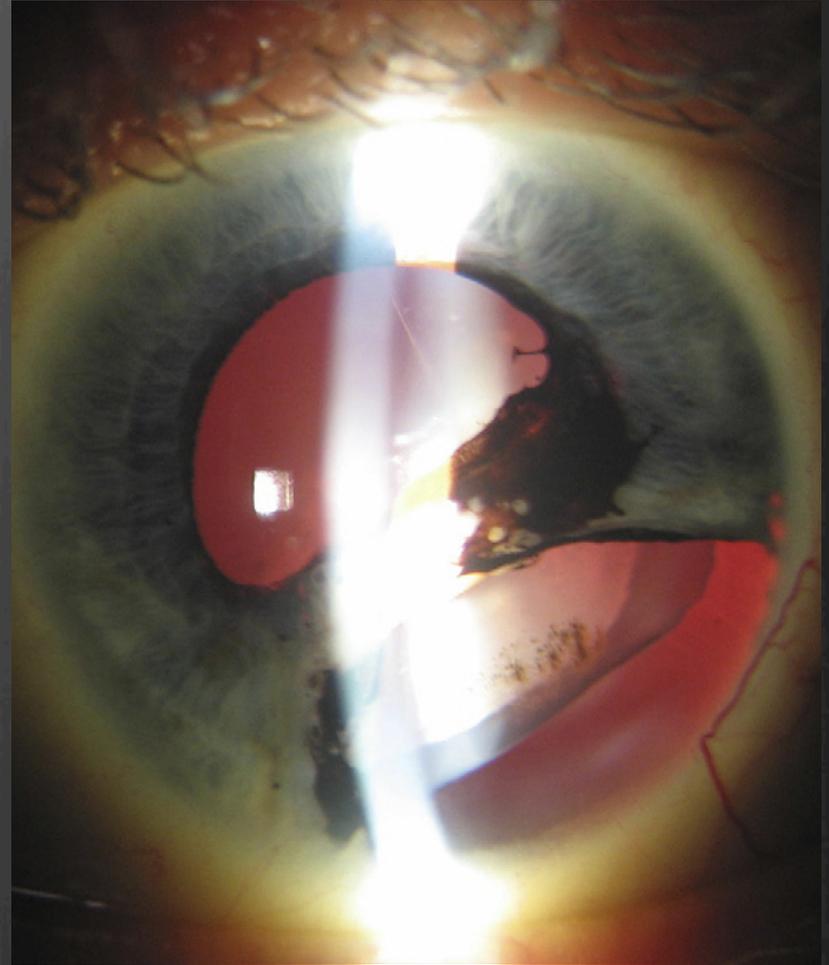


Condition 2 – Feb 2007

Iris Defect

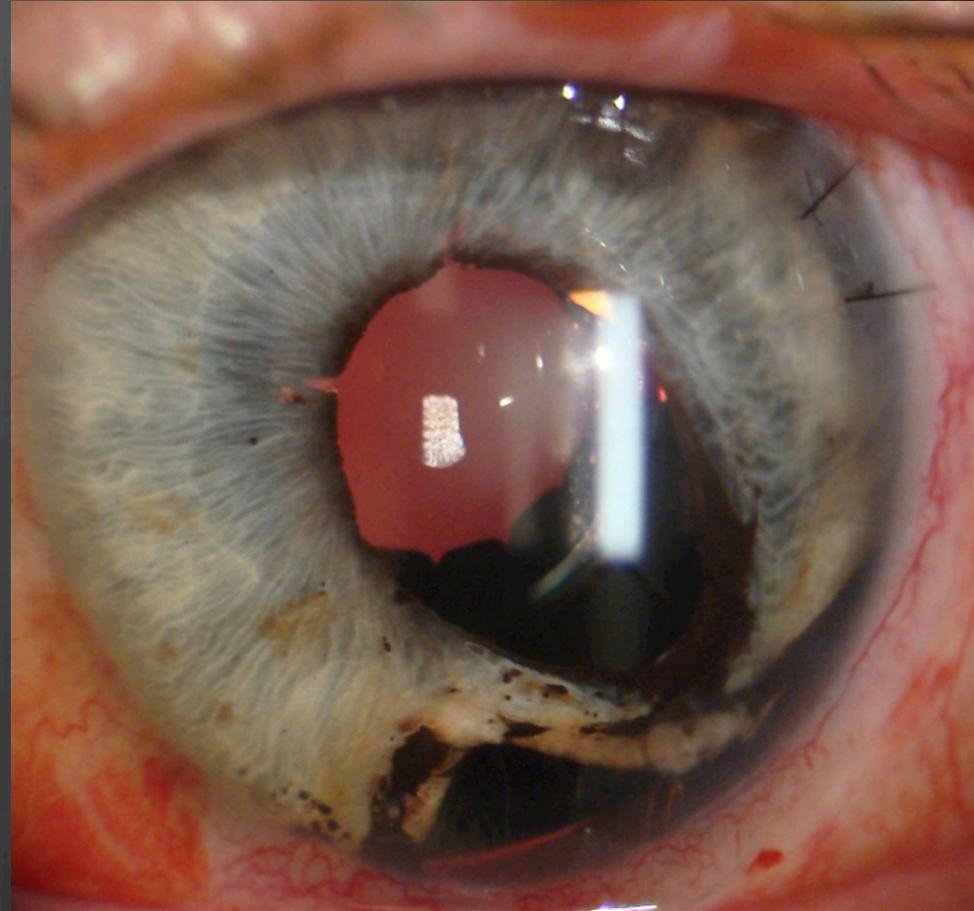
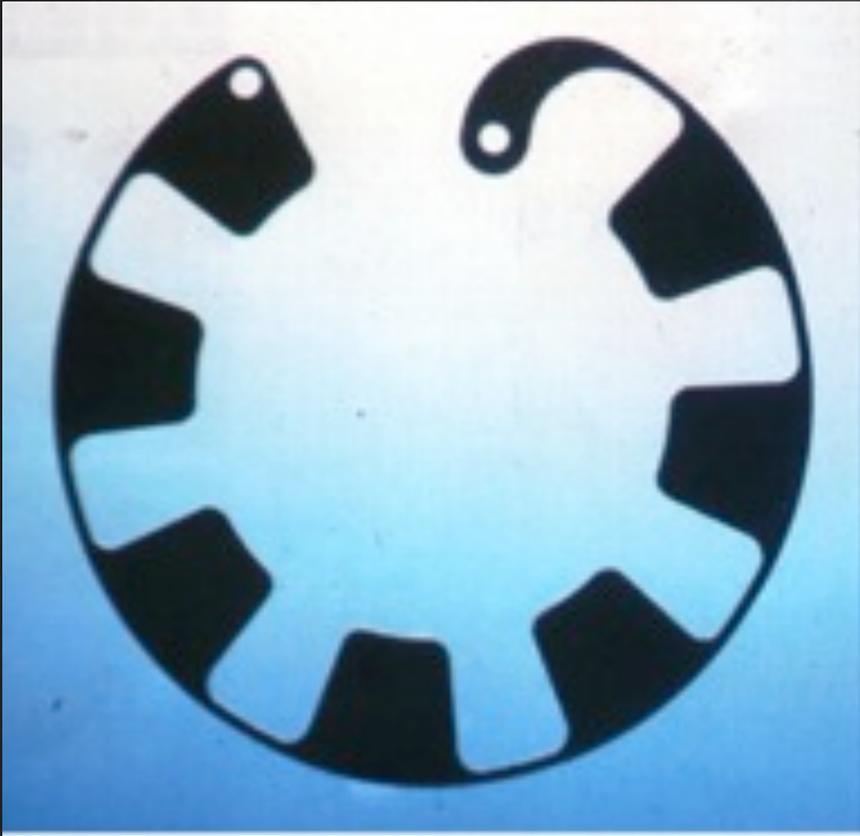
Expert Opinions

- Iris Prosthesis
 - Ophtec
 - Morcher
- Iridodialysis Repair



Condition 2 - continued

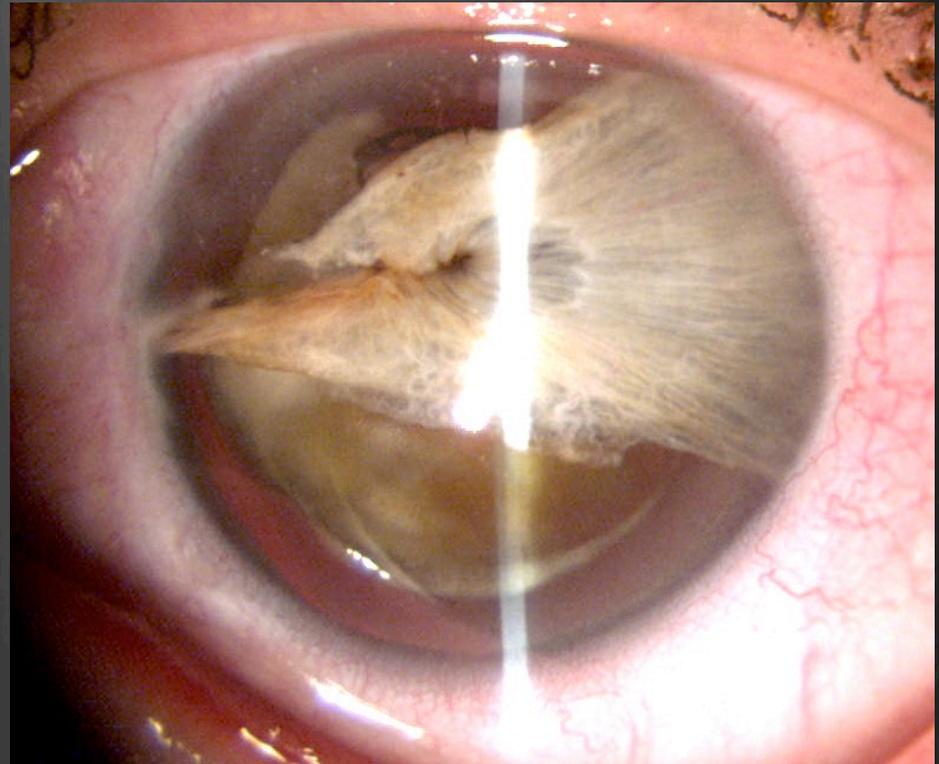
Morcher Rasch-Rosenthal CTR



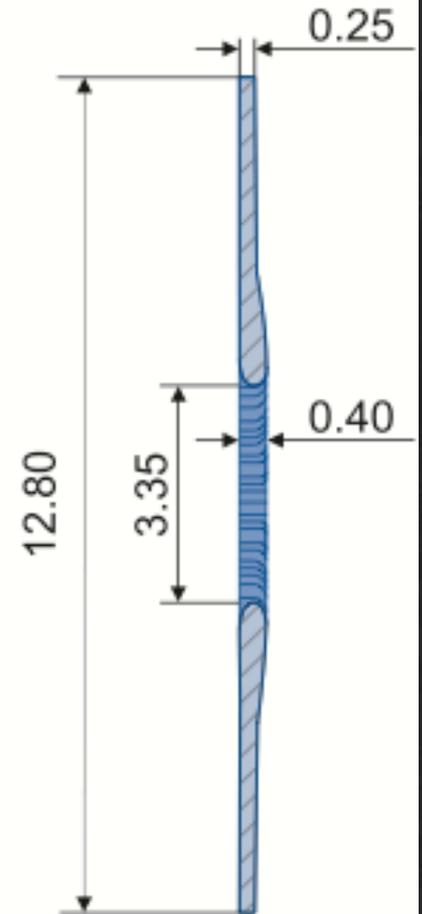
Condition 2 – 2012

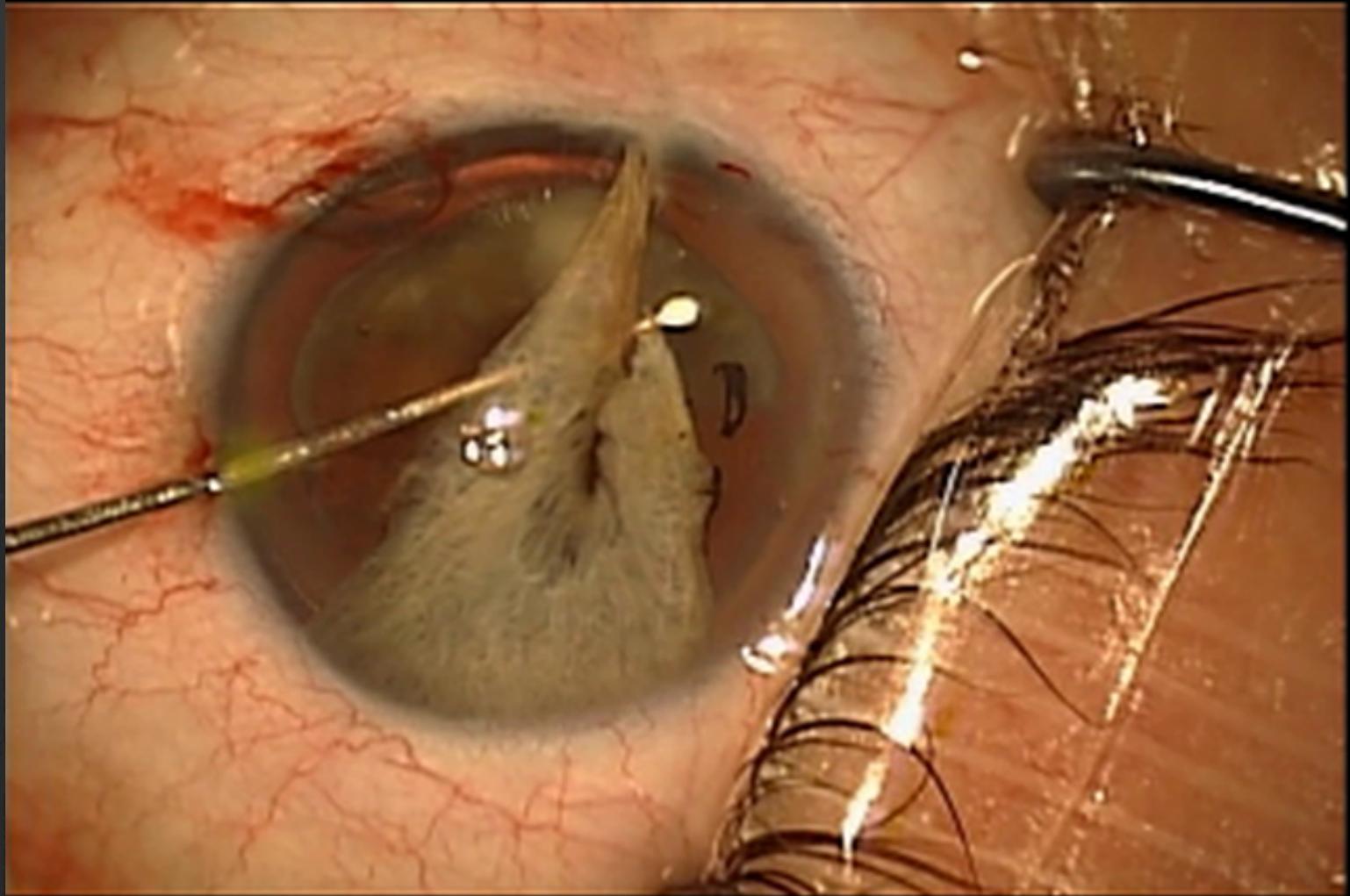
Iris Defect

- ⊗ 49 y/o woman sustained perforating corneal injury to LE in 1980
- ⊗ RE – normal all aspects
- ⊗ LE – CF VA

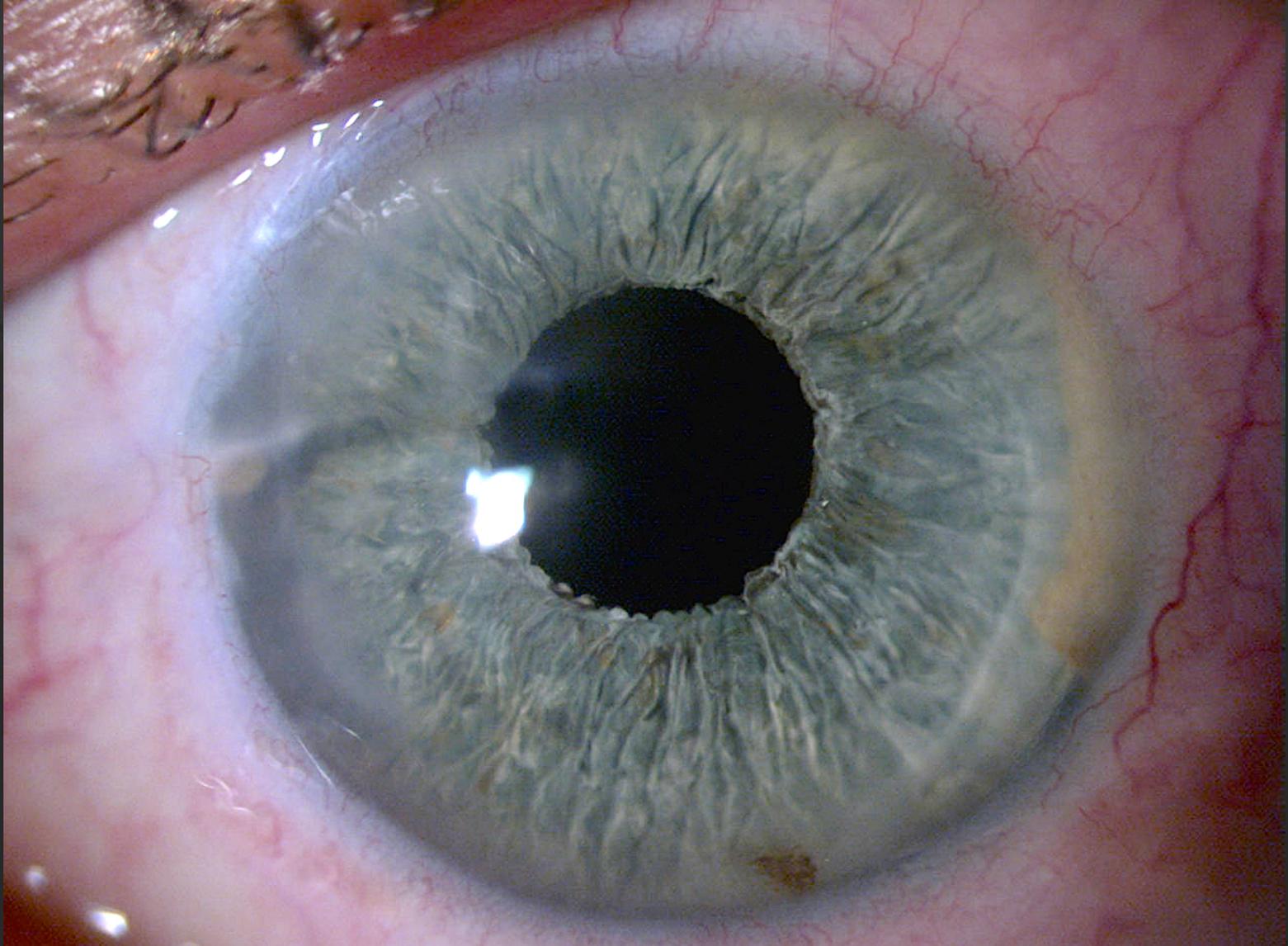


Humanoptics Silicone Custom Artificial Iris (US FDA – Investigational Use Only)



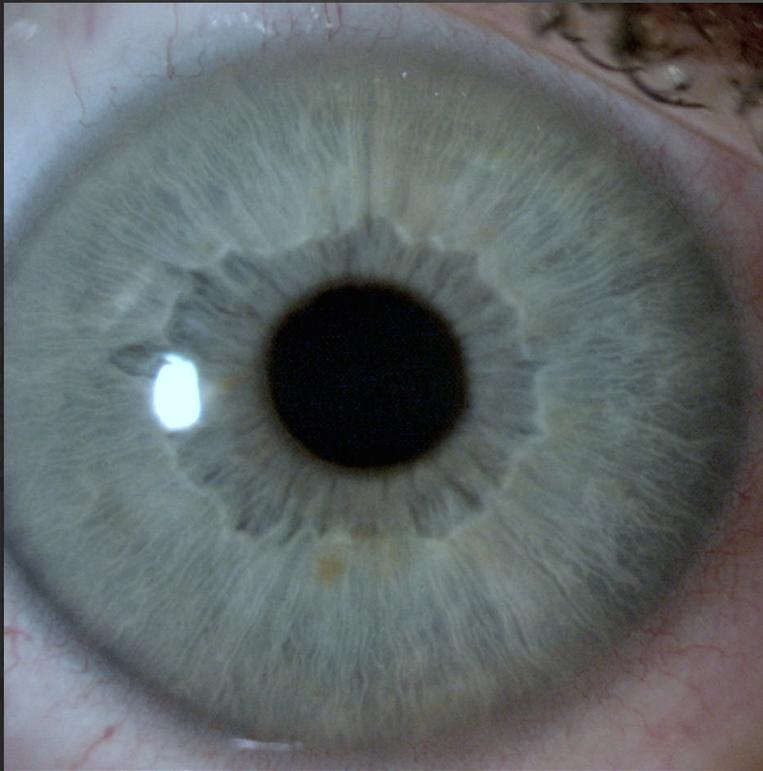


OUTCOME LE

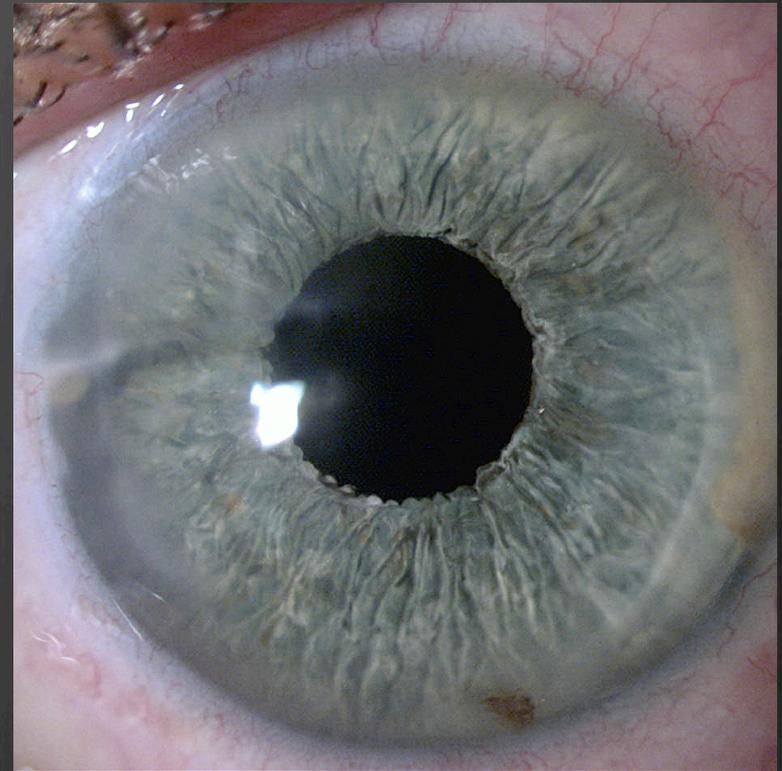


Post-Op

Uninvolved RE



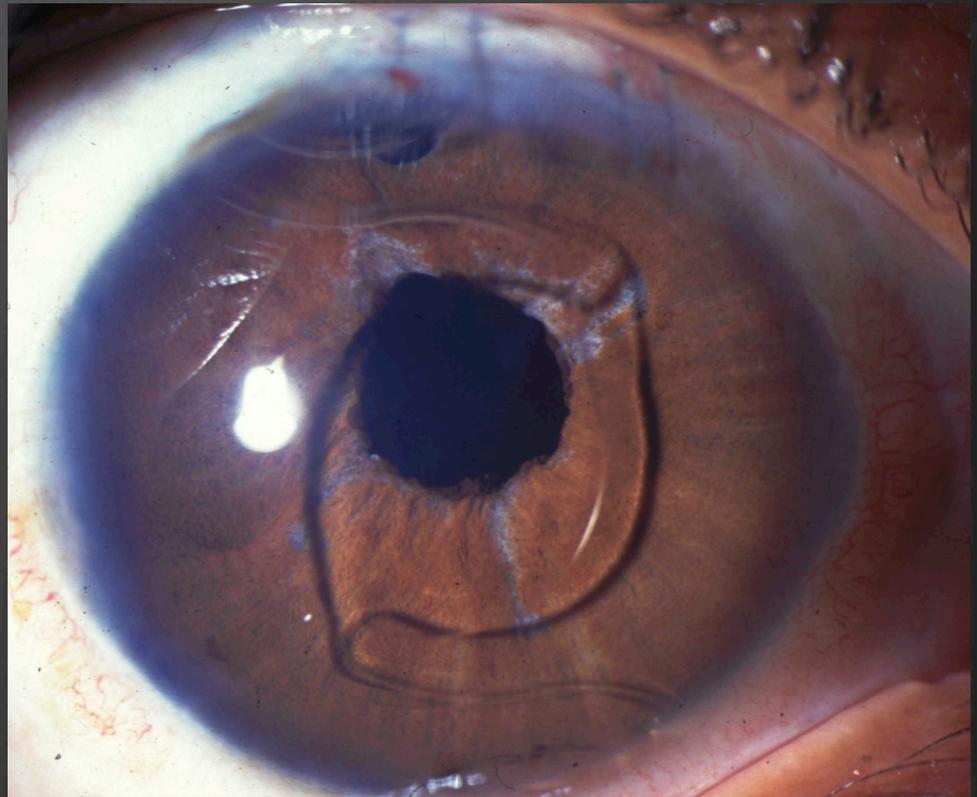
Implanted LE



Condition 3 – November 1997

Megalocornea/Ectopia Lentis

- ❁ 22 year old man had bilateral lens surgery age 10 with PCIOLs
- ❁ LE - RD with vitrectomy/removal of IOL; Final BCVA 20/200
- ❁ RE – RD with malpos IOL; IOL exchanged for 13.5 mm ACIOL
- ❁ Corneal Diameter 14.5 mm – AC IOL mobile



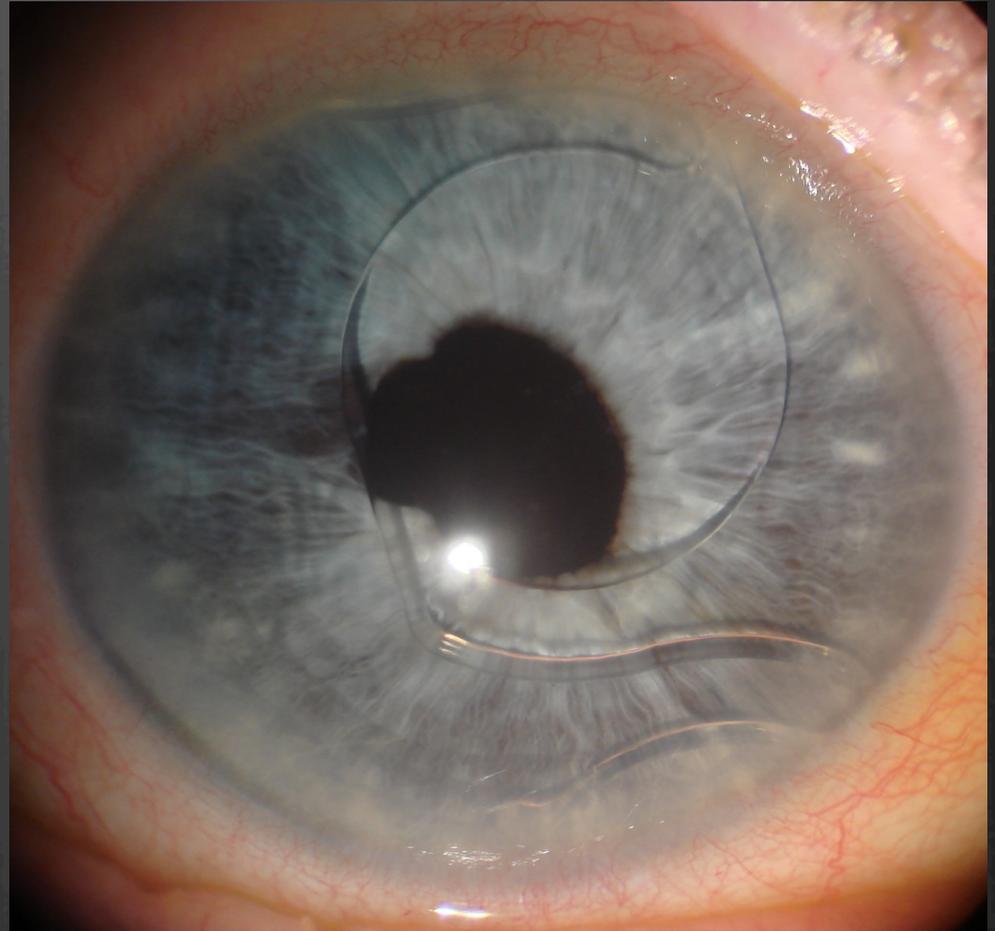
Condition 3

Expert Opinions

- ⊗ Remove IOL; leave aphakic
- ⊗ “Iris Claw” IOL – unavailable in US
- ⊗ No suggestions for sutured PC IOL
- ⊗ One suggested suture AC IOL to iris
- ⊗ AC IOL removed; patient tolerates aphakic CL

Condition 3 – October 2010

- 73 year old male
- Tamsulosin user - IFIS
- Cat surgery with PCR retained nucleus – PPV
- Iris sphincter tear
- AC IOL loop dislocated into superior PI



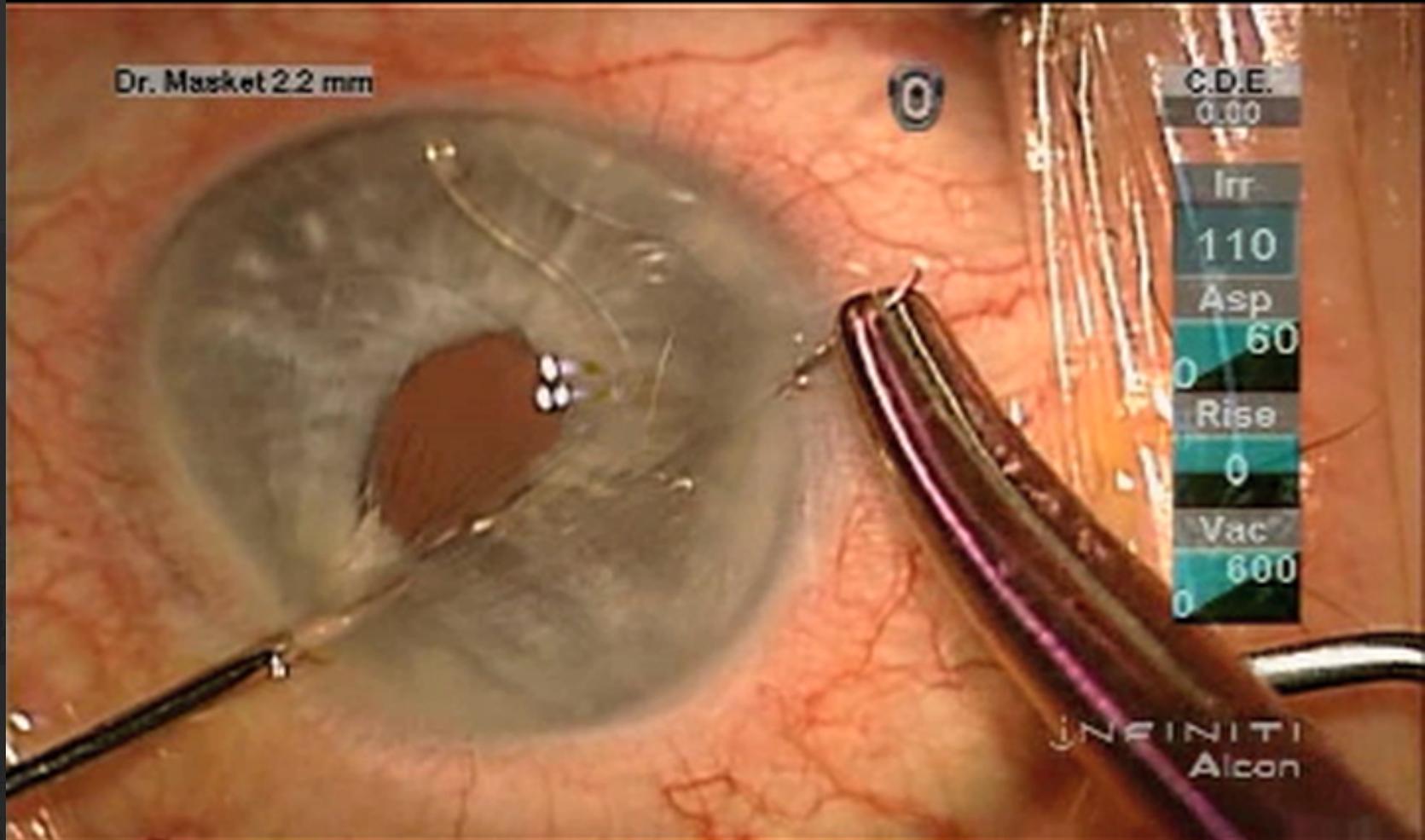
Expert Opinions

- ⊗ Exchange IOL for Iris Suture Fixated PCIOL
- ⊗ Exchange IOL for Scleral Suture Fixated IOL
- ⊗ Rotate IOL 90 Degrees
- ⊗ Exchange for “Iris Claw” IOL
- ⊗ Suture repair iris sphincter

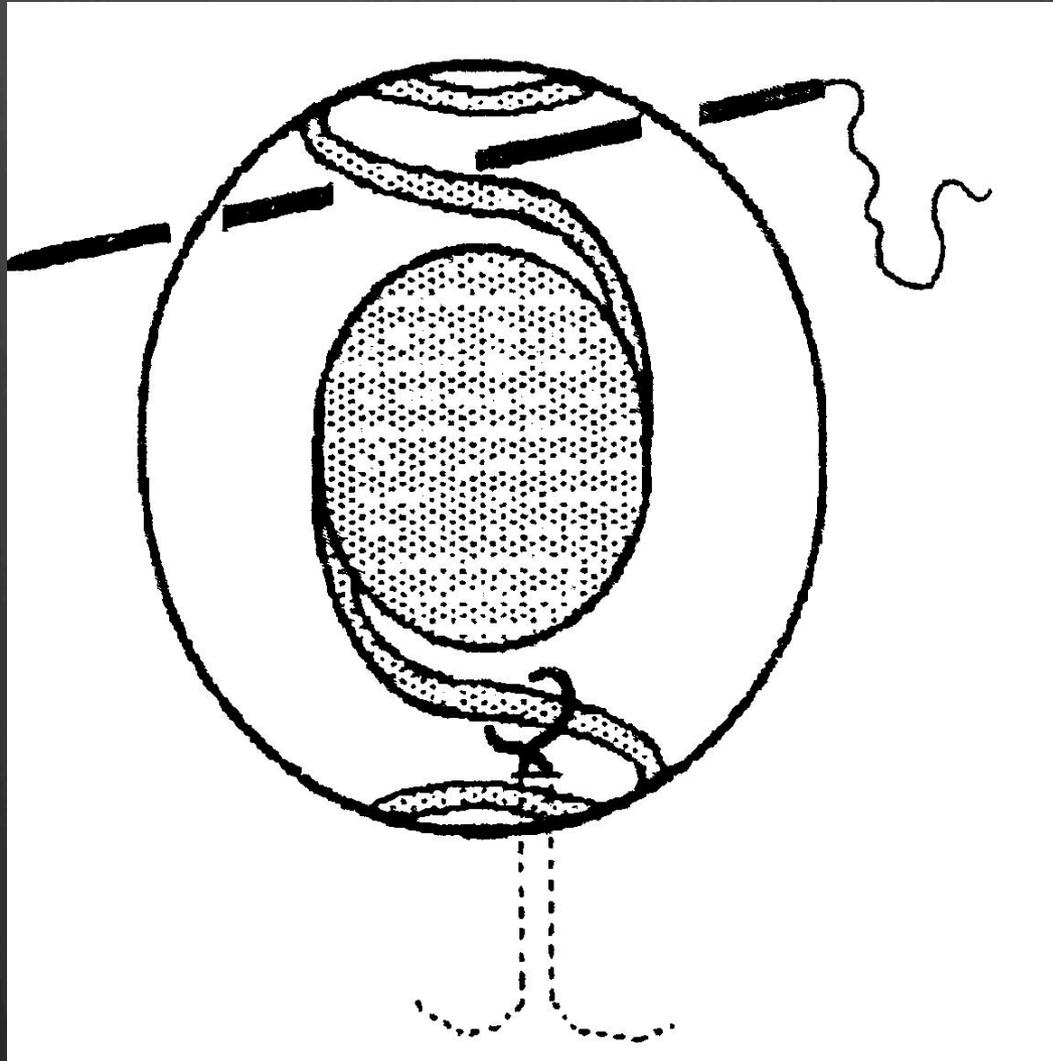
Dr. Masket 2.2 mm

C.D.E.
0.00
Irr
110
Asp
60
Rise
0
Vac
600

INFINITI
Alcon



Ehud Assia MD - JCRS 11/97



Condition 4 – Iris Chafe

August 2007

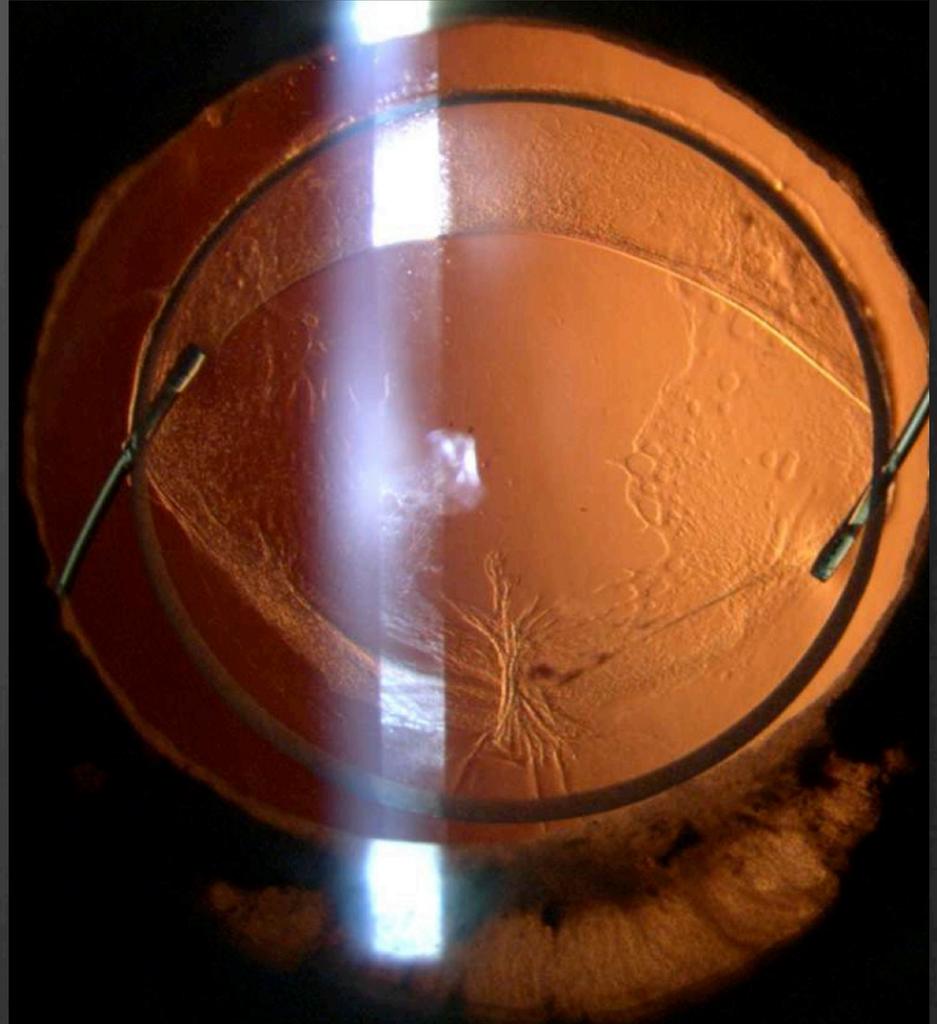
- ❁ 58 y/o man with SPA haptic induced UGH syndrome – now well recognized complex
- ❁ SPA placed partly in and partly out of capsule bag due to incomplete anterior capsulorrhexis
- ❁ IOL was removed and replaced with 3 piece silicone PCIOL with ISF



Condition 4 – October 2012

Iris Chafe with UGH Syndrome

- ❁ 69 y/o female with UGH syndrome RE – 5 years post surgery; high myope
- ❁ 3 piece low power acrylic IOL (+ 3 D) meniscus shape
- ❁ Temporal loop in sulcus with inferior optic edge anterior to capsule
- ❁ Obvious Iris TIDs



Expert Opinions

- ⊗ Re-open Capsule Bag – tuck loop into bag
- ⊗ Tuck inferior loop & optic into posterior capsule puncture
- ⊗ Exchange IOL for 3 piece silicone optic in sulcus
- ⊗ Remove IOL – leave aphakic

Reopening the Capsule Bag

- ④ 1 – Posterior Capsule Rent
- ④ 2 – Anterior Capsule Rent
- ④ 3 – Zonular Disinsertion
- ④ 4 – Success!

Dr. Masket 22 mm

C.D.E.
0.00

Irr

110

Asp

60

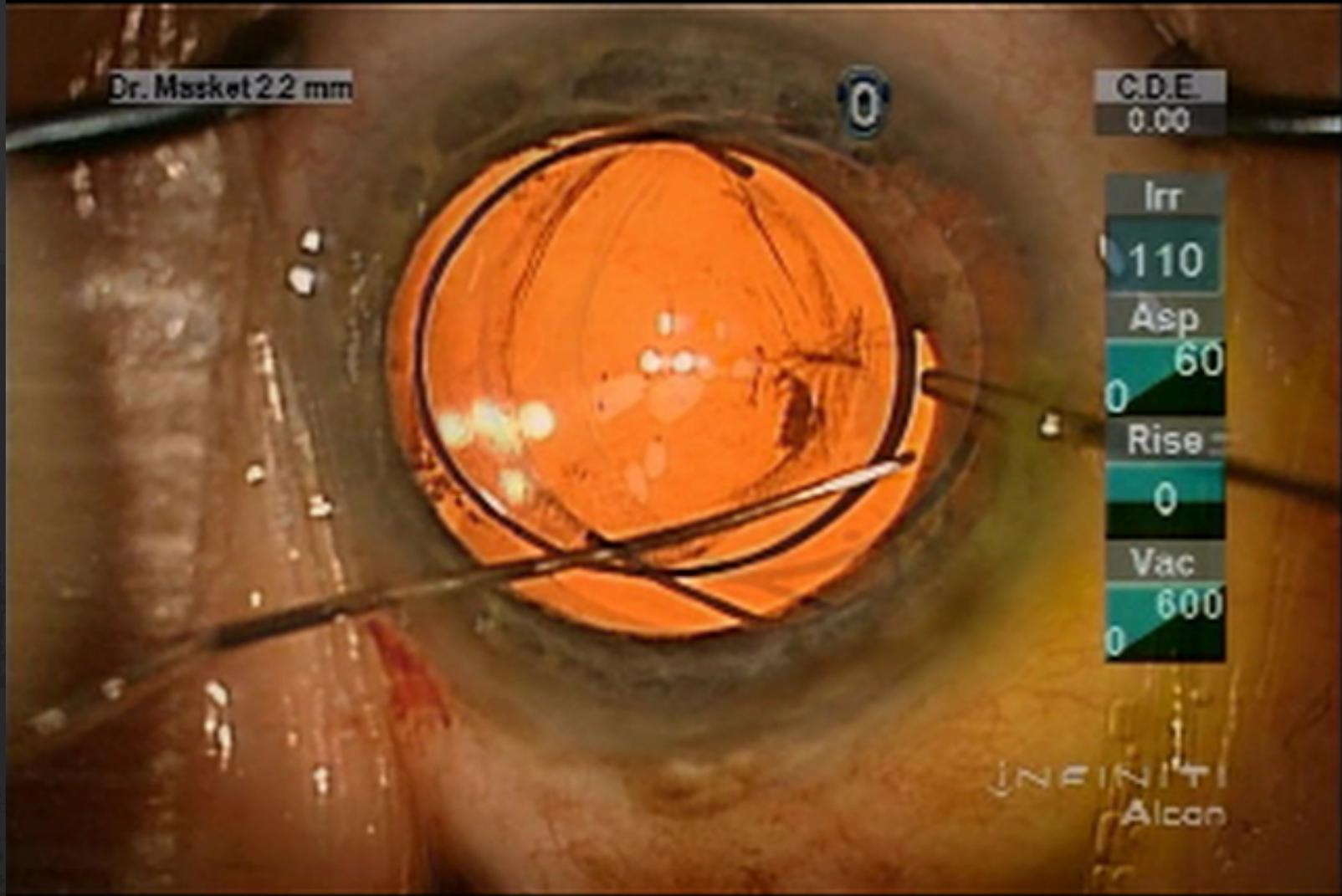
Rise

0

Vac

600

INFINITI
Alcon



Condition 5 – April 2005

Negative Dysphotopsia

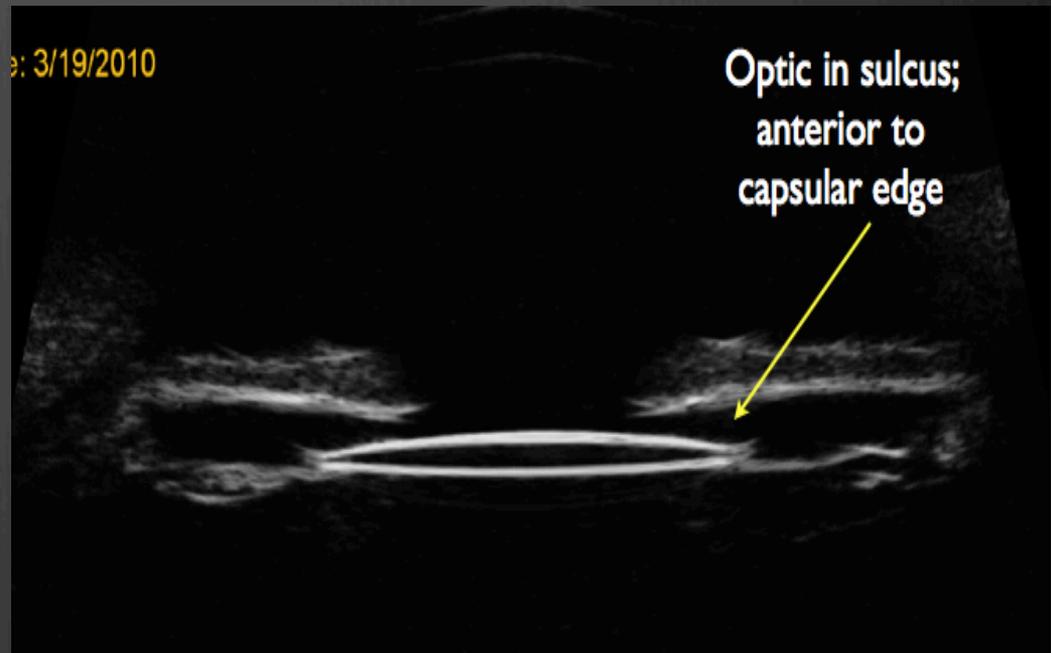
- ⊗ 57 y/o female 6 mos post Phaco/IOL through a superior corneal incision
- ⊗ 3 piece silicone IOL well centered in capsule bag
- ⊗ Persistent annoying temporal dark crescent shadow – classical ND
- ⊗ HVF and exam fully normal

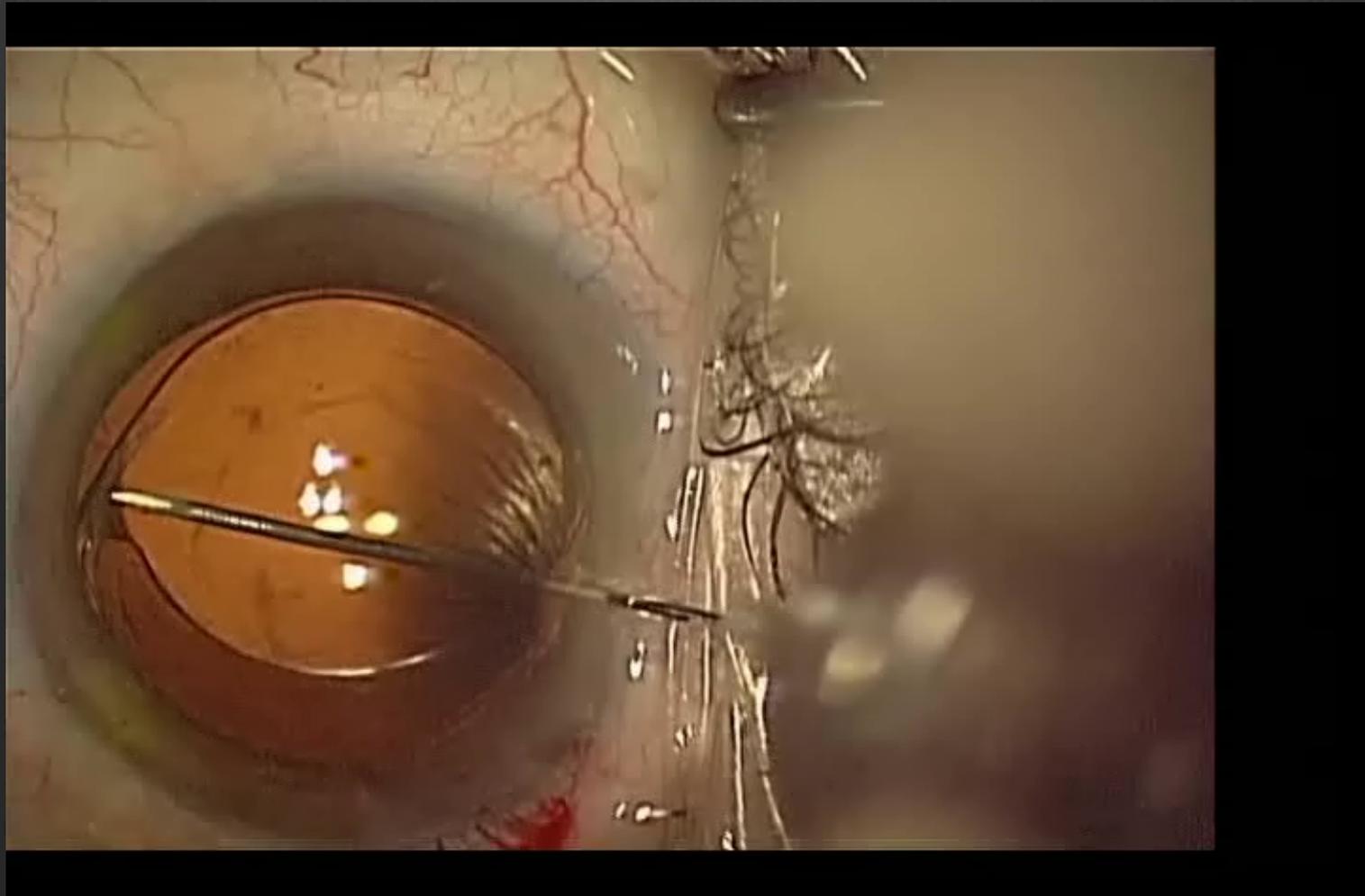


Condition 5 – April 2005

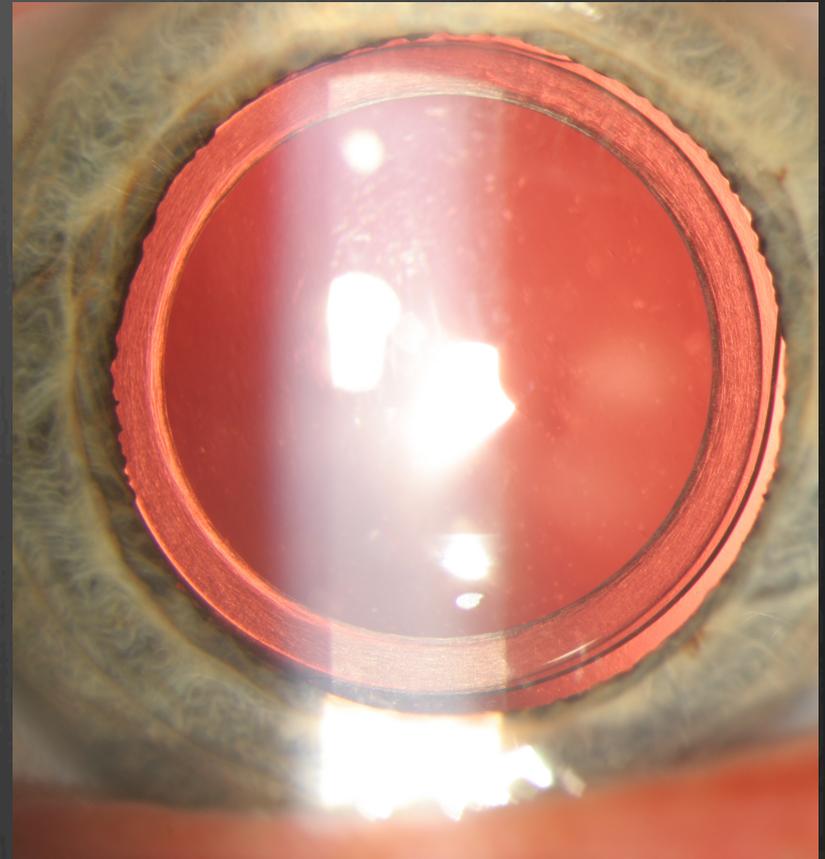
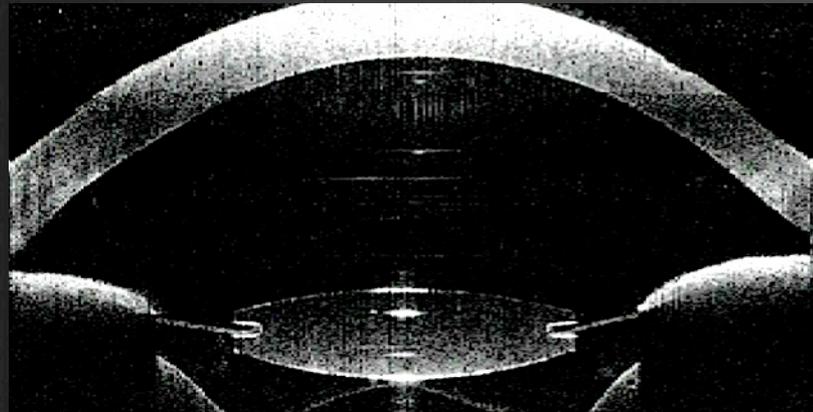
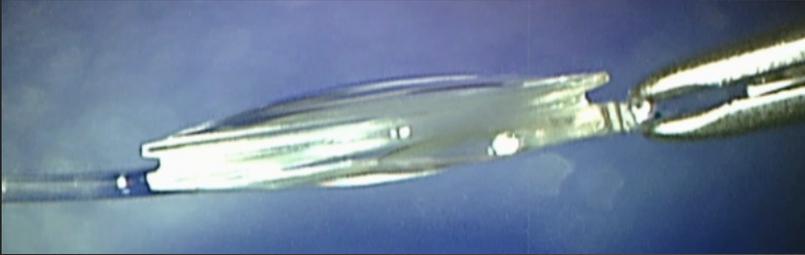
Expert Opinions

- ❶ Exchange IOL for round edge IOL in bag
- ❶ Later studies suggest that placing optic anterior to bag edge gives more consistent results
- ❶ “Reverse Optic Capture” seems most helpful





Anti ND IOL (Masket Prototype) - Morcher

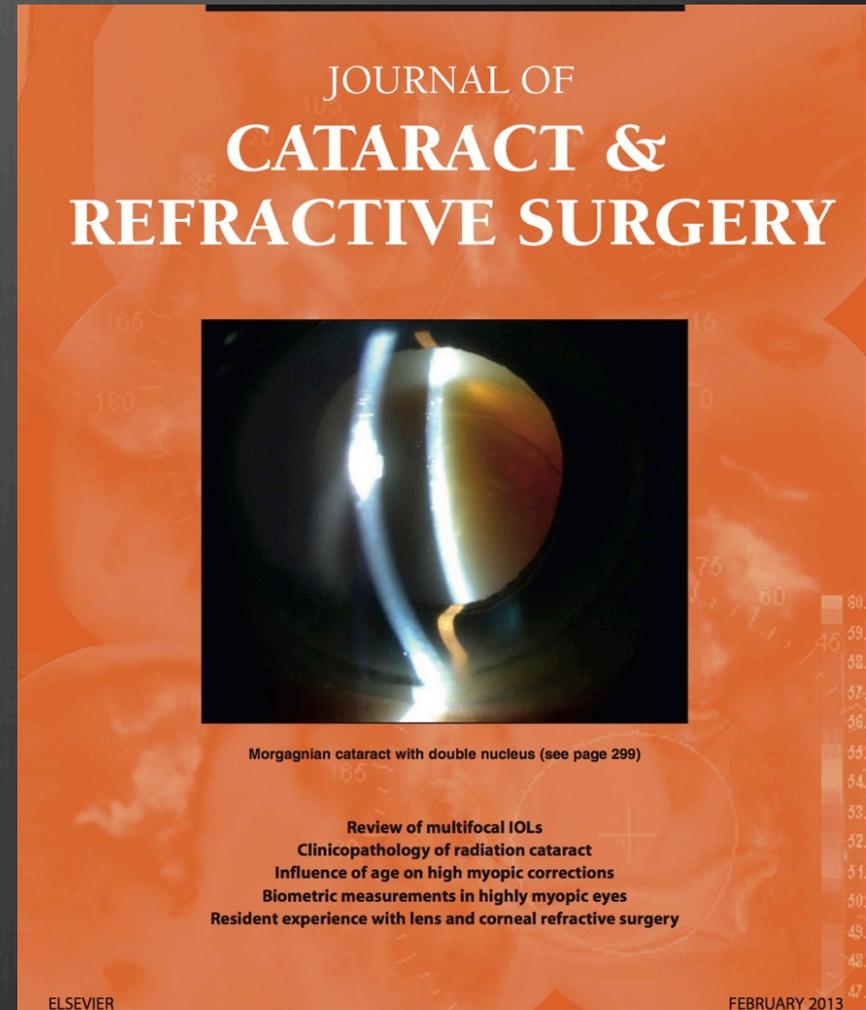


Photos Courtesy Prof. Burkhard Dick
and Dr. Tim Schultz

Condition 6 — February 2013

Morgagnian Cataract

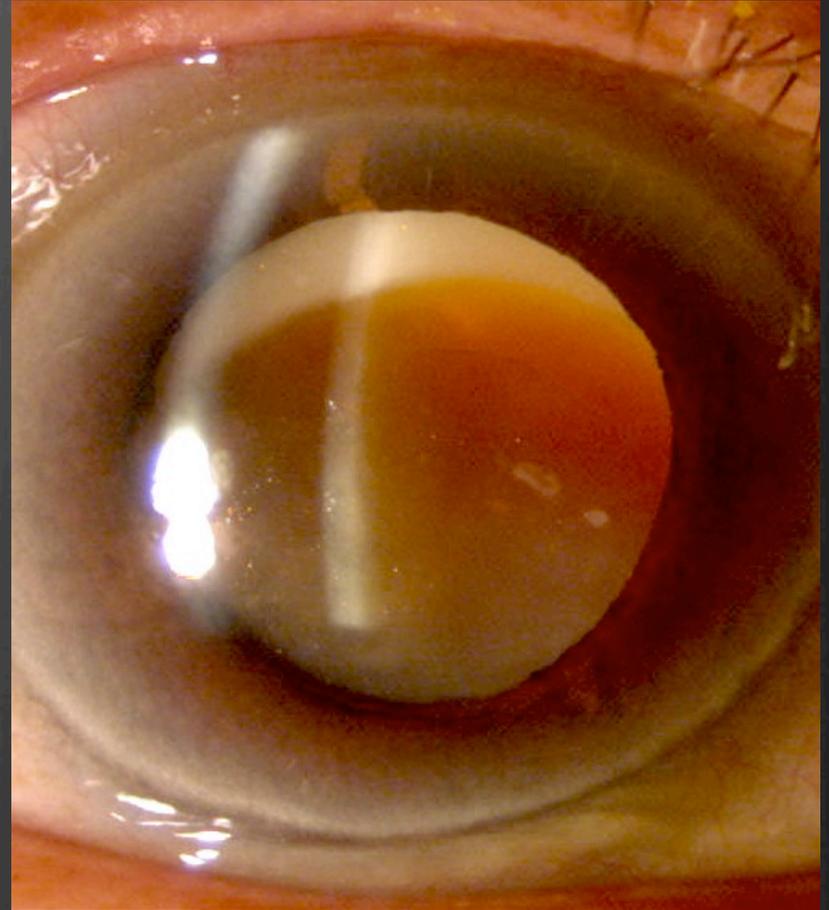
- ❁ **Hypermature with liquified cortex**
- ❁ **Sunken, generally small dense nucleus**
- ❁ **Calcium oxalate and orthophosphate “salt crystals”**
- ❁ **Prone to capsule rupture and phaco-anaphylaxis**

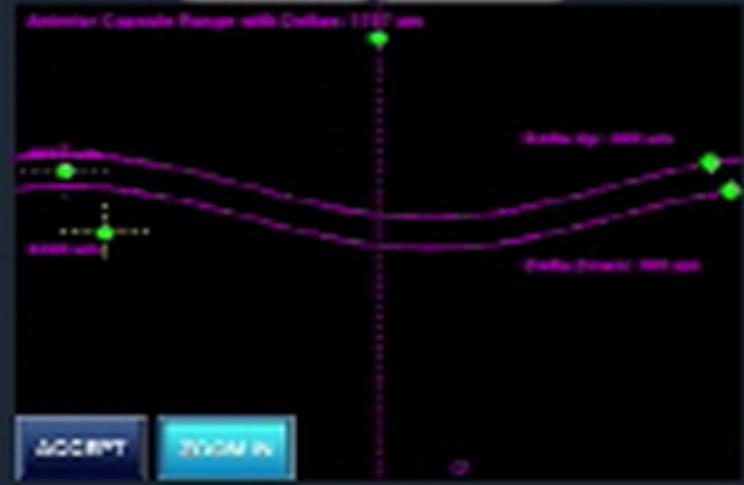
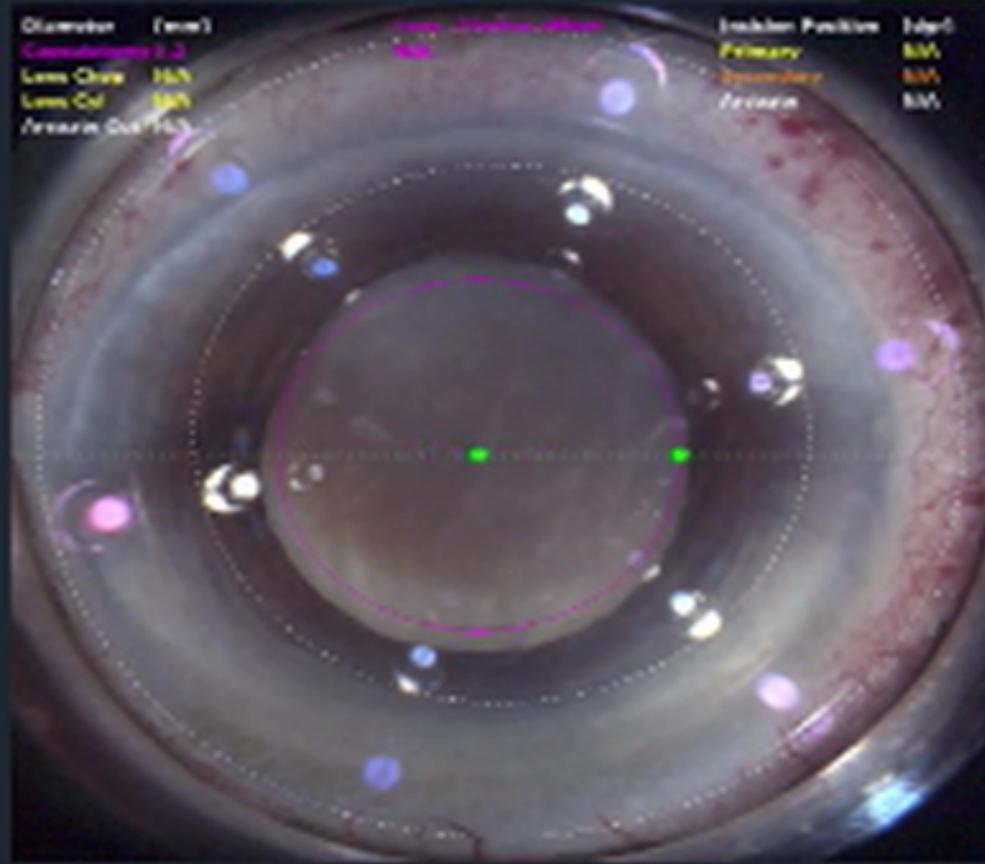


Case # 6 – Feb 2013 – Morgagnian Cataract

Expert Opinions

- Phaco
- ECCE
- MSICS
- ? Femto
Capsulotomy

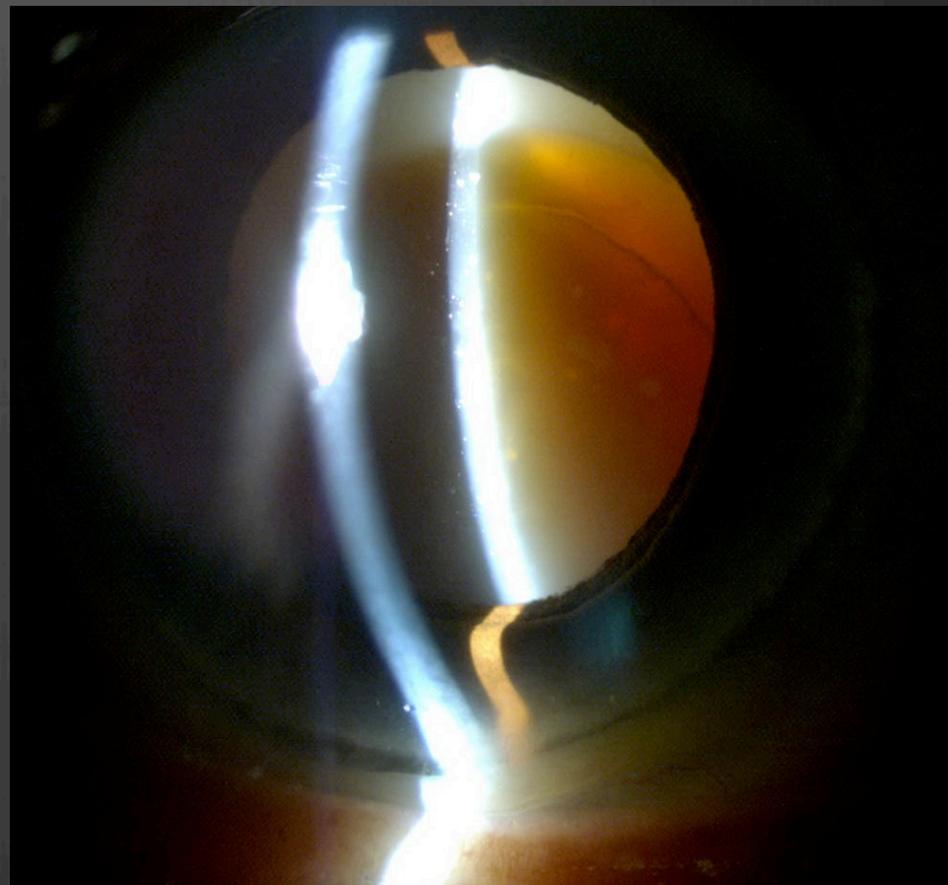




ACCEPT ZOOM IN

Outcome

- ⦿ UCVA 20/50
- ⦿ BCVA 20/40
- ⦿ Moderate Dry
ARMD



Cataract Surgical Problem

Edited by Samuel Masket, MD

An 85-year-old active and healthy Asian woman presents with marked reduction in vision in the right eye over the past 6 months. According to her history, she has had no injuries or previous surgery in the right eye; she had successful cataract surgery in the left eye 20 years earlier.

Examination shows the following: corrected distance visual acuity, hand movements at 3 feet in the right eye and 20/25 (spectacle corrected) in the left eye; intraocular pressure (IOP), 17 mm Hg and 16 mm Hg, respectively; and pachymetry, 532 μm and 540 μm , respectively.

As can be seen in the clinical photograph (Figure 1), a Morgagnian cataract is present in the right eye. There is accurate 2-point light discrimination and a seemingly full visual field. B-scan ultrasonography of the right eye is unremarkable. The anterior chamber is fully formed and quiet, and the corneal endothelium appears normal for the patient's age.

What is your approach in this situation?

■ The classic Morgagnian cataract has a liquefied center and a smaller, but very hard nucleus. The primary challenge is the capsulorhexis and the emulsification of this mobile "ball bearing."

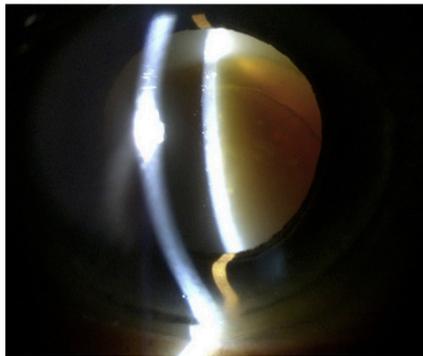


Figure 1. Slitlamp photograph of the right eye shows a Morgagnian cataract with sinking "double nucleus," fluffy cortex above, and small flecks of white material. The anterior chamber is fully formed and clinically quiet.

The traditional approach involves staining the anterior capsule with trypan blue followed by the injection of a highly retentive, cohesive ophthalmic viscosurgical device (OVD). A small central or paracentral puncture is made with a bent 27-gauge needle, at which time the typical smokestack escape of liquefied cortex may be observed. If this is prevented by the OVD, a 27-gauge cannula can be inserted in the bag and liquefied cortex can be aspirated and replaced with a dispersive OVD, which elevates and stabilizes the nucleus. Although I usually prefer to make the capsulorhexis with a bent 22-gauge needle, a forceps is easier when there is no underlying cortical support. It is best to err on a smaller capsulorhexis, which can be enlarged if necessary.

The hard nucleus is emulsified with torsional phacoemulsification and slow-motion parameters, stabilizing and separating the nucleus with a longer chopper with a tapered inner edge and a protective terminal bulb. Additional OVD can be injected behind and in front of the nucleus as needed. There is usually minimal cortex, although if present, it is compacted into the equator and should be carefully aspirated. The remainder of the case is routine unless weaker zonules require a capsular tension ring (CTR).

Although I do not yet have experience using a femto-second laser for capsulorhexis, it would seem like an excellent indication. If the unsupported capsulorhexis and emulsification of the hard, mobile nucleus are well managed, these rare but challenging cataracts can leave the surgeon with a great feeling of accomplishment.

Robert H. Osher, MD
Cincinnati, Ohio, USA

■ My safest approach for restoring vision to this patient with a Morgagnian cataract is sutureless extracapsular cataract surgery. Such cases will usually be very straightforward and quick with the small-incision cataract surgery (SICS) technique. In my hands, these cases are more prone to complications with phacoemulsification.

Eyes with hypermature cataract often have fragile capsular bags, weakened zonules, and high pressure in the capsular bag from liquefied cortex. The nucleus is usually very hard, smooth, and difficult to engage with a phacoemulsification tip.

Charles D Kelman Solved the Impossible
He Made a Genuine Difference

