




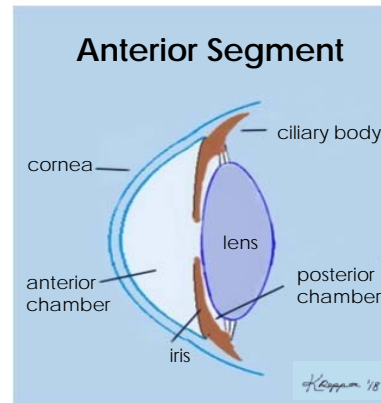
Revitalization of the Anterior Segment: Corneal Transplantation and Secondary Lens Repair

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- ▶ I developed the course material and information independently.
 - ▶ I have no relevant financial disclosures.
 - ▶ I will be discussing off label use of some medications and devices.

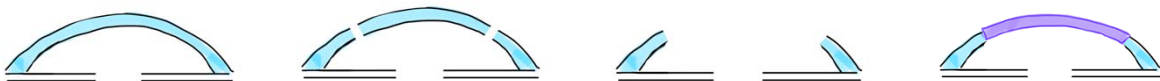
Structure of the Anterior Segment

- ▶ Cornea
- ▶ Iris
- ▶ Ciliary Body
- ▶ Lens
- ▶ Anterior Chamber
- ▶ Posterior Chamber

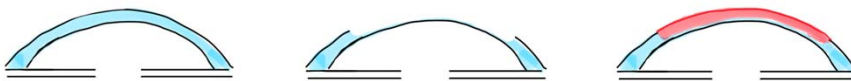


Corneal Transplantation

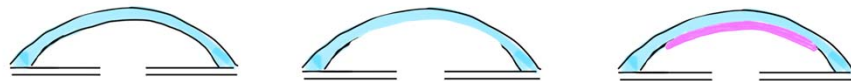
PKP



DALK



DSEK

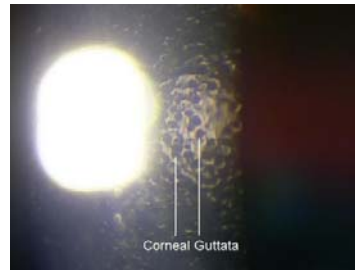


DMEK



Endothelial Dysfunction

- ▶ Signs and symptoms:
 - ▶ Corneal Edema +/- bullae
 - ▶ Guttata
 - ▶ Scar
 - ▶ Decreased vision (worse in AM)
 - ▶ Foreign body sensation/ intermittent pain
- ▶ Differential Diagnosis:
 - ▶ Fuch's Endothelial Dystrophy
 - ▶ Bullous Keratopathy
 - ▶ Other Endothelial loss/injury



Medical Management

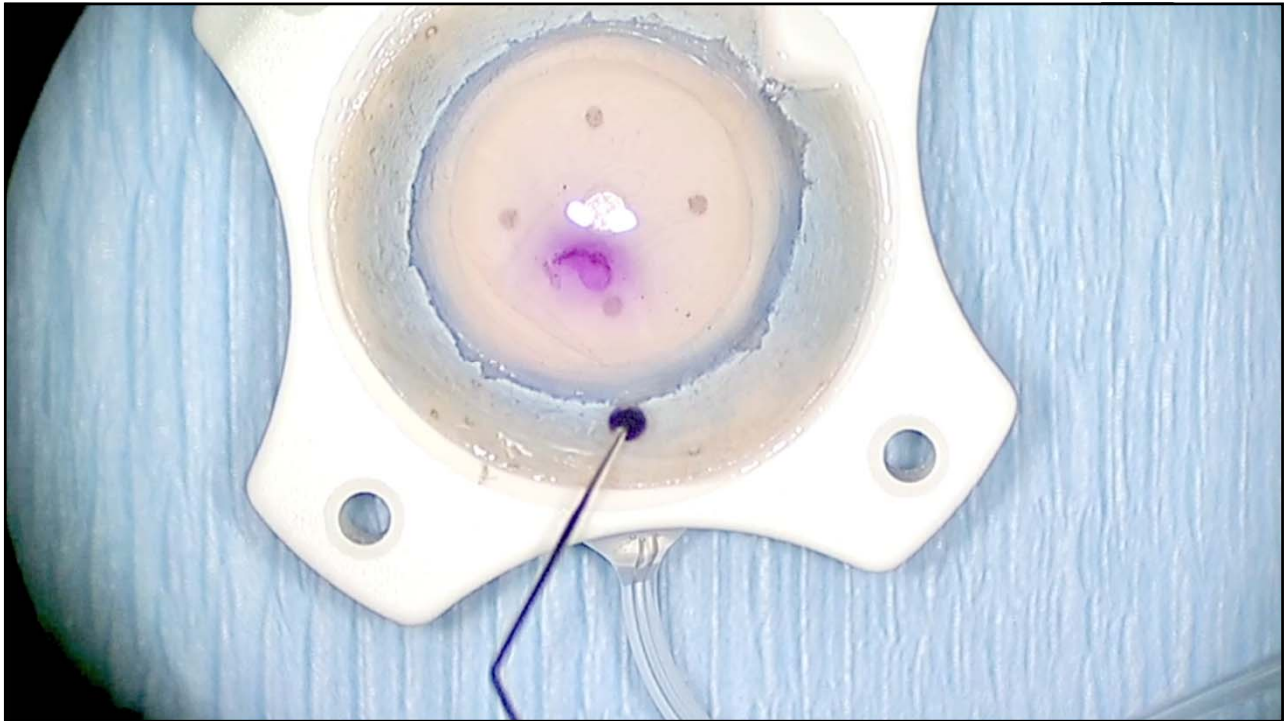
- ▶ Observation
- ▶ Hypertonic Saline
- ▶ Bandage Contact Lens
- ▶ Topical Steroid (if post op cause)

Indications for Surgery

- ▶ Persistent corneal edema
- ▶ Visual Obscuration (edema or guttae)
- ▶ Painful Bullae/recurrent erosion
- ▶ Concurrent Cataract Surgery

Pre-Op Management

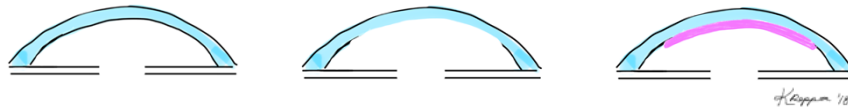
- ▶ Lamellar vs Full Thickness
 - ▶ Scar
 - ▶ History of prior surgery/ hardware
 - ▶ Visibility
- ▶ Type of endothelial transplant- DMEK vs DSEK
 - ▶ Video- DMEK tissue prep
 - ▶ Discussion of Post-op requirements
 - ▶ Optimize Cornea
 - ▶ Concurrent or Staged Procedure



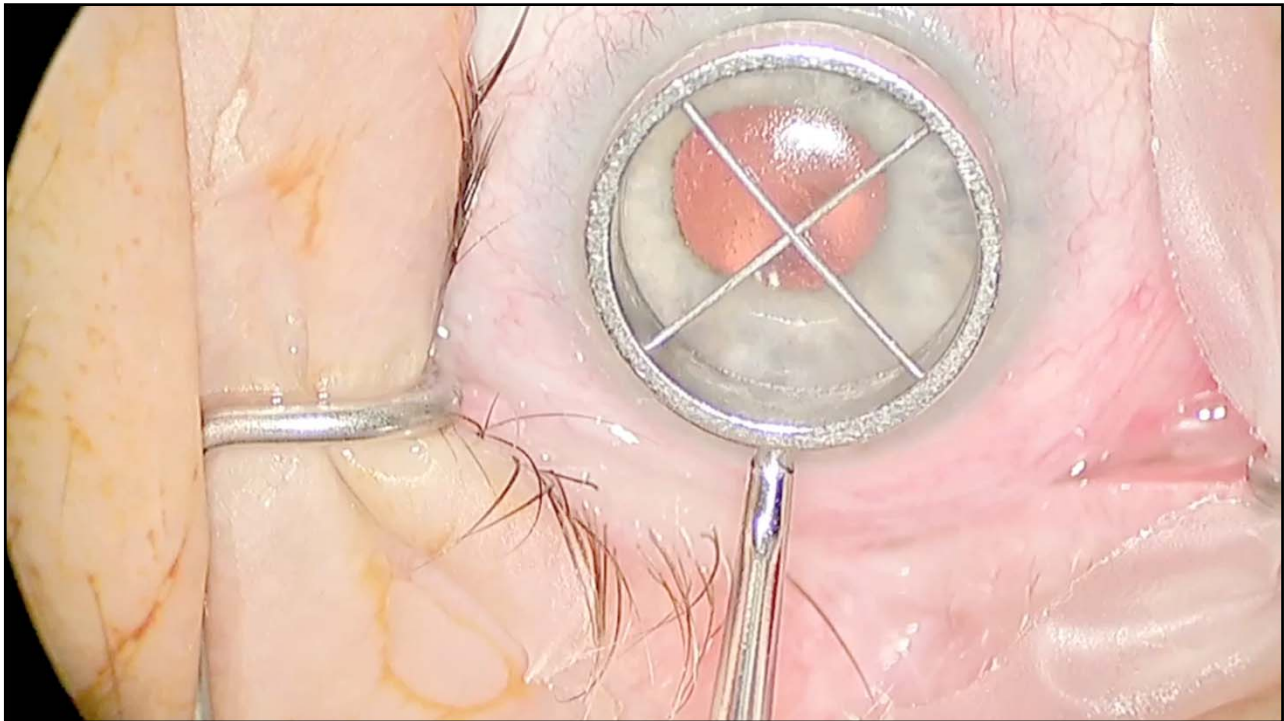
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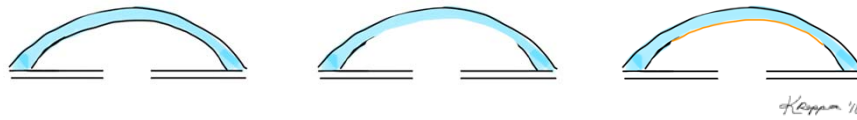
Surgical steps and techniques: DSEK



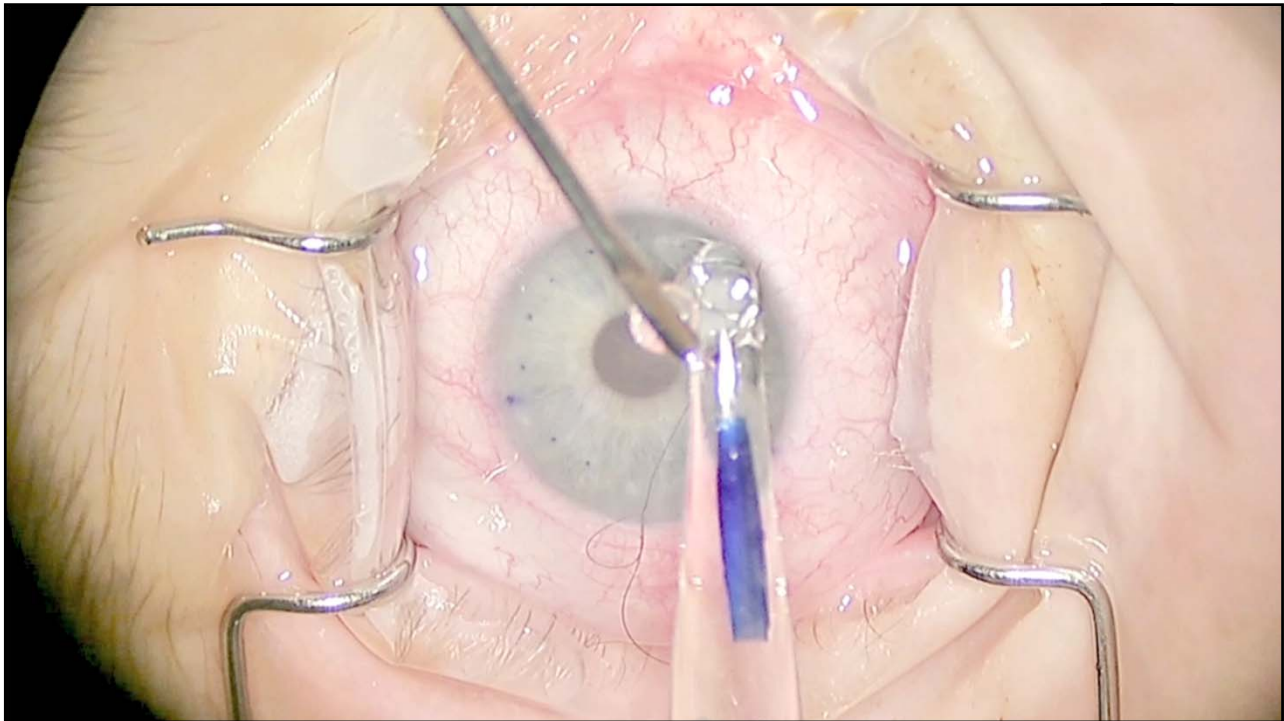
- ▶ Wound
- ▶ Descemetorrhexis
- ▶ Insertion
- ▶ Positioning
- ▶ Apposition
- ▶ Wound Closure



Surgical steps and techniques: DMEK



- ▶ Wound
- ▶ Descemetorrhexis
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Post-op Management

- ▶ Positioning
- ▶ Medications
- ▶ Re-bubble
- ▶ Refraction

Possible Surgical Complications

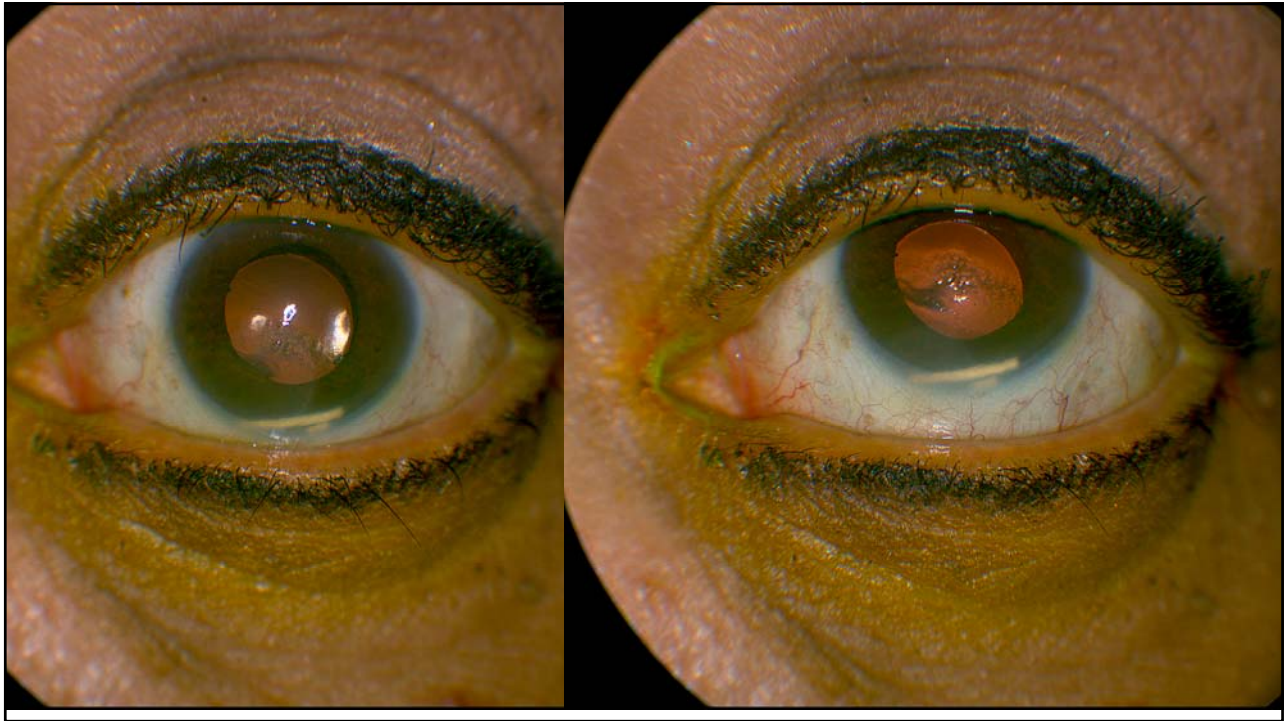
- ▶ Intra-Op
- ▶ Post-Op
 - ▶ Immediate
 - ▶ Long Term

Endothelial Dysfunction: On the horizon

- ▶ DWEK
 - ▶ Stripping without graft
 - ▶ Currently small studies
 - ▶ Only for Fuch's with centralized guttae
 - ▶ Longer healing time than DMEK
 - ▶ Not all patients clear
- ▶ Rho-Kinase Inhibitors
 - ▶ Activate endothelial cell migration
 - ▶ Decrease healing time
 - ▶ Not currently available in the US at proper concentration

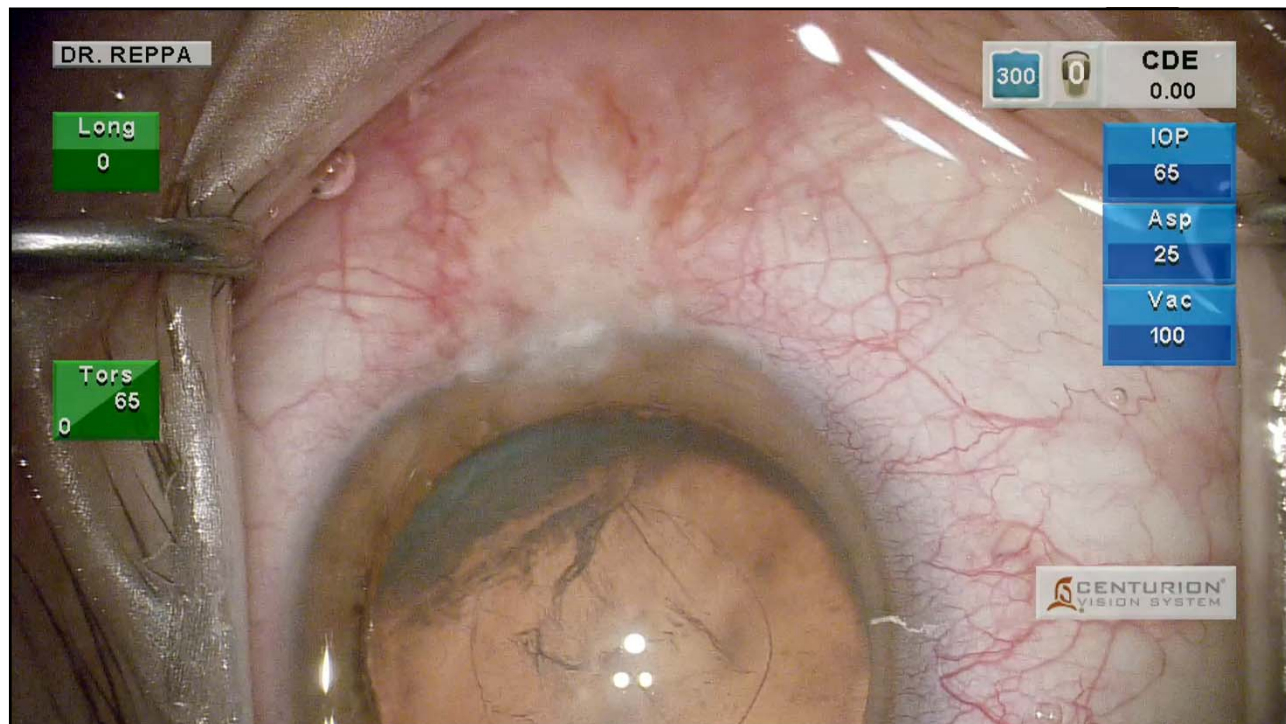
Lens Replacement/Refixation

- ▶ 57 yo F presents for evaluation of corneal edema and dislocated IOL
- ▶ OS: BCVA 20/400
- ▶ H/o CEIOL OU in her 30s
- ▶ H/o RD OS s/p repair 1 year prior with persistent macular edema
- ▶ Multiple steroid injections and Ozurdex x1
- ▶ Ozurdex migrated around dislocated IOL to AC
- ▶ Now with corneal edema
- ▶ 3-piece PCIOL visibly subluxed inferonasally on exam



Lens Replacement/Refixation

- ▶ 67 yo M presents for cataract evaluation
- ▶ OS: BCVA 20/60-2 BAT 20/100
- ▶ MRx: OD: +0.25 +1.25 x 30 OS: -2.00 +1.75 x 90
- ▶ H/o trauma to the left eye
- ▶ Exam with 1+ NSC, 1+Cortical and PSC
- ▶ Suspected zonular weakness nasally



Lens Replacement/Refixation

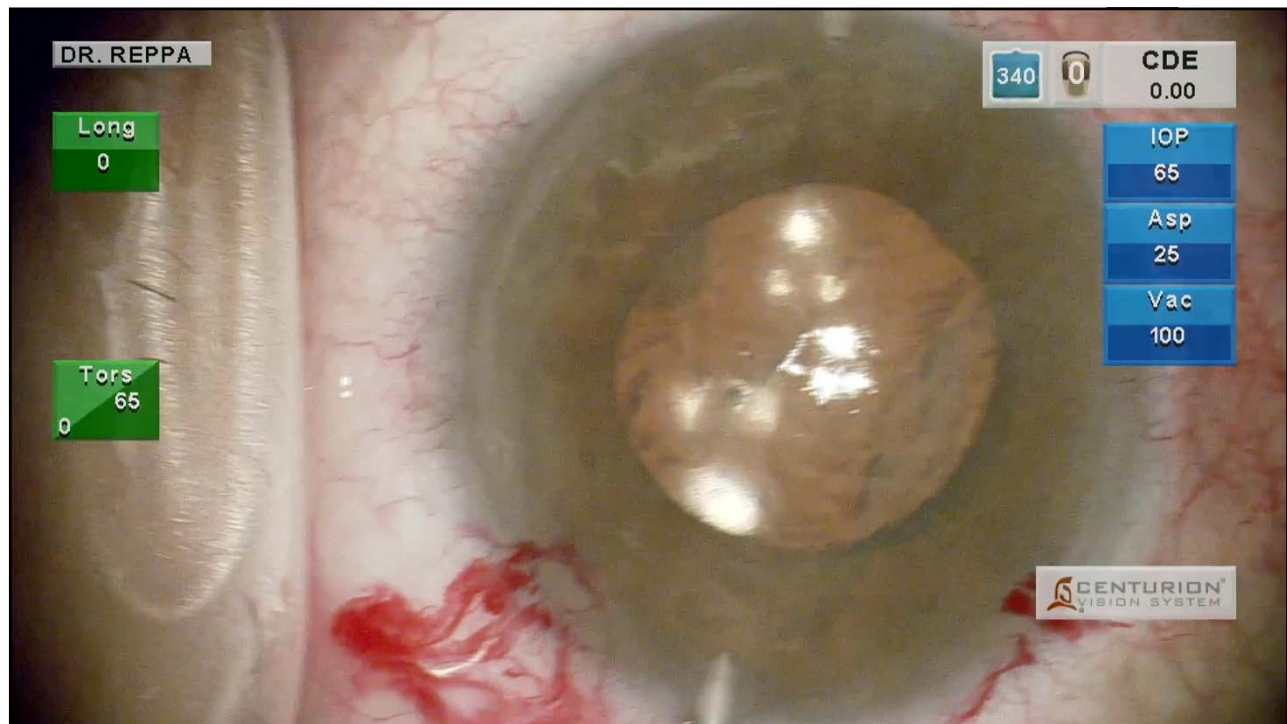
- ▶ Signs and symptoms
 - ▶ Decreased vision
 - ▶ Visibly dislocated IOL
 - ▶ Chronic inflammation
 - ▶ Chronic low grade pain
 - ▶ Gonioscopy- IOL in angle
- ▶ Indications for surgery
 - ▶ Aphakia
 - ▶ Dislocated IOL
 - ▶ Uveitis-Glaucoma-Hyphema syndrome

Medical Management

- ▶ Observation
- ▶ Contact lens
- ▶ Topical NSAIDS or steroids

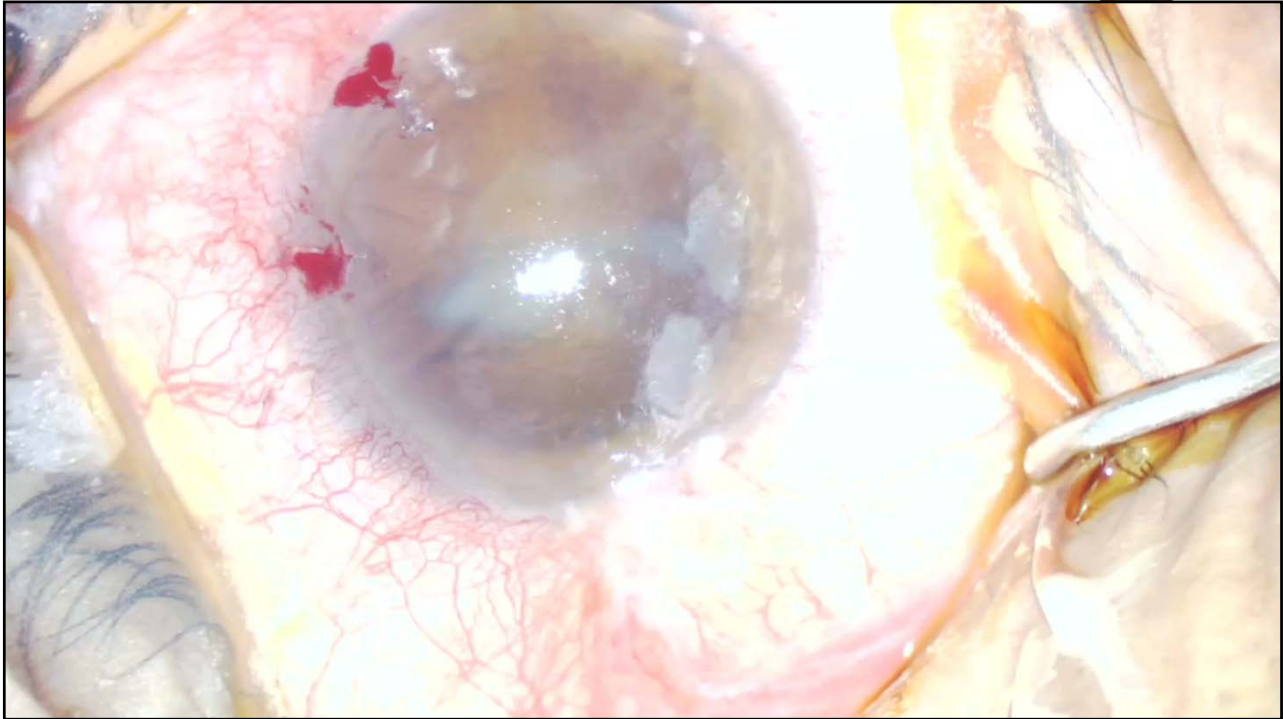
Surgical Management

- ▶ Iris Fixation
- ▶ Scleral Fixation
- ▶ Concurrent or staged procedures



Surgical Management

- ▶ Iris Fixation
- ▶ Scleral Fixation
- ▶ Concurrent or staged procedures



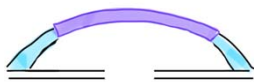
Post-op Management

- ▶ Medications
- ▶ Monitoring
- ▶ Refraction

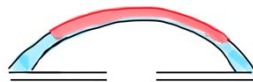
Possible surgical complications

- ▶ Immediate
- ▶ Long term
- ▶ Additional procedures
 - ▶ Corneal transplant for endothelial dysfunction
 - ▶ Pupilloplasty

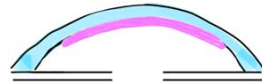
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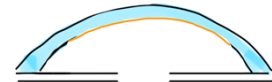
PKP



DALK



DSEK



DMEK

K. Rapp '18

References

- ▶ Borkar DS, Veldman P, Colby KA. Treatment of Fuchs Endothelial Dystrophy by Descemet Stripping Without Endothelial Keratoplasty *Cornea*. 2016 Oct; 35(10):1267-73.
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- ▶ Iovieno A, Neri A, Soldani AM, Adani C et al. Descemetorhexis Without Graft Placement for the Treatment of Fuchs Endothelial Dystrophy: Preliminary Results and Review of the Literature *Cornea*. 2017 Jun; 36 (6):637-641

Questions?