المؤتمر السنوي الدولي للجمعية الرمدية المصرية
INTERNATIONAL CONGRESS OF THE
EGYPTIAN OPHTHALMOLOGICAL SOCIETY

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Pediatric Keratoplasty

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Introduction

- Keratoplasty <18 yrs

- It is convenient, to divide into more narrowly defined age groups:

A. 0 - 2 (infant)

B. 3 - 6

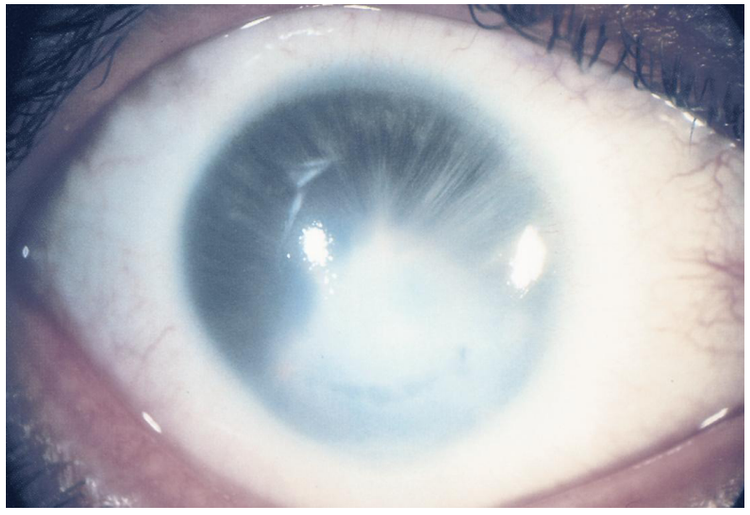
C. 7 - 12

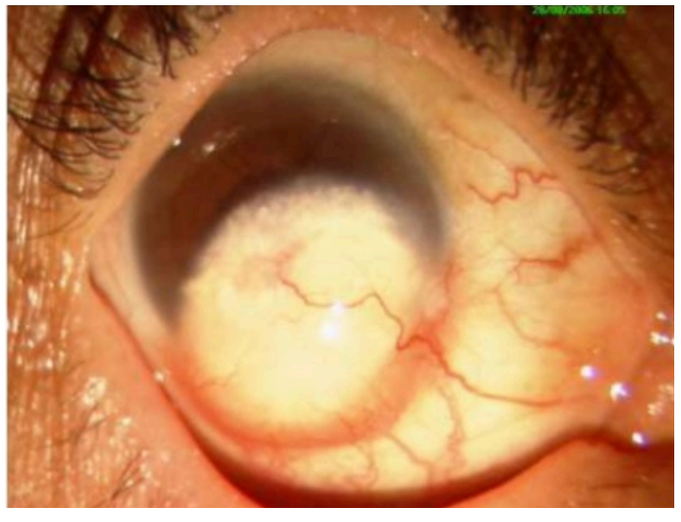
D. 13 - 18

- Neonatal corneal diameter 10 mm & adult diameter 12 mm is reached by 2 yrs.

Indications

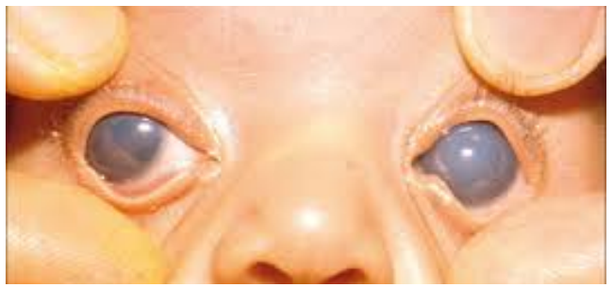
- CCO 60% (Peter's, sclerocornea, dermoid, CHED, PPED)

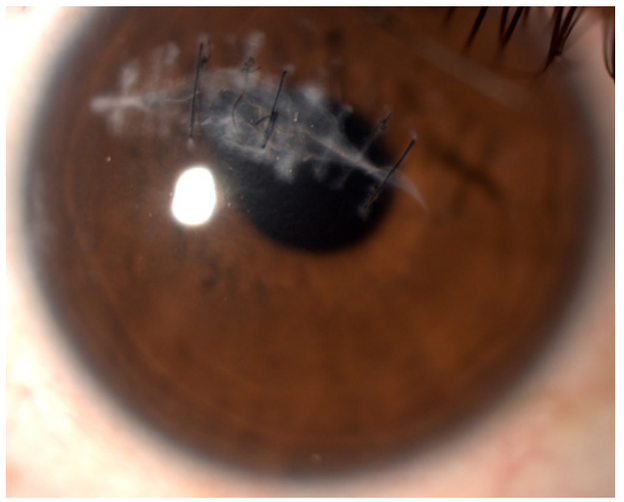


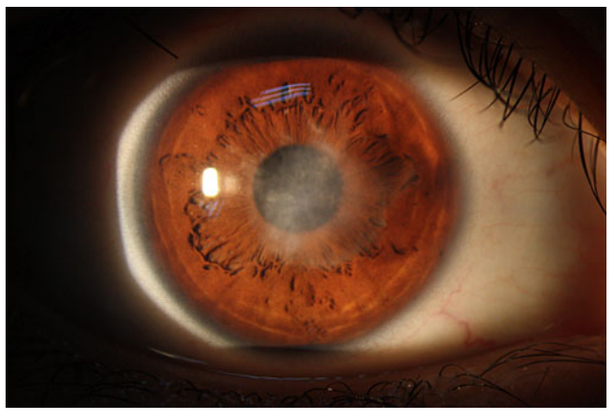


Indications

- Cong glaucoma 15%
- Metabolic (MPS)
- Traumatic (laceration, scarring, blood staining)
- Infection (HSV, bacterial, fungal)
- Others: interstitial keratitis, keratoconus, etc







Timing

- Not before 3rd m.

- Glaucoma control.

- Unilateral opacity:

  - Not to operate because of low success.

  - Still worth risks for binocular vision & provide “spare eye”.

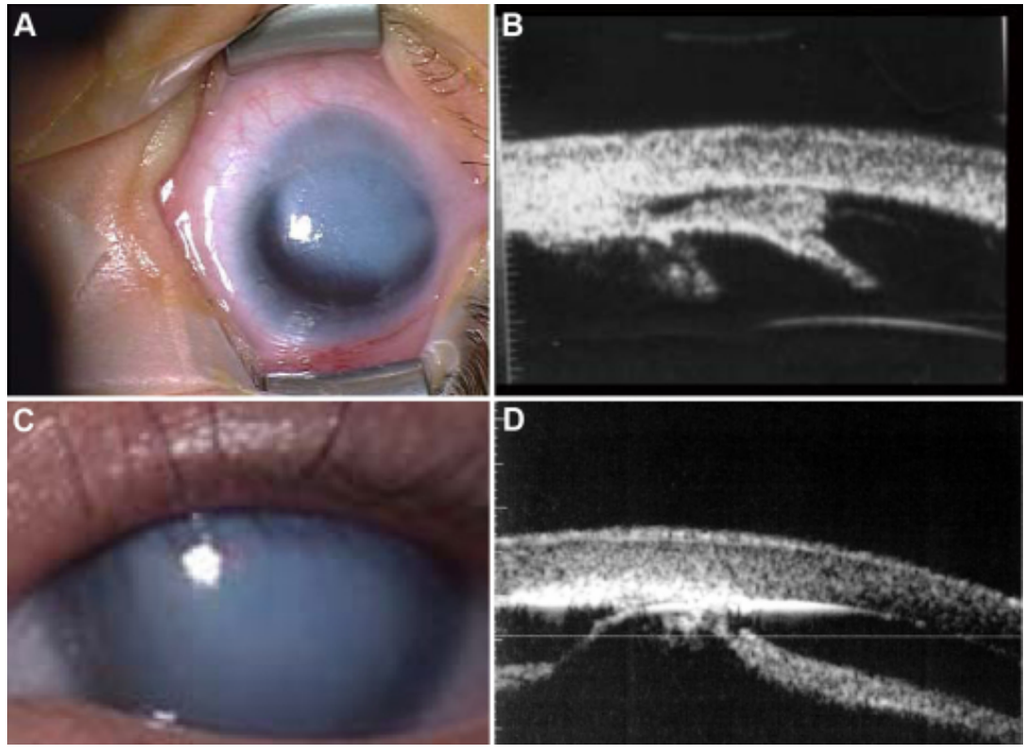
- Bilateral opacities

  - Less severe eye done 1st. - 2nd eye 3-4 ms later.

Preoperative

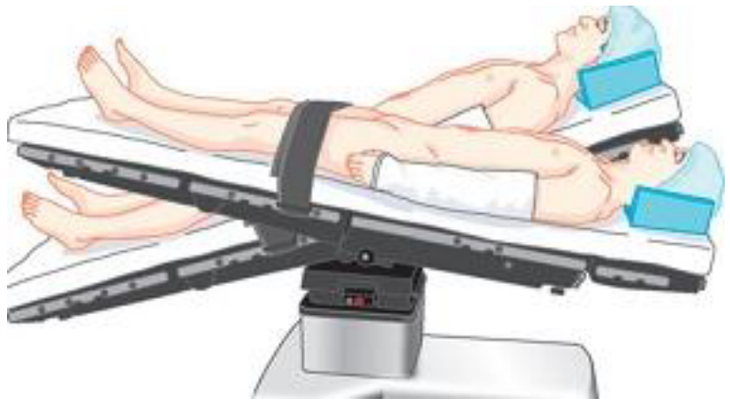
EUA

- SL, IOP, corneal diameter
- UBM, B scan
- ERG, VEP



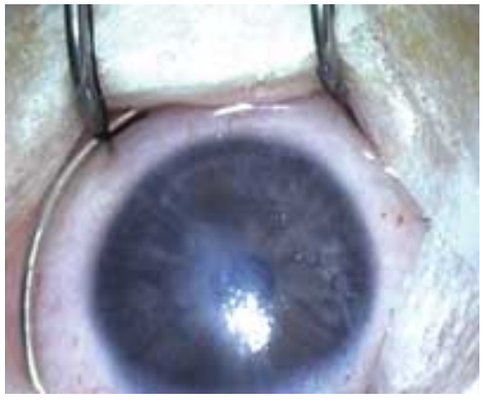
Anaethesia

- GA hyperventilation
- Retrobulbar block avoided
- Ocular massage or Honan balloon
- Mannitol
- Head higher than rest of body

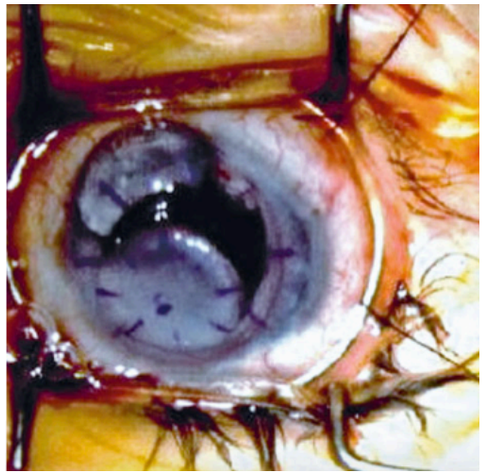


Technique

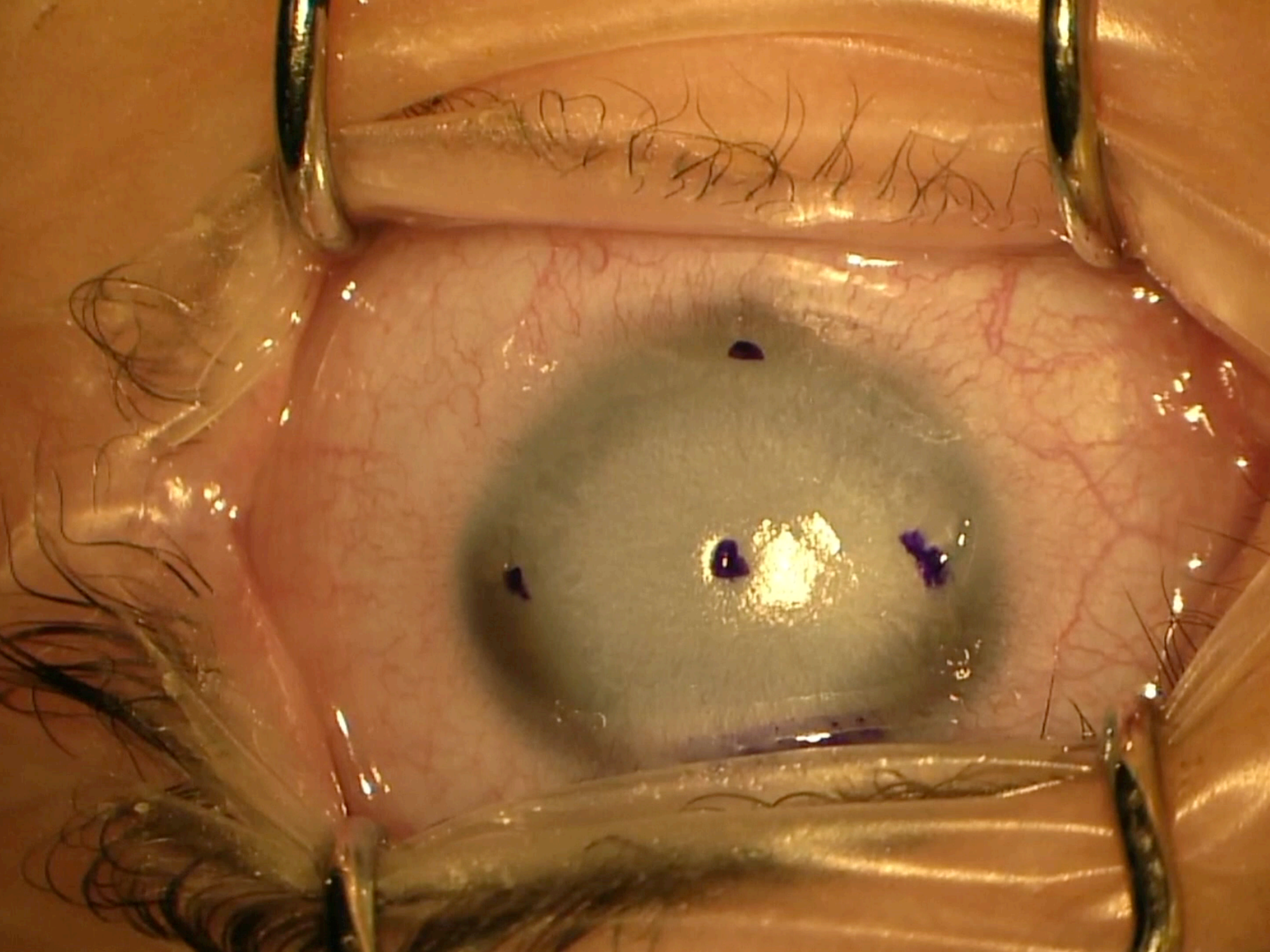
Anatomy presents unique challenges:

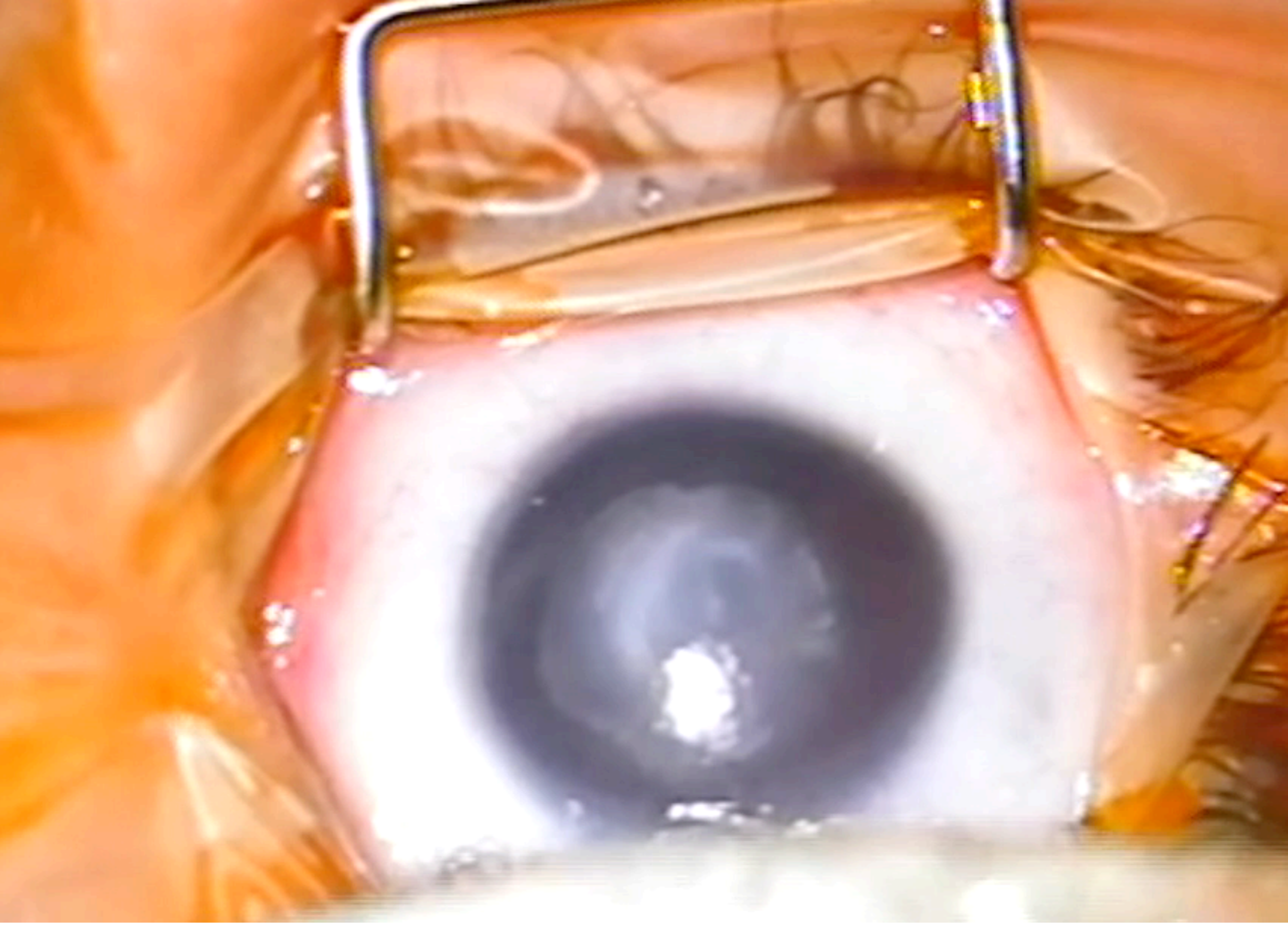


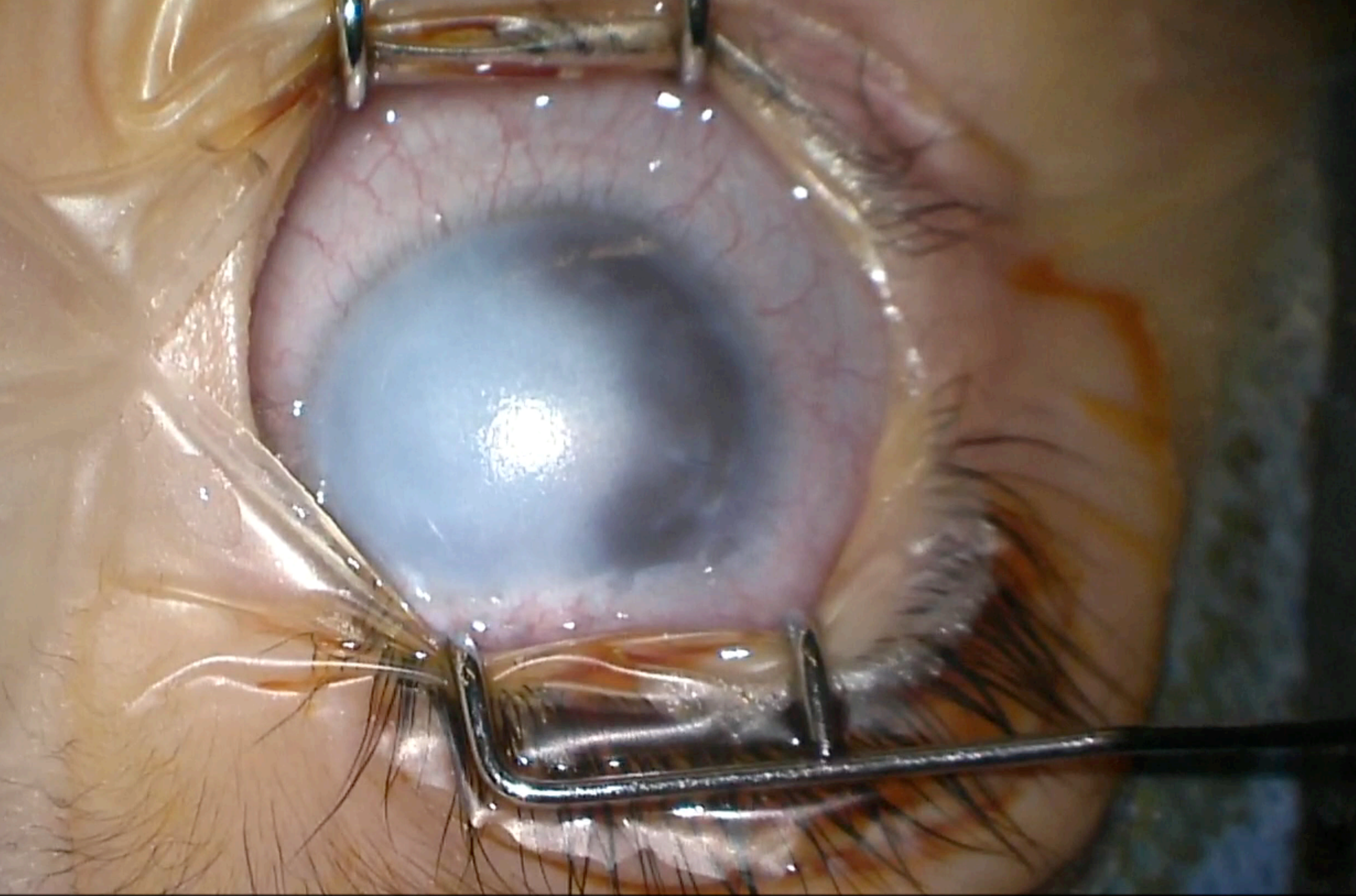
- Low scleral rigidity can cause collapse of globe — Flieringa.



- High +ve pressure — lens extrusion, suprachoroidal hge.
- Small trephination (5.5 - 7mm diameter) & shallow AC — Graft difference 0.5 -1.0 mm.
- Donor 4 -18 yrs — Less rigid tissue — difficult to handle & suture — Interrupted sutures.





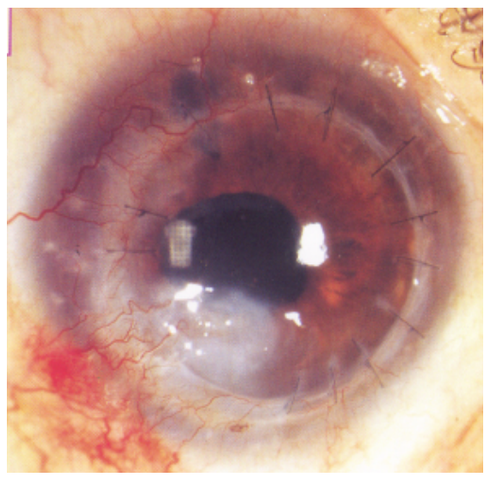


Postoperative

- Strong inflammatory responses —— plastic membranes & irido-corneal adhesions.

- Quick healing — loosening of sutures — suture abscesses & graft vascularization.

- Risk of infection due to loose sutures, epithelial defects, steroids



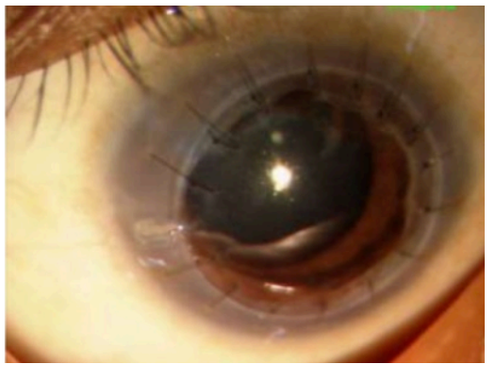
Postoperative care

- Frequent visits 3-4 days.
- Medications:
  - Topical prednisolone hourly
  - Topical quinolone
  - Cycloplegics
  - Systemic Steroids
- EUA for ROS as early as 4 wks.

Postoperative care

- Fever & vaccinations.
- Amblyopia treatment (occlusion).
- Glasses every 4-6 wks.
- CL.

Outcome



- 50 - 60 % success in 5 yrs.
- VA< 0.05 in 68%
- Postoperative complications:
  - Rejection
  - Graft failure (24%)
  - Infection (27%)
  - Trauma (19%)
  - Glaucoma

1. Younger age
2. Congenital corneal opacities (cf. acquired causes)
3. Disease severity
4. Associated anterior segment anomalies (e.g., anterior synechiae)
5. Cornea vascularization
6. Concurrent surgical procedures (including lensectomy and anterior vitrectomy)
7. Regrafting
8. Donor corneal size
9. Postoperative complications
Persistent epithelial defects
Allograft rejection
Infectious keratitis
Retinal detachment
Glaucoma

Challenges

- Graft over Host technique.
- FS keratoplasty.
- DALK.
- DSAEK, DMEK.
- Glaucoma drainage devices.

Conclusion

- KP in children aims to allow visual development.
- Decision to operate must be individualized.
- Acquired conditions have better outcomes than congenital.
- KP in infants more difficult & modifications to surgical technique required.
- Frequent postoperative examinations & sutures removed earlier.
- Early optical correction & aggressive amblyopia therapy necessary.

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Thank you