Managing the Malpositioned IOL

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Content
Assessment of the displaced IOL
Approach to retrieval, fixation/exchange options
Fixation techniques
Iris fixation
Scleral suture fixation
Intrascleral haptic fixation

In the OR where the excitement begins ......Videos only!!

- Techniques for retrieval – examples
- Techniques for fixation – examples
- Techniques for exchange – examples

Wrap up

Q&A

Assessment of the Displaced IOL

Clinical Assessment

1. Naked or encased in capsular bag- integrity, inflatability
2. Extent and location of zonulysis
3. IOL haptic design & material
4. Position of IOL when supine
5. Vitreous in AC
6. Retinal assessment
7. Endothelial cell count
8. Refractive error in both eyes
9. Reason for subluxation
10. Previous ocular surgeries/systemic disease e.g. TPPV/atopic dermatitis

Predisposing Factors - PC IOL Subluxation

1. Zonular weakness
   a. Pseudoexfoliation syndrome
   b. Connective tissue disease e.g. Marfan’s syndrome
2. Chronic uveitis
3. Post-vitrectomy
4. Increased axial length
5. Blunt trauma including atopic dermatitis
6. Surgical trauma
7. Capsular contraction syndrome (PXE, DM, uveitis)
Causes of PC IOL Subluxation

Early (weeks)
- IOL instability
  - PCR – inadequate capsular support
  - Zonulysis

Late
- Progressive capsular phimosis
  - Silicone IOL
- Small CCC
- Previous scleral/iris fixated
  - Suture related problems

Approach to retrieval, fixation/exchange options

Surgical Options – Retrieval
- Determine IOL position
  - Assess accessibility
- Retrieval from anterior segment
  - Microforceps grasping haptic or optic
  - 27 G needle for anterior assisted levitation
- Posterior
  - Posterior assisted levitation using 27 G needle
  - Trans pars plana vitrectomy

Surgical Options – the IOL
- Keep IOL
- Exchange for new PC IOL
  - Different haptic design
  - Different IOL power
o Old one damaged

• Exchange for iris clip IOL

Surgical Options – IOL Fixation Technique

• Suture fixation to
  o Sclera – directly or after inserting CTS
  o Iris

• Intrascleral haptic fixation to sclera (glued IOL)

• Iris clip IOL - retropupillary

Decision Making – Retrieving IOL
Decision Making – IOL Fixation Options

IOL Fixation Techniques for 3 piece IOL

Iris fixation
- Normal iris/pupil
- Fix both haptics
- No bag preferred

Scleral fixation
- Fix one haptic
- Possible to fix both haptics
- Bag/no bag

IOL exchange
- Haptic breaks or kinked
- Multifocal IOL
- Inappropriate power

Choice of IOL
- 3 piece IOL
- Iris clip
  Need quick fix e.g. unfit, elderly

IOL Fixation Techniques for Single Piece IOL

Suture in CTS
- Intact CCC
- Ability to dissect open bag
- Anchor 1 or 2 sites

Suture CCC
- Intact fibrotic CCC to sclera
- Suture CCC and haptic of single piece IOL through bag to sclera

IOL exchange
- Previous options unsuitable e.g. MI60 plate haptics
Iris Fixation of PC IOL

Stepser Sliding Knot
Scleral Fixation using Hoffman Corneoscleral Pockets

- Additional paracentesis
- Pull haptic and iris up towards incision to tie
- Suture may not be snug

Cross-section View

Knot tying completed
Knot settler within pocket as IOL positioned posteriorly

Microscope View
**Case scenarios to illustrate techniques**

PAL – 25G Needle

AAL – 27G Needle – Clothed IOL

Locate the Naked IOL – Scissor Vitrectomy

Forceps Assisted Fixation – Naked IOL, No vitrectomy

Forceps Delivery – Vitrectomy

Clothed IOL – Stripped, Vitrectomised

Iris Fixation converted to Glued IOL

Anteriorly Subluxated PC IOL – SF

Half Bow Sliding Knot

Anteriorly Subluxated IOL – CTS insertion

Scleral Fixation of CCC

Subluxated CTR/IOL complex

Current State of the Art
Summary: Managing Malpositioned IOLs

Various techniques – dependent on IOL position

Reposition

Anterior – microforceps or needle

Posterior - needle

Stabilization

Iris fixation

Siepser sliding knot

Scleral fixation

Modified Hoffman corneo-scleral pocket suturing

Intrascleral approach