Hooks & Rings In The Management Of Subluxated Cataracts

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I have no financial interests or relationships to disclose.

Introduction
Subluxated Cataract is probably the only type of cataract that still poses a challenge to the experienced phaco surgeon

Introduction- Capsular Support

Internal
- Endocapsular Rings
- Cionni’s ring
- Capsule Segments

External
- Iris Hooks
- Capsular Support System/Capsule Hooks- Specifically devised systems for Capsular Support
Iris Hooks Vs Capsular hooks

- Shorter return of the hook
- Angulation of the hook relative to the capsule plane - Tenting of Capsulorrhexis edge
- Capsular fornix is not supported

Advantages OF Capsule Hooks

- Supports - Both
  - Capsulorrhexis edge
  - Capsule fornix
- Stabilizes conditions during surgery
- Allows for subsequent successful Ring/segment implantation and IOL implantation

Capsule Segments
Capsular Tension Rings

- Very effective
- First to be introduced
- Widely available
- Economical
- Mechanism
  - Circumferential expansive force
  - Enhances IOL centration
  - Reduces postoperative pseudophacodonesis
- Limitations/Disadvantages
  - Used with an intact capsulorhexis and posterior capsule
  - Cortex entrapment (Overcome by Henderson’s ring)

Cionni’s Ring

- Modified CTR
- A distal eyelet on a fixation hook- 0.25 mm above the plane of the ring
- Sutured to sclera- Provides additional stability
- Used in more significant subluxations
- Limitation
  - Used with an intact capsulorhexis and posterior capsule

Capsular Tension Segments

- Partial ring segments with a fixation hook for temporary or permanent fixation
- One or more segments can be used
- Placement and removal- Easy and atraumatic
- Stripping cortex out is easy
CTR Vs Cionni’s Ring

- Cionni’s provides all the benefits of a CTR ring
- In addition, it provides enhanced stability
- Downside- Technically more difficult

Cionni’s Ring Vs Capsule Segments

- Cionni’s ring- Very flimsy and surgery can be tricky
  - Cionni’s Ring
  - 10-0 prolene sutures
- Segments are smaller and easier to handle
- Cionni’s ring has the advantage of circular expansion of bag
  - Can be offset by additional CTR implantation alongwith Capsule segments if required

Surgical Technique Highlights

- Topical or Peribulbar block
- Section
  - Preferably farthest from the area of subluxation
- Viscoat layering in the area of zonular dialysis
Surgical Technique Highlights

• Capsulotomy
  – Started with cystitome away from dialysis
  – Completed with capsulorrhexis (Utrata’s) forceps
  – Adequate rim of anterior capsule ensured in the area of dialysis
  – Capsulorrhexis centration maintained with respect to the lens diameter and not the pupil
  – Properly placed capsulorrhexis would appear eccentric (away from the area of dialysis)
  – Size- About 5 mm

• Capsular hooks
  – Placed after capsulorrhexis
  – Placed through vertical incisions (not too bevelled)
  – Placement
    • 90° intervals for diffuse zonular laxity
    • 45° for absence of zonules in a region
  – Do not over tighten the hooks
    • Requires a slight tug on the capsulorrhexis edge and not too much distortion
  – Removal is by simply pulling it out after freeing the capsule edge
  – Incisions should be hydrated

• Hydroprocedures
  – Gentle hydrodissection and hydrolineation

Surgical Technique Highlights

• Nucleus Management
  – Slow-motion Phaco- low flow rates and vacuum
  – No dialing of nucleus
  – Phaco-chop/ Preferred technique

• Implantation of CTR/ Cionni’s Ring/ Capsule Segment
  – After nucleus removal
  – CTR may be placed prior to nucleus removal
Surgical Technique Highlights

• Irrigation-Aspiration
  — Always with the capsular support (Rings/ Segment or Hooks+ Segment) in place
  — Avoid the fornix and the capsulorrhexis edges

• IOL Implantation
  — No or minimal dialing

Video

Post Operative Picture
Post Op Day- 1

Thank You

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