

Cataract Co-Management: “Hype or Help” TQ Outline

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Course Duration: 1 hour 40 minutes

Format: Case-Based Learning + Discussion

I. Introduction & Learning Objectives (5 minutes)

Modern cataract surgery has evolved far beyond the simple removal of a cloudy lens. Today, it is refractive surgery—with patient expectations shaped by advances in LASIK, SMILE, ICLs, and an expanding portfolio of premium IOL technologies. As patients increasingly seek spectacle independence, optometrists and cataract surgeons must collaborate closely to ensure safe, predictable, and personalized outcomes. This partnership is especially essential in patients with prior refractive procedures, complex ocular anatomy, or premium lens goals.

Key themes of the course include:

- **Overview of modern refractive cataract surgery options:**
From multifocal and EDOF IOLs to toric, monofocal-plus, Light Adjustable Lenses (LAL), and combination procedures (e.g., ICL + cataract surgery), clinicians must understand the strengths and limitations of each technology—especially when used in atypical corneas or complex anterior segment anatomy.
- **Importance of collaborative OD/MD care:**
Successful outcomes depend on pre-operative optimization, clear communication, shared decision-making, and timely co-management. Optometrists play a critical role in diagnostics, expectation-setting, postoperative complication detection, and refractive fine-tuning.

Learning Goals

1. **Recognize unique considerations in post-refractive patients:**
Historical corneal alterations, prior intraocular procedures, and biomechanical instability all impact IOL planning and outcomes.
2. **Improve surgical planning and postoperative co-management:**
Understand when to recommend certain IOL technologies, when to defer or modify procedures, and how to guide patients through healing and refractive stabilization.

3. Navigate complications efficiently and confidently:

Whether dealing with retained cortex, dysphotopsias, or unexpected refractive results, clinicians must differentiate normal from abnormal findings and know when urgent referral is warranted.

II. Case 1 — Multifocal IOL Cataract Surgery After Prior ICL (20 minutes)

This case involves a highly myopic patient who received an ICL 20 years earlier and now presents for cataract removal with premium multifocal IOL interest. This scenario raises unique considerations due to aging ICL materials, vault variability, and long-term endothelial safety.

Topics Covered

- **Pre-operative considerations in long-standing ICL patients:**
Evaluation should include vault measurement with OCT, endothelial cell count (ECC) to assess long-term safety, IOP assessment, and slit-lamp evaluation of lens-ICL interactions. A 20-year-old ICL may show decreased vault or contact with the crystalline lens.
- **Anterior segment evaluation:**
 - **Vault:** Ideal vault ranges shift with age due to crystalline lens thickening.
 - **ECC:** Critical before considering ICL removal vs. retention.
 - **ICL stability:** Position, rotation (for toric models), and possible pigment dispersion.
- **Surgical pearls — ICL removal vs. retention:**
Some surgeons prefer to remove the ICL prior to cataract surgery; others remove it during the case. Retaining the ICL is rarely recommended for multifocal IOLs due to optical interference and space limitations. Technique matters: careful viscodissection, minimizing endothelial trauma, and anticipating deeper anterior chambers.
- **Multifocal IOL selection challenges:**
Prior extreme myopia + altered anterior segment geometry impacts effective lens position (ELP) prediction. Multifocal optics require precise centration and accurate refractive targeting.

- **Refractive outcomes & patient counseling:**

Patients should understand that refractive predictability is reduced in post-ICL eyes. Realistic expectations and thorough counseling are essential.

Discussion Points

- **Managing expectations in high myopes:**

These patients often seek spectacle independence but are at increased risk for refractive surprises and dysphotopsias.

- **Predictability of IOL calculations in altered anatomy:**

Formula selection (e.g., Barrett True-K, Haigis), axial length considerations, and surgeon experience all influence the final result.

III. Case 2 — Multifocal Cataract Surgery With Irregular Pupil Using a Malyugin Ring (20 minutes)

This scenario explores surgical decision-making when the pupil is not round, symmetric, or adequately dilating.

Topics Covered

- **Etiologies of irregular pupils:**

Trauma, posterior synechiae, pseudoexfoliation, iris atrophy, chronic inflammation, and medications (e.g., miotics) may contribute to poor dilation or distortion.

- **Surgical planning for premium lenses:**

Multifocal IOLs require centration, consistent pupil size, and symmetric light distribution. Irregular pupils compromise multifocal image quality and increase dysphotopsia risk.

- **Step-by-step use of the Malyugin ring:**

Placement, safe engagement of the pupillary margin, maintenance of dilation throughout the case, and considerations for removal.

- **Impact of pupil shape on multifocal IOL performance:**

Non-circular pupils can create asymmetric glare, halos, and reduced contrast sensitivity.

Discussion Points

- **When to avoid multifocal IOLs:**
Trauma, iris defects, uncontrolled uveitis, and pupil sphincter damage are relative contraindications.
- **Postoperative dysphotopsias in irregular pupils:**
Co-management requires understanding whether symptoms stem from IOL optics, residual inflammation, dry eye, or mechanical distortion of the pupil.

IV. Case 3 — Collaborative Care Case: Retained Cortex Removal After “Uncomplicated” Cataract Surgery (20 minutes)

A classic co-management scenario: a patient presents postoperatively with persistent inflammation and visual disturbance, eventually attributed to retained lens cortex.

Topics Covered

- **Review of cortex removal expectations:**
Most cases appear “clear” intraoperatively, but small fragments can hide in the sulcus or behind the IOL. Symptoms often mimic routine postoperative inflammation.
- **Identifying retained cortex vs. inflammation vs. early PCO:**
Optometrists must differentiate:
 - Retained cortex = fluffy white material, variable location
 - Inflammation = cells/flare without obvious material
 - PCO = posterior capsular changes, not early-stage symptoms
- **Diagnostic clues for the collaborative OD:**
Photophobia, persistent AC cell after 1–2 weeks, localized capsular swelling, and poor refractive stability.
- **Indications for return to surgeon:**
When inflammation is steroid-dependent or persistent, when visual acuity fails to improve, or when anatomic signs point to a retained lens fragment.

Discussion Points

- **Steroid-responsive vs. surgical-required inflammation:**
When topical therapy can control symptoms—and when surgical removal is necessary.

- **Patient communication:**

Maintaining trust is critical. Collaborative messaging should reinforce continuity of care rather than “blaming” any provider.

V. Case 4 — Post-RK Patient Undergoing Light Adjustable Lens (LAL) Cataract Surgery (25 minutes)

Post-RK patients represent one of the most difficult groups for IOL planning due to irregular, unstable corneal curvature and loss of accurate keratometry.

Topics Covered

- **Challenges of IOL calculation after RK:**

Corneas may appear steeper centrally but flatter peripherally. Diurnal fluctuations lead to hyperopic drift, complicating pre-op measurements.

- **Irregular corneal curvature and refractive unpredictability:**

Standard biometry is unreliable. Topography, tomography, and historical data (when available) guide the planning process.

- **Why LAL is uniquely beneficial:**

The Light Adjustable Lens allows postoperative adjustments after refractive stability is assessed—ideal for patients with unpredictable outcomes. Surgeon + OD collaboration is essential to guide adjustments.

- **Adjustment protocol & OD role:**

Refractions must be precise and stable before UV adjustments. ODs play a key role in surface optimization (dry eye management), scheduling timing, patient protection with UV-blocking eyewear, and monitoring for fluctuations.

Discussion Points

- **Avoiding hyperopic surprise:**

Post-RK eyes often shift hyperopic after surgery; LAL mitigates this by enabling real-time adjustment.

- **Pre-LAL and between-adjustment considerations:**

- Aggressive dry eye treatment
- Avoiding epithelial instability
- Ensuring accurate, repeatable refractions.

VI. Case 5 — A 45-Year-Old Mild Keratoconus Patient Achieving Blended Vision With ICL (20 minutes)

This case highlights refractive options for younger patients with early ectatic disease who desire spectacle independence but are not ideal LASIK candidates.

Topics Covered

- **Screening & staging keratoconus for ICL candidacy:**
Tomography, epithelial thickness mapping, and corneal stability measurement help determine candidacy. Mild, stable keratoconus often can benefit from ICL in lieu of corneal refractive surgery.
- **Rationale for ICL in early ectatic disorders:**
EVO ICL avoids corneal tissue removal and preserves biomechanical strength—critical in ectasia-prone eyes.
- **Blended vision strategy:**
Mini-monovision or intentional offset using ICLs can reduce spectacle dependence for intermediate and near tasks. Patient selection and counseling are essential.
- **Long-term biomechanical considerations:**
Monitoring for keratoconus progression, corneal thickness changes, and ensuring adequate vault over time.

Discussion Points

- **Comparing ICL to refractive lens exchange (RLE):**
In 45-year-olds, RLE eliminates accommodation and introduces future presbyopia needs; ICL preserves the natural lens and maintains accommodation.
- **When to combine CXL with ICL:**
Indicators include documented progression, very young patients, or suspicious tomography patterns.

VII. Summary, Key Takeaways, & Q&A (10 minutes)

- **Clinical pearls from all five cases:**
 - Premium IOLs require pristine ocular surface, stable corneal measurements, and reliable anatomy.

- Prior refractive surgery demands specialized calculations and modified expectations.
- Collaborative communication reduces complications and improves patient satisfaction.
- **Decision trees for premium IOL selection:**
Algorithms for multifocal vs. EDOF vs. monofocal-plus vs. LAL in irregular corneas or post-refractive patients.
- **Enhancing collaborative OD/MD workflows:**
Co-management succeeds when both parties share clear documentation, postoperative protocols, and aligned messaging.
- **Q&A / Open Discussion:**
Audience-driven questions about complex anatomy, challenging refractions, and co-management strategies.