APAO 2025: The 40th Asia-Pacific Academy of Ophthalmology Congress

PHACO WITH ZONULOPATHY: MY 6 BEST PEARLS

Dr David F Chang, California

- Re-enlarge continuous curvilinear capsulorhexis (CCC) diameter
  - In pseudoexfoliation cases, use the same 3-piece intraocular lens (IOL) in the same eye to prevent CCC contraction, ensure good centration, and avoid IOL power adjustment.
  - Provides additional 2-point fixation in both bag and sulcus during eye movement (haptic-ciliary body).
- Use of capsule retractors for better support.
- Spiral capsular tension ring (CTR) injector to stabilize the capsule.
- Dispersive ophthalmic viscoelastic device to stretch the posterior capsule.
- 3-Piece IOL in sulcus (+ CCC capture) for enhanced stability.
- Convert to manual extracapsular cataract extraction when required for better surgical control.

PATIENT COMMUNICATION: MASTERING UVEITIS CARE

Dr Virendra S Sangwan, New Delhi

Misconceptions surrounding uveitis care often lead to unnecessary fear and hesitation among patients. Many believe that uveitis is incurable or that cataract surgery in uveitic patients has poor outcomes. There is also a widespread concern that systemic steroids and immunomodulatory therapy pose significant risks. However, with appropriate management, these treatments can effectively control inflammation and prevent complications.

Uncontrolled intraocular inflammation can result in severe consequences, including iris neovascularization, adhesions, cyclitic membrane formation, secondary cataracts, glaucoma, and in extreme cases, phthisis bulbi. Early intervention is crucial in preventing irreversible vision loss.

Treatment strategies for uveitis involve a combination of corticosteroids, nonsteroidal immunosuppressants, and biologics. Corticosteroids may be administered orally, topically, or intravitreally. Immunosuppressants, such as cyclosporine A, tacrolimus, azathioprine, methotrexate, mycophenolate mofetil, cyclophosphamide, and chlorambucil, help in achieving long-term disease control. Biologics, particularly tumor necrosis factor-α inhibitors, are emerging as essential tools in treatment.

Key Considerations

- Effective communication is crucial in uveitis care.
- Steroids are the mainstay of treatment in acute immune-mediated inflammation.
- Systemic steroids alone are insufficient for conditions like Wegener's granulomatosis, Behçet's, and Vogt-Koyanagi-Harada syndrome.
- Immune modulation and biologics are essential.
- Responsible and empathetic care is vital for doctors.

A JOURNEY OF IMPROVING CATARACT SURGICAL QUALITY: THROUGH MONITORING AND BENCHMARKING

Dr RD Ravindran, Madurai

The Aravind Eye Care System has made remarkable progress in enhancing cataract surgical quality through rigorous monitoring and benchmarking practices. Key initiatives focus on improving patient safety by minimizing anesthesia-related complications and post-operative infections. For accurate patient identification, ID cards are collected at every outpatient encounter, and wristbands are verified during inpatient visits.

A major milestone was achieved in 2016 when Aravind Eye Hospital, Madurai, transitioned to sub-Tenon anesthesia, resulting in zero anesthesia-related perforations since 2017, effectively preventing 92 potential perforations. The use of intracameral moxifloxacin (500 µg in 0.1 mL), piloted in 2014, further reduced infection risks.

To manage complex cases effectively, Aravind matches surgical complexity with surgeon competence, segregating cases based on difficulty and assigning experienced surgeons or referring patients to specialized facilities. Essential consumables like hooks and rings are always maintained to ensure preparedness.

Skill development is prioritized through structured training programs, including wet lab practice and a 1-month intensive surgical training. Residents gain confidence within 3 months, supported by ongoing monitoring and mentoring to reduce surgical complications. Quality monitoring includes sharing data and benchmarking outcomes among surgeons, leading to significant improvements, such as adjusting incision architecture in manual small-incision cataract surgery and refining the A-constant of IOLs.

By focusing on root cause analysis and evidence-based solutions, Aravind Eye Care System has established itself as a leader in cataract surgical care, consistently achieving excellence in clinical quality and patient safety.

MANAGING POSTOPERATIVE REFRACTIVE SURPRISES

Dr Supriya Samak Sriganesh, Bengaluru

Postoperative refractive surprises can occur despite meticulous planning. These surprises often result from inaccuracies in biometry, improper IOL formula selection, incorrect cylinder calculations (toric or limbal relaxing incisions), or even human errors such as data entry mistakes. Ensuring that the right patient and the correct eye are identified at each step is crucial to minimizing such surprises.

Minus residual refractive errors often arise from factors like sulcus IOL adjustment, bag distention syndrome, or capsular contraction. Plus residual refractive errors may occur following refractive surgery or with plate haptic lenses.

Cornea-based procedures: When dealing with residual errors of less than 2 diopters (D), corneal-based procedures may be appropriate, provided there is no corneal pathology, dry eye, glare, halos, or other photic phenomena. Timing is crucial: for photorefractive keratectomy (PRK), correction can be performed once manifest refraction is stable, while for laser-assisted *in situ* keratomileusis (LASIK), a waiting period of 3 months after the initial surgery is recommended.

Lens based procedures: For toric IOL rotation, intervention should ideally take place within 2 weeks postoperatively to achieve optimal outcomes.

In cases where secondary piggyback lenses are required, axial length-independent calculations based on careful manifest refraction are essential. Hyperopic errors up to 7D can be addressed by multiplying the spherical equivalent by 1.5, while for errors beyond 7D, the Holladay R formula or refractive vergence formula is recommended.

Piggyback Sulcus Lens Formulae

For underpowered pseudophakes (hyperopes), the lens power calculation varies based on axial length:

- Short eye (<21 mm): Power = (1.5 × S.E.) + 1
- Average eye (22-26 mm): Power = (1.4 × S.E.) + 1
- Long eye (>27 mm): Power = (1.3 × S.E.) + 1.

For overpowered pseudophakes (myopes), the calculation is:

- Short eye (<21 mm): Power = (1.5 × S.E.) - 1
- Average eye (22-26 mm): Power = (1.4 × S.E.) - 1
- Long eye (>27 mm): Power = (1.3 × S.E.) - 1.

Choosing the right lens: Common lenses used for secondary piggyback implantation include Rayner sulcoflex and 3-piece silicone IOLs (AQ5010V or AQ2010V, STAAR surgical or B&L). STAAR ICLs are also commonly utilized. However, it is advisable to avoid 3-piece acrylic implants as their semi-tacky nature and square truncated edges may interact with the posterior iris.

IOL exchange: Calculating the IOL power in pseudophakic mode is essential when considering an IOL exchange. Additional formulae, such as Hill Vergence and Barrett RX, can provide reliable results to guide surgical planning.

Take Home Messages

- The key to managing postoperative refractive surprises is prevention.
- In the event of a surprise, open communication with the patient, a clear management algorithm, and exploring unconventional yet effective options can lead to satisfactory outcomes.

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