Cataract Surgery Complications: The Retina Perspective
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CONFLICTS
• I have no relevant financial disclosures or conflicts

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Objectives
• Discuss cataract surgery preoperative risk factors for complications
• Review anterior segment intraoperative management of cataract surgery complications
• Discuss the urgency of referrals following cataract surgery complications
• Review retinal management of these conditions

Introduction
• Cataract surgery has a favorable outcome in approximately 98% of patients

Introduction
• Cataract surgery is overwhelmingly successful!
• From the Retina Specialist: What is the #1 reason patients are not satisfied with their cataract surgery?
Patient Education

Prior to CE/IOL: Coexisting Retinal Disease

• Many retinal diseases including DR, DME, AMD, RVO, ERM, and more rare conditions may be exacerbated by cataract surgery
• Pre-operative documentation is important
• A good macular examination and/or OCT testing is key for evaluating potential BCVA
  • I recommend pre-op OCT testing in all patients considering cataract surgery
  • I STRONGLY recommend pre-op OCT testing in patients considering “premium options”
• Avoid “premium options” and monovision in patients with retinal disease
• Toric lenses may still be appropriate to reduce glasses burden in select patients
• When in doubt  referral to a retina specialist for further evaluation

Cataract Surgery Success

• There are many other nuances to “success” from the patient’s perspective
  • Interactions with clinic staff, OR staff, referring OD, surgeon
  • Education regarding refractive outcome and goals
  • Value
    • Happy with Premium IOL package?
    • Medication costs
  • Comparison to peers

Serious Adverse Events After Cataract Surgery

• Serious Adverse Events
  • One-year rate of endophthalmitis, suprachoroidal hemorrhage, and/or retinal detachment
  • Age – No association
  • Race – Likely no association
  • Sex – Men are higher risk
    • Pseudophakic RDs, Endophthalmitis, α-antagonists
  • Diabetes – Increased risk in PDR patients but no increased risk in NPDR patients

Serious Adverse Events After Cataract Surgery

• Surgeon Factors
  • Surgeon Volume – High-volume tend to have lower complication rates
    • Some confounding variables here due to case mix
      • i.e. cornea and glaucoma specialists are often treating patients who are at higher risk for complications at baseline
  • Surgeon Experience/Age –
    • Residents have higher rates of complications
    • Otherwise, in general, no trends have been consistently identified
Intraoperative Management: Anterior Segment

• Anterior complications/challenges
  • Zonular Dehiscence, Capsular rent, Intraoperative Floppy Iris Syndrome etc.
  • Many experts are in attendance

Intraoperative Complications

• Anterior complications/challenges
  • Zonular Dehiscence, Capsular rent, Intraoperative Floppy Iris Syndrome etc.

Posterior Capsular Rupture

• Early vs late rupture
  • Ensure good anterior vitrectomy using triamcinolone
  • If dropped fragments “don’t go digging!”
  • Early PC rupture (retinas specialist should be contacted immediately)

• Small – may consider placement in the bag
  • Any doubt – place it in the sulcus

• If retained cortex – consider NCISL placement or aphakic

IOL Placement

• Small – may consider placement in the bag
  • Any doubt – place it in the sulcus

• If retained cortex – consider NCISL placement or aphakic

Suprachoroidal Hemorrhage

• Very rare in modern era – incidence <0.1%
  • Risk factors: older age, high pre-op IOP, history of cardiovascular disease or HTN
  • Sudden shallow of the AC, iris prolapse and loss of the red reflex
  • Suture wounds and give post-op Diamox

Urgency: Very urgent!

• POD0 or POD1
  • Consider confirming diagnosis at time of surgery with indirect ophthalmoscopy

Suprachoroidal Hemorrhage Management

• Pain control
• Patient expectations management
  • IOP management → corneal edema management
  • Hemorrhage will liquify at 2 weeks → consider drainage with PPV

• Dr. Tang Suprachoroidal Hemorrhage Drainage Video

Postoperative Complications: RLF

• Incidence: 0.3%-1.1%
• Risk Factors:
  • Dense brunescent hypermature or posterior polar cataracts
  • Topical anesthetics
  • Zonular compromise
  • Fellow eye with complicated cataract surgery
  • Floppy iris syndrome
• Small amounts of retained cortical material may be tolerated
• Persistent inflammation leads to CME, reduced visual outcomes and increased rate of RD (14.5%)

Postoperative Complications: RLF

• Management → Steroids, cyclopelics and IOP-lowering medications
  • PPV/PPL is typically performed within a few days
  • Less than 1-2 weeks results in better visual outcomes
  • Need a reasonably clear cornea (IOP management)

Urgency: Urgent – Refer POD1-2

• PPV/PPL Video
Postoperative Complications: CME

- Incidence: 1-2% of patients with routine CE/IOL will get clinically significant CME
  - Much higher in patients with complications or risk factors
  - Clinically significant → 20/40 BCVA or worse at 4-12 weeks post-op
- OCT or angiographic evidence in up to 20% of patients
- Mechanism
  - Inflammatory
  - Mechanical (vitreous traction)

Interesting Case

- 80 year old male 2 weeks s/p CE/IOL OD
- VA 20/60, PH 20/50
- Patient not satisfied with result

Postoperative Complications: CME

- Treatment:
  - 1) Prevention → peri-operative NSAIDs and topical steroids
  - 2) Topical treatment → extended course of NSAIDs and topical steroids
  - 3) Sub-tenons or intravitreal treatment
  - Mechanical → YAG vitreolysis or PPV
- >90% of cases will resolve at 2 years with treatment
- Urgency: Moderate
  - Recommend identifying the CME, starting topical drops and then referral within 1 week to retina specialist

Interesting Case

- Noted to have vitreomacular adhesion on pre-op OCT
- Likely recent release of VMT without macular hole formation
- Expect resolution over the coming weeks without treatment
Postoperative Complications: Retinal Detachment

• Incidence: 1% in the year following CE/IOL
  • Pseudophakic patients have 5x risk of phakic patients of developing RD in any given year
  • PVD is common in the months following CE/IOL
  • Anterior vitreous is likely disturbed
  • Protuberance of natural lens may reduce vitreous traction during eye movements
• Treatment: Typically PPV with or without scleral buckle
  • Urgency: Determined by macular status and NPO status. Important to manage patient expectations
    • Literature suggests “Urgent not emergent”
    • Macula off → Visual prognosis is same within 1 week. VRS often repairs next available
    • Macula on → VRS will make arrangements to fix asap
      • SRF moves slowly
      • Inferior fluid more stable
      • Positioning can help

Postoperative Complications: Dislocated IOL

• Most commonly occur >10 years after CE/IOL due to zonular laxity
  • May occur as early as POD0
  • May present in 5 categories
    • 1) Decentered IOL in capsular bag
    • 2) IOL partially subluxed outside of capsular bag
    • 3) Decentered IOL in the sulcus
    • 4) IOL in the capsular bag with both being subluxed and decentered
    • 5) IOL completely dislocated and sitting on the retina
  • Not one size fits all for surgical options
    • If 3-piece IOL → Reposition with Yamane or suture
    • If 1-piece IOL → Exchange with Yamane fixation or ACIOL
    • Yamane Video

Postoperative Complications: Endophthalmitis

• Incidence: Approx. 1/2000-3000 cases
  • Presents within 1 week of surgery with pain decreased vision, corneal edema, increased inflammation, fibrin reaction
  • Most commonly coagulase-negative, gram positive bacteria (staph, strep)
  • Presentation <2 days typically more virulent organisms
  • Treatment: Tap and injection of antibiotics and/or PPV depending on clinical course
  • Urgency: Extremely urgent!

Thank you!