Considerations for Cataract Surgery in Patients with Coexisting Retinal Disease

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CONFLICTS
• I have no relevant financial disclosures or conflicts

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Objectives
• Discuss cataract evaluation and surgery in the presence of coexisting retinal disease
• Discuss strategies to reduce risk of post-operative CME
• Discuss technical considerations in cataract surgery following prior vitrectomy
• Discuss pros and cons for combined cataract surgery and vitrectomy

Introduction
• A large portion of cataract surgery patients have coexisting retinal disease
  • Commonly Diabetic Retinopathy (DR), Epiretinal Membrane (ERM), Retinal Vein Occlusion (RVO), High Myopia and Age-Related Macular Degeneration (AMD)
  • Cataract surgery may be necessary in patients with retinal disease to better visualize the retina for medical and/or surgical management
  • Prior retinal surgery is an important consideration for cataract surgeons
  • Retinal disease influences the timing of surgery, technique and IOL selection

Informed Consent
• MANAGE EXPECTATIONS!!!
• Go beyond the basics
  • Important for the entire team including referring ODs, cataract surgeons and retinal specialists
  • Explain the anatomy and disease processes to the patient
  • Help patients understand BCVA
• Appropriate informed consent and managing patient expectations are KEY in the patient’s understanding of their potential and real-world outcome
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

Avoid “premium options” and monovision in these patients

Toric lenses may still be appropriate to reduce glasses burden in select patients

When in doubt → referral to a retina specialist for further evaluation

Coexisting Retinal Disease: AMD

Risk of progression from cataract surgery → historically controversial

Theoretically inflammatory factors following cataract surgery may exacerbate disease, but studies are inconclusive

AAO 2016 “…risk for worsening of preexisting AMD following cataract surgery is low.”

Coexisting Retinal Disease: Dry AMD

Patients with geographic atrophy and reduced BCVA can greatly benefit from cataract surgery

Increased light exposure and peripheral vision benefit

Long discussion may be necessary to help patient and family understand potential visual benefits

Coexisting Retinal Disease: Neovascular AMD

In patients receiving ongoing treatment for nAMD two main considerations:

1) Patient’s response to anti-VEGF

2) Date of most recent injection

Retinal specialist will want disease “under control” prior to cataract surgery

Recent studies show patients with persistent SRF are stable for surgery

Ideal timing for anti-VEGF injection is 1-2 weeks prior to cataract surgery

Coexisting Retinal Disease: Diabetes

Diabetics develop cataracts at a younger age

Ensure that cataract corresponds to degree to visual dysfunction otherwise further studies and referral to retina specialist are warranted

OCT → DME

FA → DME, PDR, and macular ischemia

In eyes with mild NPDR cataract surgery is less likely to cause progression

Some experts recommend earlier cataract extraction in this population

Blood sugar (hbgA1c) should be under control

Significant diabetic pathology should be treated prior to cataract surgery

Coexisting Retinal Disease: Diabetes

Patients with DME, PDR or severe NPDR should be evaluated by retinal specialist prior to cataract surgery

Fluorescein angiography may reveal PDR

Early initiation of PRP and/or anti-VEGF therapy can reduce risk of DR progression

FA will also assess macular perfusion status
Coexisting Retinal Disease: Diabetes

- Acrylic lenses are preferred → less likely to fog during vitrectomy
- Larger capsulotomy preferred for possible future PRP
- Peri-operative NSAIDs and steroids very important to control post-operative CME

Coexisting Retinal Disease: Retinal Vein Occlusion

- Patients with a history of RVO are 30x more likely to have post-op CME
- Risk exists with or without preoperative CME
- Lower threshold of blood-retina barrier breakdown
- Patients with pre-op RVO related CME should be managed in conjunction with retina specialist so that all treatment options are available
  - anti-VEGF, peri-ocular steroids, intravitreal steroids
- Patient with h/o RVO should be treated with peri-operative NSAIDs and steroid
  - Monitor closely in post-operative period with OCT

Coexisting Retinal Disease: Epiretinal Membrane

- “Blurred” vision vs “distorted” vision
- May help determine sequence of surgery
- Risk of potential post cataract surgery CME is increased in patients with ERM
  - Standard rate of CME following CE → 3-2%
  - Rate of following CE for patients with ERM → 6-15%
  - Recent study performed by VRS and presented at Retina Society 2018
    - Combined CE with PPV/MP compares favorably to the rate of CME in the literature
    - 3.5% CME in our group
    - Pre-operative leakage on FA testing is predictive of risk for CME
      - Pre-op STK reduced risk of CME (0% in our sub-group)

Avoiding Post-op CME

- If managed appropriately we can effectively reduce the risk of post-operative CME to near that of the regular population risk
- As discussed previously, pre-operative or intra-operative sub tenons Kenalog may be effective in reducing risk for post-op CME
- Recommended protocol:
  - In high-risk patients → Retina evaluation with FA to determine if STK is warranted
  - 3 days prior to surgery: Begin topical NSAID
  - Continue for 4-8 weeks post-op
  - Consider holding for 1 week post-op to avoid epitheliopathy in at-risk patients
  - POD1: Begin topical corticosteroid agent
  - Continue for at least one month and taper

Coexisting Retinal Disease: Peripheral Retinal Pathology

- Flap tears with or without symptoms should be treated with laser retinopexy
- Round retinal holes, lattice degeneration, white without pressure, and other peripheral retinal abnormalities are typically observed
  - Reports supporting prophylactic treatment of these pathologies are lacking
  - Retinal detachment after cataract surgery often occurs in areas of retinal tissue that previously appeared normal
  - Consultation and examination with a Retina specialist is recommended in patient with a h/o retinal detachment prior to cataract surgery

Technical Considerations in Cataract Surgery Following Vitrectomy

- Requires caution during phacoemulsification
  - Less scleral rigidity
  - Unstable zonules → fluctuations in anterior chamber depth
  - May lower bottle height and decrease aspiration
  - Experts suggest a low threshold for capsular tension ring
  - Higher risk of intraoperative miosis
  - If cataract develops quickly (weeks) following PPV → suspect posterior capsule instability
  - Careful hydrodissection and treat like a posterior polar cataract

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*Vitreoretinal Surgery, PA*
Pros: Combined Cataract and Vitrectomy Surgery

- Less cost to patient and health care system
- Faster visual recovery
- Increased patient satisfaction
- Improved access to the vitreous base
- More effective post-op tamponade

Cons: Combined Cataract and Vitrectomy Surgery

- Increased operating time
- Poor red reflex in cases with silicone oil or vitreous hemorrhage
- Corneal decompensation
- Cataract wound dehiscence
- Intraoperative miosis following cataract extraction
- IOL decentration
- Tamponade agents may exchange into the anterior chamber

Thank you!

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