

When to Remove a Cataract in the Setting of ACG

Advice for managing these challenging cases.

BY BARBARA SMIT, MD, PhD

Cataract surgery in patients with angle-closure glaucoma (ACG) or very narrow angles poses a unique set of challenges and risks. This article discusses the indications for cataract surgery in this setting, as well as the controversies and pearls for managing these potentially difficult cases.

WHEN TO CONSIDER CATARACT SURGERY

The decision to perform cataract surgery is straightforward when there are visually significant cataracts in combination with closed or occludable angles. Postoperatively, these patients will benefit from improved vision, deeper anterior chambers, and often a better IOP. Lens removal may also be indicated when an iridotomy has been insufficient to lower the IOP despite medical therapy due to the presence of peripheral anterior synechiae.¹ Concurrent cataract removal, IOL placement, and goniosynechialysis may also provide IOP control without the need for glaucoma filtering surgery.² These approaches have few long-term risks but do not preclude filtering surgery as a next step if needed.

It is important to differentiate the cause of the narrow or closed angles. Gonioscopy is necessary to distinguish primary versus secondary causes of ACG as well as the degree of synechial or chronic angle closure. Secondary causes of angle closure (neovascular, inflammatory, aqueous misdirection) have additional risks and considerations relative to managing cataracts.

Although laser peripheral iridotomy is the first-line treatment in most cases of acute ACG, some studies have suggested that primary phacoemulsification and IOL place-

ment may be an appropriate initial treatment. A prospective randomized trial by Lam et al³ demonstrated that early phacoemulsification was more effective in preventing IOP elevation after angle closure than laser peripheral iridotomy in eyes with acute ACG.

Phacoemulsification has been shown to result in a deeper anterior chamber and a lower IOP in eyes with narrow angles.⁴ In eyes with known synechial angle closure, the addition of goniosynechialysis has been shown to lead to a persistent improvement in IOP control.

TECHNICAL PEARLS

IOL Selection

Most patients with narrow or closed angles have eyes that are shorter than normal. The Hoffer Q and Holladay II formulas are particularly useful for IOL selection in eyes with an axial length of less than 22 mm. Corneal edema and surface irregularity in eyes with an elevated IOP and ACG may limit the surgeon's ability to obtain accurate corneal measurements. Data collected on a quiet fellow eye can be used to support the selection of an IOL for an inflamed eye with corneal abnormalities. The surgeon should discuss with the patient issues regarding the accuracy of IOL selection and possible resultant anisometropia.

A Shallow Anterior Chamber

Limited space in the anterior chamber increases the risk of damage to the corneal endothelium and iris prolapse. Use of a highly retentive viscoelastic such as Viscoat (Alcon Laboratories, Inc.) or Healon5 (Abbott Medical Optics Inc.) can help avoid iris prolapse as well as protect the corneal endothelium. Additionally, a long clear corneal incision with a more central entry along with a lower bottle height may



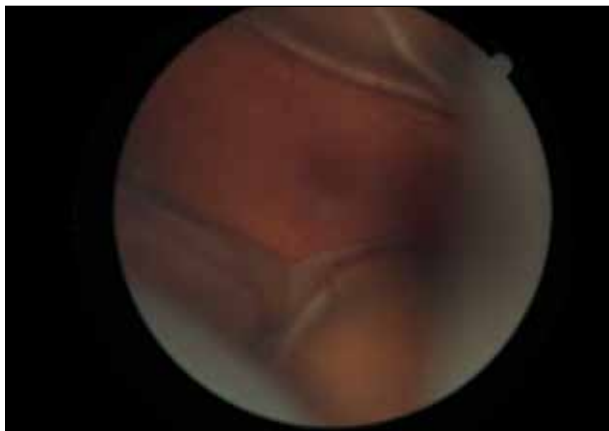


Figure 1. A suprachoroidal hemorrhage, a possible complication after cataract surgery on a nanophthalmic eye.

also reduce iris prolapse. The surgeon should eliminate any source of posterior pressure such as a tight lid speculum that may also shallow the anterior chamber. In eyes with an extremely shallow anterior chamber, a very limited vitrectomy without irrigation can make additional space in the anterior chamber.

The Pupil's Management

Iris atrophy and posterior synechiae are common in eyes with a history of ACG. Microforceps (eg Ahmed Micrograspers [MicroSurgical Technology]) can be useful to strip synechiae at the edge of the pupil and lift the iris where it adheres to the capsule. Atrophic irides also lack tone and may require pupil maintenance with a Malyugin Ring (MicroSurgical Technology) or pupil hooks.

Other Issues

Patients with a recent history of angle closure may be predisposed to marked postoperative inflammation and associated problems, including posterior synechiae formation or cystoid macular edema. Subconjunctival dexamethasone (0.2 mL of 10 mg/mL) and frequent administration of postoperative topical prednisolone should be used. Patients with nanophthalmos (an axial length < 20 mm and a thick sclera) are at particular risk for intra- and postoperative uveal effusions and malignant glaucoma (Figure 1). Patients should be monitored for these complications and treated with appropriate medical or surgical management (eg, cycloplegics, steroids, drainage).

Goniosynechialysis

Goniosynechialysis at the time of cataract removal can be easily accomplished in patients with known synechial closure and an elevated IOP. After placing the IOL, I inject acetylcholine (Miochol-E; Bausch + Lomb)



Figure 2. An iris dialysis after goniosynechialysis.

to improve access and visualization of the angle. The angle can be viewed with gonioscopy or an intraocular endoscope. Peripheral anterior synechiae can be lysed by viscodissection, with a blunt cyclodialysis spatula, or by pulling the iris centrally with microforceps. I find that microforceps are the most effective instrument for this purpose, although overly vigorous traction can cause an iris dialysis (Figure 2). After opening as much of the angle as I can easily access through the preexisting corneal incision, remove the residual viscoelastic and any blood via irrigation and aspiration.

CONCLUSION

Lens extraction and IOL placement can improve and help maintain visual function in patients with narrow or closed angles by removing a cataract, improving aqueous egress and reducing IOP, and decreasing refractive error. Although these surgical cases can be challenging, awareness of the potential pitfalls and attention to detail can reduce complications and result in great outcomes for these patients. ■

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