

Incisional Glaucoma Surgery in ACG

Surgical intervention is challenging, and planning must take into account several factors.

BY MARCOS REYES, MD

As with many aspects of glaucoma management, timing is everything in the diagnosis and surgical treatment of angle-closure glaucoma (ACG). I have seen the differences in the optic nerve and cornea of patients who were treated quickly versus those whose treatment was delayed¹; as a result, my attitude is, the sooner things are under control, the better.

INDICATIONS

The two most common forms of ACG are acute (AACG) and chronic (CACG). Other forms are discussed elsewhere in this issue of *Glaucoma Today*. In my opinion, the best incisional glaucoma surgery for AACG is cataract surgery plus or minus goniosynechiolysis²⁻⁵ soon after an acute attack has been controlled (ie, status post laser peripheral iridotomy, iridoplasty if needed, and medication). There is sufficient evidence to show that phacoemulsification only will significantly lower IOP.⁶⁻⁹ If my own patients demonstrate any difficulty with compliance or follow-up, I recommend cataract surgery to minimize the long-term sequelae of peripheral anterior synechiae (PAS) and elevated IOP.

For CACG, the most common scenarios for which incisional glaucoma surgery is needed are glaucoma resulting from (1) long-term, subacute narrowing of the angle, (2) delayed treatment of an acute attack of ACG, and (3) continued narrowing of the angle after laser peripheral iridotomy. In all of these scenarios, enough PAS have developed to overcome all effects of topical therapy and, in some cases, even systemic therapy, thereby necessitating surgical intervention.

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CONSIDERATIONS

When considering incisional surgery for CACG, I first assess how serious the glaucoma is (ie, is it medically controlled or uncontrolled and to what degree?). Next, I take into account whether or not the patient still has a crystalline lens, which he or she often does.

Although trabeculectomy alone can successfully treat ACG,¹⁰ the procedure carries some risk. As mentioned earlier, phacoemulsification cataract surgery alone can substantially reduce the IOP, as demonstrated by Tham et al in two separate studies.^{7,8} In the first, the investigators compared phacoemulsification alone to combined phacoemulsification and trabeculectomy in patients with medically controlled CACG. The second study compared phacoemulsification alone to combined phacoemulsification and trabeculectomy in patients with medically uncontrolled CACG. In both studies, the combined procedure achieved a lower IOP and a greater reduction in the number of glaucoma medications that patients required but at the expense of higher complication rates.⁹ Given these results, phacoemulsification alone or in combination with tra-

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beculectomy is arguably a reasonable approach to the initial surgical treatment of ACG. The decision should be based on the individual patient, the severity of the glaucoma, and the surgeon's preference and comfort level.

The IOP results of phacoemulsification only may be further improved with goniosynechiolysis²⁻⁵ if the PAS are less than 12 months old. Phacoemulsification deepens the anterior chamber, and goniosynechiolysis opens the angle. The risks of the latter procedure include intraoperative hemorrhage, iridodialysis, and possible cyclodialysis.

The PAS in both AACG and CACG limit ophthalmologists' options for filtration surgery to trabeculectomy (and its variations) or glaucoma drainage implants. PAS are a contraindication to canaloplasty, and I am not familiar with the efficacy of ab interno trabeculectomy (Trabectome; NeoMedix Corporation) in the presence of PAS. I think the latter might be a possibility if the PAS are confined to the nasal sector, but I cannot find any literature to support this theory. It will be interesting to see where the iStent Trabecular Micro-Bypass Stent (Glaukos Corporation) fits into surgeons' armamentarium for treating these cases.

CHALLENGES

Cataract surgery can be difficult in eyes with a shallow chamber. Surgeons have used different modalities to shrink the vitreous, including the preoperative instillation of mannitol, a Honan balloon, scleral depression, and dry vitrectomy. All of these methods create more anterior chamber space. When I think a combined cataract surgery and trabeculectomy is needed, I generally tie the flap sutures tighter than usual to avoid early postoperative complications that are generally thought to be more common in ACG, including a shallow anterior chamber, choroidals, and/or aqueous misdirection syndrome.

Whichever procedure(s) is chosen, it is important that the patient realize that ACG presents a greater challenge than other forms of the disease and that each situation merits an individualized approach. ■

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