

PHACO-GONIOSYNECHIALYSIS: TAP, SWEEP, AND TWEEP

BY JONATHAN S. MYERS, MD



Angle-closure glaucomas (ACGs) can be very challenging to manage: filtering surgery in ACG is associated with an increased risk of shallow chambers and malignant glaucoma. Recent studies, however, suggest that, in many angle-closure eyes, cataract surgery alone or combined with goniosynechialysis (GSL) may be as effective as

glaucoma surgery but with fewer complications.¹

For decades, the possibility of restoring function to a closed angle has driven surgery to release angle synechiae.² The factors that determine when synechial release will improve pressure control have not been proven, but they could include the duration of angle closure, the extent of synechiae, the function of the proximal and distal outflow systems prior to synechial closure (eg, uveitic glaucoma can lead to loss of outflow independent of synechiae formation), secondary changes to the trabecular meshwork and Schlemm canal following closure, and so on.

CATARACT SURGERY AND IOP

In acute ACG, cataract surgery has been shown to help IOP control with and without GSL. Thus, in that setting, the additive efficacy of synechialysis in restoring physiologic outflow is uncertain. Long-term studies correlating outcomes to surgical angle opening are lacking. Case series have shown that combined cataract surgery and GSL can be effective in reducing IOP and medication use in ACG,³ with perhaps a greater effect in eyes with prior acute angle closure⁴ and a shorter interval between angle closure and surgery.⁵

Recent innovations in glaucoma surgery have focused on the structures of the anterior chamber angle as well. Most microinvasive glaucoma surgery (MIGS) procedures are intended for open-angle glaucomas, but attention to angle-closure issues is increasing as well. Some surgeons have performed GSL to allow the completion of MIGS procedures instead of trabeculectomy or tube shunt. The release of synechiae opens the angle, allowing the placement of trabecular stents or suprachoroidal shunts. Studies of the

efficacy of either of these approaches in acute or chronic angle closure are lacking.

GENTLE GSL

If one is to perform GSL, a gentle and controlled technique to minimize further damage and bleeding would be preferred. In a recent video (see *Watch It Now*), Dr. Iyer and colleagues demonstrate several approaches to gently release anterior synechiae. Some synechiae will release easily with a tap; more extensive synechiae require a sweep or the combination, called the “tweep.” In some cases, gentle but persistent traction with a 23-gauge microforceps can be a very effective and controlled approach. Although GSL may be performed without gonioscopy, visualization through gonioscopes like those used for MIGS procedures helps to minimize the potential for iris tears, iridodialysis, and bleeding. Given that, in many cases, the impact of GSL is unclear. Thus, generally erring on the side of caution would seem prudent, because controlling bleeds and repairing iris tears put stress on the eye and surgeon.

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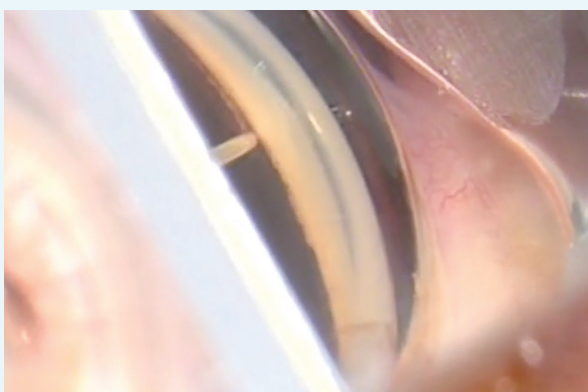
AT A GLANCE

- In many angle-closure eyes, cataract surgery alone or combined with goniosynechialysis may be as effective as glaucoma surgery but with fewer complications.
- Some synechiae will release easily with a tap. More extensive synechiae require a sweep or the combination that some have called the “tweep.”
- Mastering the goniosynechialysis techniques demonstrated in this video, including intraoperative gonioscopy and fine movements with instruments in the angle, will help surgeons perform current and future microinvasive glaucoma surgery procedures.

WATCH IT NOW

Jayant V. Iyer, MD, showcases the surgical management of peripheral anterior synechiae using various gonioscopy lenses and shows a variety of cases for which phaco-goniosynechialysis was performed using the “tap”, the “sweep,” and the “tweep” techniques.

bit.ly/gt1116_eyetube



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It has been suggested that synechiae of less than 6 months' duration are more likely to yield gains when released. Given that GSL is a relatively infrequent procedure, and considering the variety of circumstances that lead to the formation of anterior synechiae, the design and completion of definitive studies on the role of GSL for managing the various chronic ACGs will prove challenging. One small prospective randomized trial failed to show a significant difference between phacoemulsification and phacoemulsification with GSL in well-controlled chronic ACG, although the IOP reduction was slightly greater in the phacoemulsification with GSL group.⁶ On a separate but related note, the recent Effectiveness of Early Lens Extraction With Intraocular Lens Implantation for the Treatment of Primary Angle-Closure Glaucoma (EAGLE) trial has shown that cataract surgery has better long-term outcomes than iridotomy alone in primary ACG.⁷ For now, clinical judgment to assess each patient's individual risks and alternatives will have to suffice.

VIDEO TECHNIQUES

Mastering the techniques demonstrated in this video, including intraoperative gonioscopy and fine movements with instruments in the angle, will help surgeons perform current and future MIGS procedures, in my opinion. The iStent Trabecular Micro-Bypass Stent (Glaukos), CyPass Micro-Stent (Alcon), Trabectome (NeoMedix), Kahook Dual Blade (New World Medical), gonioscopy-assisted transluminal trabeculotomy, iStent Supra (Glaukos; not FDA approved), and Xen (Allergan; not FDA approved) procedures all require similar skills. ■

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