



STENTING VERSUS GONIOTOMY

Two treatment approaches go head to head in one hypothetical case.

BY STEVEN R. SARKISIAN JR, MD; AND DAVINDER S. GROVER, MD, MPH

An 80-year-old woman presents with stable mild visual field loss and an IOP of 19 mm Hg. She is on two well-tolerated medications. Since her IOP was lowered from the maximum of 26 mm Hg, there has been no progression. The patient has visually significant cataracts, and she takes a daily baby aspirin. She has not had prior selective laser trabeculoplasty. The angles are open to the ciliary body band without any pathology in the angle. The patient wishes to reduce her medication burden as safely as possible.

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A CASE FOR STENTING

BY STEVEN R. SARKISIAN JR, MD

Cataract surgery is a refractive procedure. Achieving the best visual outcome with the fastest visual recovery should always be the first priority, even in patients with glaucoma.

The data for ab interno trabecular microbypass stenting combined with phacoemulsification clearly show a greater reduction in medications than phacoemulsification alone.^{1,2} Since the FDA's approval of these trabecular microbypass stents, I believe that *not* performing microinvasive glaucoma surgery (MIGS) in a case like this is a lost opportunity and is also inappropriate, considering the patient's stated goals.

In this scenario, I believe the safest way to lower this patient's IOP is with the iStent or iStent inject (Glaukos). (I have essentially ceased implantation of the first-generation iStent in favor of the second-generation iStent inject and its improved efficacy.)

I typically do not suggest that patients cease aspirin use in routine cataract cases, and the same holds true if I am using trabecular microbypass stents. However, in this case, any trabecular meshwork-destroying MIGS procedure would necessitate the aspirin being stopped prior to surgery due to

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A CASE FOR EXCISIONAL GONIOTOMY

BY DAVINDER S. GROVER, MD, MPH

In this case, it would be inappropriate not to address the patient's glaucoma at the time of cataract surgery. As has been well documented and studied, patients with glaucoma are at an increased risk of IOP spike in the immediate postoperative period. Given that this patient is on several medications and has actual visual field loss, I think excisional goniotomy combined with cataract surgery would be the best approach, as it offers the chance to improve the patient's vision, improve her IOP, and decrease her dependence on glaucoma medications.

Excisional goniotomy provides mild to moderate IOP lowering while simultaneously decreasing dependence on glaucoma medications in the safest manner possible. Several published studies, as well as data from our practice, show that excisional goniotomy combined with cataract surgery tends to be quite successful in patients with this stage of glaucoma, with a high likelihood of decreasing IOP by 2 to 3 mm Hg and allowing discontinuation of one or even two medications.¹⁻⁴

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In this case, excisional goniotomy would be safely performed using topical anesthesia and would allow the patient to resume normal activity within 1 to 2 weeks. The postoperative course would not deviate dramatically from that of a standard cataract surgery, with the exception that I would likely treat the patient with topical steroids for a few weeks longer.

Recently, Sieck et al¹ reported 12-month retrospective outcomes in a group of patients whose cases were similar to this one. They reported that, at 1 year, mean IOP decreased from 16.7 mm Hg to 13.8 mm Hg in the phaco/goniotomy group, with a 0.4 decrease in mean number of glaucoma medications. Similarly, we evalu-

ated retrospective outcomes in eyes at our practice, and we found that, at 12 months, mean IOP decreased from 17.1 mm Hg on 2.4 glaucoma medications to 14.7 mm Hg on 1.0 medication in the phaco/goniotomy group.⁴

In this case, I would recommend that the patient stop her aspirin use 1 week prior to surgery if possible. I would make sure that she could limit her activity for that week and sleep with her head above her heart to speed visual recovery and minimize the risk of blood reflux. Intraoperatively, I would use the amount of blood reflux and the quality of the episcleral venous fluid wave to help gauge and predict the likelihood of a successful outcome (Figures 1 and 2).⁵



Figure 1. An intraoperative view of goniotomy with the Kahook Dual Blade (New World Medical).

1. Sieck EG, Epstein RS, Kennedy JB, et al. Outcomes of Kahook Dual Blade goniotomy with and without phacoemulsification cataract extraction. *Ophthalmol Glaucoma*. 2018;1:75-81.
2. Dorairaj SK, Kahook MY, Williamson BK, et al. A multicenter retrospective comparison of goniotomy versus trabecular bypass device implantation in glaucoma patients undergoing cataract extraction. *Clin Ophthalmol*. 2018;12:791-797.
3. Dorairaj SK, Seibold LK, Radcliffe NM, et al. 12-Month outcomes of goniotomy performed using the Kahook Dual Blade combined with cataract surgery in eyes with medically treated glaucoma. *Adv Ther*. 2018;35(9):1460-1469.
4. Kornmann HL, Fellman RL, Grover DS, et al. Early results of the Kahook Dual Blade, a novel device for the treatment of glaucoma. Poster presented at: the 2017 AAO Annual Meeting. November 2017; New Orleans, LA.
5. Fellman RL, Feuer WJ, Grover DS. Episcleral venous fluid wave correlates with Trabectome outcomes: intraoperative evaluation of the trabecular outflow pathway. *Ophthalmology*. 2015;122(12):2385-2391.

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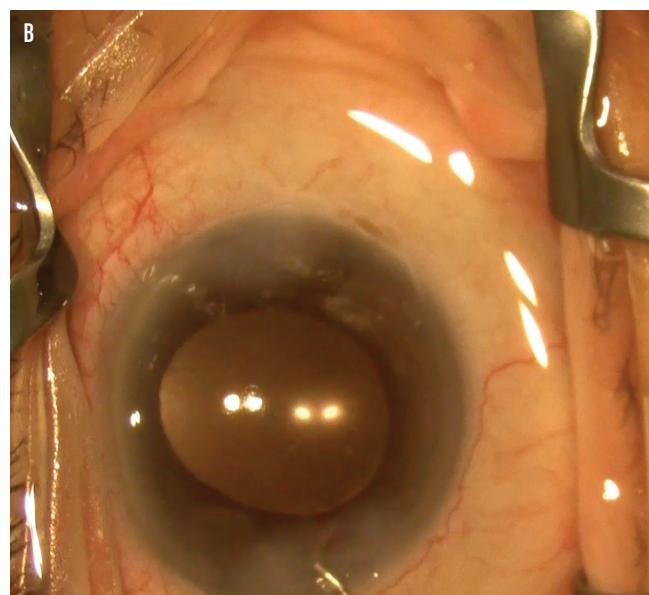
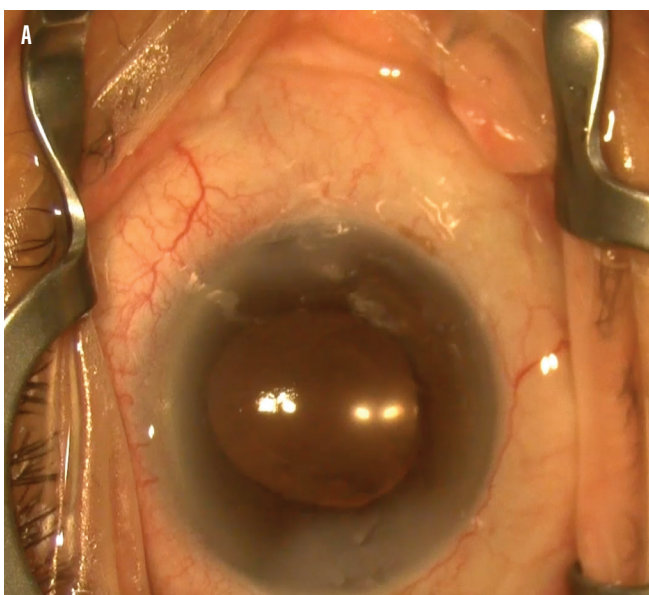


Figure 2. An episcleral venous fluid wave following a 4-to-5-clock hour goniotomy, showing (A) the normal episcleral vasculature with the IOP at a physiologic state and (B) an episcleral fluid wave indicative of balanced salt solution blanching the nasal vasculature.

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-STEVEN R. SARKISIAN JR, MD



"GIVEN THAT THE PATIENT IS ON SEVERAL MEDICATIONS AND HAS ACTUAL VISUAL FIELD LOSS, I THINK EXCISIONAL GONIOTOMY WOULD BE THE BEST SURGERY."

- DAVINDER S. GROVER, MD, MPH

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the risk of hyphema. Moreover, with a trabecular microbypass stent, I tell patients that there is essentially no additional risk compared with cataract surgery alone.

Care should be taken to avoid a steroid response in all glaucoma patients undergoing cataract surgery. I prescribe fluorometholone gel twice daily or difluprednate once daily for 3 weeks, stopping it early if IOP increases. Finally, trabecular microbypass stenting has no effect on postoperative refractive error, and I routinely use this approach in patients receiving extended depth of focus or multifocal IOLs.

This 80-year-old patient with cataracts should be able to meet her goals of reduced medications and improved vision if monitored carefully. I would keep this patient on at least a prostaglandin analogue during the early

postoperative period to prevent early IOP spikes and to prioritize visual recovery. If the IOP goals are not fully met, selective laser trabeculoplasty can be performed, but I would wait 4 months or so for the eye to stabilize. ■

1. Malvankar-Mehta S, Ioannidis Y, Chen YN, et al. iStent with phacoemulsification versus phacoemulsification alone for patients with glaucoma and cataract. *PLoS One*. 2015;10(7):e0131770.
2. Samuelson TW. Prospective, randomized, multicenter clinical investigation of the Glaukos iStent inject. Paper presented at: the ASCRS Annual Meeting. April 13-17, 2018; Washington, DC.

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