

# MIGS AND THE COMPREHENSIVE OPHTHALMOLOGIST



Master these minimally invasive procedures to address glaucoma at the time of cataract surgery.

BY MICHAEL PATTERSON, DO

**T**hanks to ophthalmologist innovators such as Iqbal Ike K. Ahmed, MD, FRCSC, microinvasive glaucoma surgery (MIGS) has become the most disruptive technology—or, more precisely, group of technologies—in eye care since phacoemulsification. Any ophthalmologist can perform MIGS procedures—even surgeons without access to an expensive femtosecond laser. The advent of MIGS has truly revolutionized glaucoma care for the comprehensive ophthalmologist. In my practice, Eye Centers of Tennessee, we have performed MIGS procedures since the term was coined. Many patients we see require glaucoma treatment at the time of cataract surgery; with MIGS, we are set up perfectly to address both issues simultaneously.

## GETTING STARTED

**Learn by doing.** It is unlikely that new ophthalmologists will be adequately trained to use every MIGS device while in residency, so it is therefore necessary to learn by doing in practice. Even though it can be intimidating to use a surgical device for the first time, one key to success is to become mentally prepared. Intraoperative gonioscopy can help the surgeon visualize appropriate landmarks in the eye before he or she performs a MIGS procedure.

**Choose your patients wisely.** Appropriate patient selection is another key to success. For a safe and effective outcome with MIGS, a healthy angle is required. Additionally, patients who have preexisting conditions that prevent them from changing positions in the OR may not be good candidates for MIGS because the surgeon cannot

operate at the necessary angle required by the procedure.

**Aim for great outcomes.** Do not force patients into a new procedure simply to become an early adopter of that procedure. When you adopt a new procedure, it is crucial that you achieve great outcomes. This helps build your personal reputation as well as the reputation of the device. Poor outcomes do the opposite.

## IMPLEMENTING MIGS

My recommendation for successful implementation of MIGS into your practice is to take on one technology at a time. (Your staff will thank you.) Do not attempt to learn four different surgeries all at once. The amount of preoperative preparation required to master MIGS procedures can be tremendous. When I began implementing new procedures in my practice, I made mistakes that I later wished I could reverse. One of those mistakes was pushing my staff members to learn the ins and outs of these new technologies too quickly. In hindsight, I should have slowed down the learning process for the benefit of everyone involved.

It is also important to make sure your patients have a good understanding of their options with regard to medications and procedures. With my patients, I first discuss the risks and benefits of glaucoma drops. Drops can be expensive for the patient; toxic to the surface of the eye; and, over time, can destroy the conjunctival epithelial cells, leading to poor outcomes if and when advanced glaucoma surgery is needed. I then discuss the risks and benefits of selective laser trabeculoplasty, which I

believe is a more effective and less disruptive option for a patient than drops. Finally, I discuss the risks and benefits of whichever MIGS procedure I think would be appropriate for the patient.

## PERFORMING SURGERY

When cataract surgery patients have concomitant glaucoma, I like to tell them that we want to kill two birds with one stone. Because we are already performing surgery, and numerous studies have shown that there is no increased risk when MIGS is added at the time of cataract surgery, most of my patients see this as a win-win (see also *Where Does Endoscopic Cyclophotocoagulation Fit In?*).

However, I tell them, there is one caveat: This will not get you off drops, but it will hopefully reduce your medication burden. In this regard, it is important to underpromise and overdeliver. The surgical procedure will hopefully mitigate any IOP rises that occur.

I also use this analogy with patients: *“Your sink drain is clogged, but, unlike your sink, your eye has a lid. This, in effect, becomes a percolator and causes IOP to slowly rise. To prevent this, I am going to create another drain in your sink. This will allow the water to leave your eye when the pressure tries to rise. Your optic nerve will no longer be subject to these pressure spikes.”*

This analogy usually helps patients understand what I am about to do, and it makes them more confident in the surgical procedure. I also tell patients that typically their visual acuity will be dramatically reduced in the first week postoperative. Sometimes I see no problems, and BCVA is 20/20 on postoperative day 1. But, in case I encounter some intraocular hemorrhaging during surgery,

## WHERE DOES ENDOSCOPIC CYCLOPHOTOCOAGULATION FIT IN?

In its most simplistic terms, glaucoma is elevated IOP that damages the optic nerve and causes permanent vision loss. Currently, we have only two ways to lower IOP: (1) get more fluid to leave the eye, or (2) reduce the amount of fluid entering the eye. There are many options for increasing fluid outflow from the anterior chamber; however, cyclophotocoagulation of the ciliary processes is currently the only surgical option for decreasing aqueous production and secretion. Just as we combine pharmaceuticals to impact inflow and outflow, I believe that combining microinvasive glaucoma surgery (MIGS) with endoscopic cyclophotocoagulation (ECP) to reduce both inflow and outflow can be efficient.

Although there are some exceptions, I find that the results for most of my patients with mild to moderate glaucoma who are receiving a MIGS outflow treatment can be further enhanced by combining MIGS with ECP to reduce inflow. I typically perform cataract surgery first, followed by either placement of an iStent (Glaukos) or goniotomy with a Kahook Dual Blade (KDB; New World Medical). Following this, I inflate the ciliary sulcus with an OVD until the iris is pushed toward the cornea. When appropriate, I can then treat every anterior ciliary process

with ECP using the Endo Optiks laser and endoscopic system (Beaver-Visitec International). If I were to use a pars plana approach, which improves access to the entire length of the ciliary process, I would apply laser to every third or fourth ciliary process. I titrate the laser power with the footpedal so that I achieve whitening and shrinking of the processes without causing them to pop. I tend to perform ECP last because the procedure is occasionally uncomfortable for the patient. Intracameral lidocaine underneath the iris helps alleviate discomfort.

The chance of a complication from ECP is low; however, if the laser inadvertently hits the iris, it can cause increased postoperative inflammation. By using a low power setting and treating only the anterior portion of the ciliary processes, I have found that my patients can stick with the standard postcataract pain and inflammation regimen. I do not see additional trauma to the eye. If a patient has glaucoma but does not need cataract surgery, I often perform goniotomy with the KDB and combine it with ECP.

In my experience, I can lower IOP 2 to 3 mm Hg with cataract surgery, 2 to 3 mm Hg with the MIGS procedure, and then an additional 2 to 3 mm Hg with ECP.

I like to temper expectations about the postoperative course of recovery.

### CONCLUSION

MIGS procedures can be challenging, but for most comprehensive and anterior segment surgeons they are

easy to learn with proper training and education. These novel procedures offer a safe and effective means to help your patients reduce their glaucoma medication burden. You do not want to miss out on this chance to help your patients. ■

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### MICHAEL PATTERSON, DO

- Eye Centers of Tennessee, Crossville and Cookeville
- Member, *CRST* Editorial Advisory Board
- michaelp@ecotn.com
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