

A NEW MIGS PROCEDURE FOR COMPREHENSIVE GLAUCOMA TREATMENT

ABiC preserves tissue and does not require the permanent placement of an implant in the eye.

BY MARK J. GALLARDO, MD, AND MAHMOUD KHAIMI, MD



Performed as either a standalone procedure or as an adjunct to cataract surgery, ABiC (Ellex) is a new microinvasive glaucoma surgery (MIGS) procedure that can comprehensively restore the natural outflow pathways for aqueous in your glaucoma patients' eyes.

Clinically proven, ABiC is based on the same dilation principles of traditional canaloplasty but via a simplified and much faster surgical approach. It is also the only MIGS procedure that successfully and comprehensively addresses all aspects of potential outflow resistance.

1. HOW DOES ABiC COMPARE TO TRADITIONAL CANALOPLASTY?

Mahmoud Khaimi, MD: ABiC offers a subtle but significant refinement of traditional (ab externo) canaloplasty. ABiC follows the same dilation principles of the traditional technique, where the precisely controlled delivery of Healon/Healon GV (Abbott Medical Optics) during withdrawal of the iTrack microcatheter (Ellex) allows the compressed tissue planes of the trabecular meshwork to separate, and any herniated inner wall tissue to withdraw from the collector channels. ABiC offers a much more simplified approach compared to traditional canaloplasty, however, and does not employ a scleral lake or Descemet window. It also eschews the tensioning suture used in the ab externo technique. Despite this, the preliminary 12-month results of an ABiC clinical trial have demonstrated that the ab interno technique achieves similar reductions in IOP as well as medication burden compared to traditional canaloplasty.

Mark J. Gallardo, MD: With ABiC we surgeons can obtain the same therapeutic effect as traditional canaloplasty, but the

incisions are much smaller, there is much less manipulation of the eye, and we are not manipulating the conjunctiva. Additionally, there is a much faster recovery of vision. In fact, many of my patients have the same vision on postoperative day 1 as they do the day before surgery. Put simply, ABiC gives us everything we need from traditional canaloplasty, but with the same safety profile as other MIGS procedures.

2. HOW DOES ABiC COMPARE TO THE OTHER MIGS PROCEDURES?

Dr. Khaimi: In order to better understand what makes ABiC so unique, it helps to compare it to the other MIGS devices available on the market today. The iStent Trabecular Micro Bypass (Glaukos), for example, works by placing a stent in one part of the drainage system. The aim is to place the stent adjacent to an open collector channel. This stent essentially acts as a trabecular microbypass by allowing aqueous humor to flow directly from the anterior chamber into Schlemm canal, thus circumventing the trabecular meshwork. However, the maximal site of resistance, while thought to be strongest in the juxtacanalicular trabecular meshwork, has been shown to be variable in different individuals.

Another important distinction of ABiC is that it does not leave behind a physical implant or device in the eye. Unlike the AqueSys subconjunctival implant (AqueSys), which is placed into the subconjunctival space to create a filtering bleb, with ABiC, we are simply viscodilating the drainage system. Patients love the idea that they will not receive an implant. The lack of an implant also ensures a more simplified postoperative course, along with a reduced risk of possible complications.

Dr. Gallardo: I was an early adopter of MIGS procedures; I have experience with the iStent, endoscopic cyclophotocoagulation, and trabecular ablative procedures. Rather than trying to

THE ABiC DIFFERENCE

ABiC is the only MIGS procedure that successfully and comprehensively addresses all aspects of potential aqueous outflow resistance. Other MIGS procedures lower IOP by addressing different aspects of (rather than all aspects of) the ocular outflow system, or simply bypass it.

	Collector Channels	Trabecular Meshwork	Schlemm Canal
ABiC	✓	✓	✓
iStent		✓	
Trabectome		✓	
Hydrus			✓
CyPass			✓
AqueSys		✓	

mechanically change or bypass the pathway of aqueous outflow, ABiC, along with its predecessor, canaloplasty, acts to restore the natural outflow process. Indeed, it is this restorative approach that sets ABiC apart from the other MIGS devices, which treat focal areas only.

3. WHAT ARE SOME OF THE KEY BENEFITS OF ABiC?

Dr. Khaimi: In terms of minimally invasive procedures, you cannot get much better than ABiC. This ab interno technique has taken traditional canaloplasty and made it even less invasive. For example, we do not need to manipulate conjunctiva. The procedure is performed through a 1.8-mm temporal clear corneal wound, after which we expose Schlemm canal from inside the eye.

Dr. Gallardo: With ABiC, we do not need to implant a stent, nor do we need to permanently destroy tissue. Essentially, we are leaving the normal architecture in place. Ablating or removing tissue in the trabecular meshwork interferes with the natural system, which plays a crucial role in preventing the reflux of blood from the episcleral venous system into the anterior chamber. Interfering with this system may also be the cause of recurrent hyphemas, which have been noted with some of the MIGS procedures and entail the ablation of the trabecular meshwork. ABiC overcomes these challenges, using the clinical benefits of viscodilation to restore the eye’s natural outflow system.

4. ABiC IS DESCRIBED AS A “COMPREHENSIVE” MIGS. WHAT DOES THIS MEAN?

Dr. Khaimi: Unlike other MIGS procedures, which simply target one or two aspects of the outflow system, ABiC targets all

BENEFITS OF ABiC AT A GLANCE

- Comprehensive: treats trabecular meshwork, Schlemm canal, and collector channels
- Restores natural outflow pathways with minimal tissue trauma
- No permanent implant or stent
- On label—patient does not have to pay additionally out of pocket
- Patient selection criteria are similar to current MIGS procedures

aspects of the outflow system. That is, the trabecular meshwork, Schlemm canal, and the collector channels. This is an important distinction of the procedure—especially considering that it is not always understood where the point of maximum resistance lies. It therefore makes sense to remove the guesswork and apply a procedure that comprehensively addresses the entire outflow system. Indeed, an exciting aspect of ABiC from the physician’s point of view is that, when you withdraw the catheter and viscodilate, you can see that the viscoelastic material flows through the venous system—evidence that we are treating the drainage system in a comprehensive manner.

Dr. Gallardo: ABiC is the only currently available glaucoma procedure to address blockages in the collector channels. Studies undertaken in human primary open-angle glaucoma eyes by Haiyan Gong, MD, PhD, from the University of Boston have shown that many of the collector channels may be blocked with herniated trabecular meshwork tissue at 0 mm Hg, and they become progressively worse as IOP rises. Cannulating the whole of Schlemm canal with ABiC via a process of 360° viscodilation, may “pop” open these herniations and enable full access to collector channel ostia for the egressing aqueous. In the case of other MIGS procedures, where only a segment of Schlemm canal is addressed, or where the trabecular meshwork is targeted in isolation, any herniated tissue would most likely prevent improved outflow. ■

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