

REDUCING THE MEDICATION BURDEN IN CONTROLLED GLAUCOMA

ABiC is effective at reducing medication burden in patients with controlled open-angle glaucoma while maintaining IOP.

BY MARK J. GALLARDO, MD



Over the past 3 years, I have incorporated a new procedure called ab interno canaloplasty (ABiC; Ellex) into my surgical practice. A comprehensive, microinvasive glaucoma surgery (MIGS) procedure, ABiC offers the same benefits of circumferential viscodilation of the canal and distal drainage system provided by traditional ab externo canaloplasty, but via a minimally invasive ab interno approach. ABiC is recommended early in the disease process; thus the primary indication is for patients with mild to moderate glaucoma.

The most defining aspect of ABiC is its comprehensive approach. Rather than trying to mechanically change or bypass the pathway of aqueous outflow, ABiC acts to

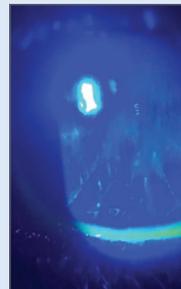
Considering that it is not always understood where the point of maximum resistance lies, it makes sense to apply a procedure that comprehensively addresses the entire outflow system.

restore the natural outflow process by targeting all 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

CASE STUDY: CONTROLLED GLAUCOMA

A 57-year-old woman presented with controlled open-angle glaucoma, an IOP of 13 mm Hg, and 20/40 BCVA. Her slit-lamp examination revealed she was pseudophakic in both eyes. A dilated fundus examination revealed a cup-to-disc ratio of 0.65 in both eyes. Visual field testing confirmed the presence of a nasal step that has been stable for 3 years. The patient's ocular medications included latanoprost, timolol, dorzolamide, artificial tears, and cyclosporine. She had an allergy to brimonidine. Her ocular history included severe dry eye disease/ocular surface disease and previous selective laser trabeculoplasty 4 months ago. **Would you maintain the current treatment, repeat selective laser trabeculoplasty, or perform a filtration procedure?**

Practicing in the southwest desert, I am perpetually grappling with treating glaucoma with topical therapy that almost always exacerbates the surface disease seen in dry eye disease. In this particular patient, I have been successful at controlling glaucoma, but we have to ask ourselves: Is this the best we can do? Is pressure control and maintenance of visual field our only objective? Or, is our objective not only to maintain but improve a patient's quality of life? This particular patient suffered from all of the symptoms of severe ocular surface disease—photophobia, epiphora, blurred vision, foreign body sensation, and tired eyes. In the past, I would likely have encouraged the patient to continue using her medications, because



- 57 y/o HF
- BCVA: 20/40
- Intraocular Pressure: 13 mm Hg OU
- SLE: pseudophakia OU
- DFE: cup-to-disc ratio: 0.65 OU
- VF: nasal step—stable x 3 years
- Meds: latanoprost, timolol, dorzolamide, tears, cyclosporine
- Allergies: brimonidine
- POH: severe dry eye/ocular surface disease, previous SLT 4 months ago

Figure. Slit-lamp photo exhibiting diffuse punctate epithelial erosions of patient with a history of ocular surface disease.

we achieved our goal of maintaining her optic nerve structure and function. Although filtration surgery could have been an option, surface changes associated with blebs might have exacerbated her symptoms of her dry eye disease, so I would have been very reluctant to have even offered such a procedure. With ABiC, I now have the option of performing a minimally invasive and, most importantly, blebless procedure that can reduce the need for medications and, again, maintain IOP.

In this example, I have been successful at removing the need for glaucoma medications; this has improved her surface epithelium, which, in turn, has led to improved vision and a reduction of her symptoms. I have not only been able to control her glaucoma, but I have now improved her quality of life.

TABLE. MILD TO MODERATE OPEN-ANGLE GLAUCOMA—CONTROLLED

| Exam | n | Mean IOP, mm Hg | Mean Medications | Adverse Events | Treatment Failure |
|-----------|----|-----------------|------------------|----------------|-------------------|
| Baseline | 30 | 13.97 ±2.28 | 2.50 ±0.78 | N/A | N/A |
| 3 months | 27 | 13.37 ±2.42 | 0.44 ±0.80 | None | None |
| 6 months | 25 | 13.40 ±3.44 | 0.72 ±1.06 | None | None |
| 12 months | 18 | 13.33 ±1.88 | 0.56 ± 0.86 | None | None |

apply a procedure that comprehensively addresses the entire outflow system.

Another hallmark of ABiC is that it does not involve a permanent implant or stent. Not only does this offer the potential for a more simplified postoperative course, along with a reduced risk of possible complications, but it is also well accepted by patients.

A CHANGE IN APPROACH

I used to approach the surgical management of glaucoma with the mantra: get the pressure down at any cost. Although filtration procedures are still widely needed, they are not always needed. We no longer have this one-size-fits-all approach and are now tailoring our treatment to the individual patient. If medical therapy failed, patients were destined for a filter and all of the ramifications that the procedure carries. Furthermore, I typically only performed such a dramatic procedure in patients with uncontrolled IOP on maximum therapy. I would rarely, if ever, offer a filter to patients whose IOP or disease were well controlled. But with MIGS procedures, my approach has drastically changed during the past 5 years.

I used to approach the surgical management of glaucoma with the mantra: get the pressure down at any cost. With MIGS procedures, my approach has drastically changed during the past 5 years.

ABiC has been shown to effectively lower the medication burden in patients with controlled open-angle glaucoma (OAG) while maintaining IOP. The procedure is effective as a standalone or an adjunct to cataract extraction, and it can be performed in phakic and pseudophakic patients.

STUDY RESULTS

I took part in a 228-eye study that included a consecutive case series of 65 eyes with mild to moderate OAG.¹

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Patients underwent standalone ABiC or combined phacoemulsification/ABiC. Patients were grouped based on level of glaucoma control (controlled IOP < 18 mm Hg and uncontrolled IOP ≥ 18 mm Hg). Primary endpoints included reduction of medication burden in the controlled eyes and IOP reduction in the uncontrolled eyes. Secondary endpoints included adverse intraoperative or postoperative events and necessity for further incisional surgery.

In the study, 94.4% of patients with controlled OAG achieved their goal of reducing their medication burden, and 66.7% of these patients were off all medications at 12 months.

At 12 months in patients with controlled glaucoma (n=18), there was a 76.0% reduction in the number of medications, falling from 2.5 to 0.56 ($P < .001$). Furthermore, 94.4% of patients achieved their goal of reducing their medication burden, and 66.7% of patients were off all medications at 12 months (Table).

CONCLUSION

ABiC is effective at reducing the medication burden in patients with controlled OAG while maintaining IOP. The procedure is effective as a standalone or an adjunct to cataract extraction, and it can be performed in phakic and pseudophakic patients. ■

1. Ellex iScience, Inc. Data on File.

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