

Improving the Trabeculectomy

A glaucoma surgeon offers advice for those who wish to begin using the Ex-Press.

BY RICHARD A. LEWIS, MD

Ophthalmologists have been performing incisional filtering surgery on patients with glaucoma for over 100 years. Although this intervention can successfully lower the IOP, filtering surgery's short- and long-term complications have always been a big concern. The full-thickness procedures with punches and trephines in the early 1900s were succeeded by the development of thermosclerostomy and partial-thickness flaps in the 1950s and then trabeculectomy with antifibrotic agents in the 1980s. With these changes, ophthalmologists have sought to make filtering surgery more predictable and less complicated. The introduction of the Ex-Press Glaucoma Filtration Device (Alcon Laboratories, Inc., Fort Worth, TX) is one more step in that process.

Surgeons' techniques, however, vary in terms of the location of the conjunctival incisions, the shape of the flap, the size of the sclerostomy, the use of an iridectomy, the closure of the scleral flap, the number of sutures, and conjunctival closure. Differences extend to the management of patients after trabeculectomy. Nevertheless, it is well known that a truly successful filtering procedure is equal parts technically skillful surgery and diligent postoperative management. Given the wide range of approaches to trabeculectomy, it is therefore important for surgeons starting to use the Ex-Press to have sufficient experience with and understanding of "standard" trabeculectomy technique and postoperative care.

THE KEY STEPS OF THE PROCEDURE

No. 1. Fixation

First, the surgeon fixates the globe with a superior corneal suture.

No. 2. Conjunctival Incision

Regardless of the surgeon's preference for a limbus- or fornix-based conjunctival flap, its closure must be watertight. He or she therefore must perform careful dissection, take meticulous care of the conjunctiva, and avoid the cre-

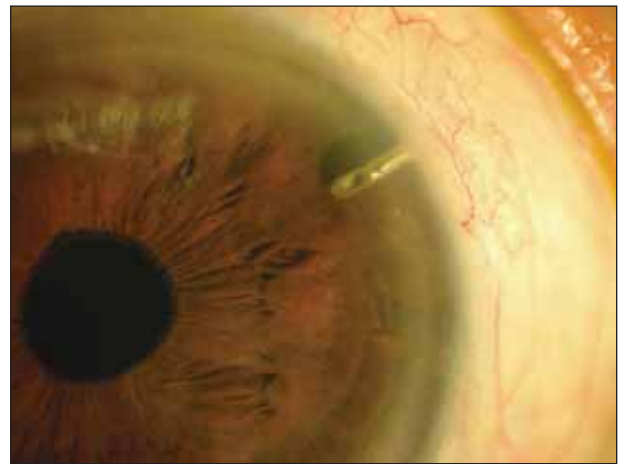


Figure. A properly positioned Ex-Press Glaucoma Filtration Device.

ation of a buttonhole during the procedure. At the conclusion of surgery, the ophthalmologist must be absolutely certain that the conjunctiva is well closed and not leaking.

No. 3. Application of Antifibrotics

It is important to place the mitomycin C posteriorly and away from the limbus to prevent subconjunctival fibrosis. This will reduce limbal ischemia and necrosis of the bleb.

No. 4. Creation of the Scleral Flap

The size and shape of the scleral flap are important with the Ex-Press. A half-thickness rectangular flap that allows for approximately 1 mm of coverage of each side of the device is recommended. This architecture will restrict excessive flow and thus avoid hypotony-induced complications.

No. 5. Placement of the Device

Prior to entering the eye, I always create a paracentesis site at either 10 or 2 o'clock, depending on whether I am

operating on a left or right eye. The paracentesis serves two purposes. During surgery, it allows me to instill viscoelastic to deepen the anterior chamber as needed. Postoperatively, I find it useful to have a site through which I can reform the anterior chamber if problems arise during the first few days.

The Ex-Press is implanted under the rectangular scleral flap (Figure). The device should be snug when placed through the sclera. I use a 25- or 27-gauge disposable needle at the surgical blue zone of the limbus to make the hole and then pass the Ex-Press injector through sclera, parallel to the iris.

No. 6. Closure

I use 8-0 Vicryl (Ethicon, Inc., Somerville, NJ) to close the scleral flap. I place two sutures at each corner and use the same 8-0 Vicryl to close the conjunctiva.

No. 7. Postoperative Care

Postoperative care and management are paramount to successfully lowering the IOP. During the first few days, maintenance of the anterior chamber and the control of inflammation are of primary importance. The judicious use of steroids (for 4-6 weeks), cycloplegics (for 1 week), and topical antibiotics (for 1 week) is essential. After the first 2 weeks, the creation and maintenance of a functional bleb become the top priority. Massage, laser suture lysis, and needling may be necessary during this phase of care. My schedule of postoperative visits for a routine trabeculectomy varies but includes examinations, at a minimum, on days 1, 14, 28, and 42. Some patients, however, come to my office daily for the first 2 weeks.

CONCLUSION

A successful filtering procedure with or without the Ex-Press requires meticulous surgery and attentive postoperative care. I recommend that ophthalmologists videotape their initial surgeries so that they can critique their performance. For surgeons' early patients, postoperative visits should be frequent to allow the prompt detection of problems and successful intervention.

The Ex-Press has enhanced filtering surgery by standardizing the "hole." It is the rest of the procedure that remains controversial yet critical to achieving successful results. ■

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