

Use of the Express Mini-Shunt

Lately there has been increased interest in the use of the Express Mini-Shunt from Optonol Ltd., located in Neve Ilan, Israel.

This device is a relative hybrid of an aqueous shunt and a trabeculectomy. The Express is a metallic stent inserted into the anterior chamber under a standard scleral flap.

When the device was initially introduced, it was inserted without the creation of a scleral flap. Many surgeons noted thinning of the conjunctiva and Tenon's overlying the shunt. This thinning posed a major infection risk. Thus, surgeons evolved to first creating a scleral flap, and then inserting the shunt under the protection of a scleral flap. The longer-term efficacy of this type of implantation has been confirmed by recent clinical studies.

The scleral flap used in this procedure can be identical to the flap created for trabeculectomy. Unlike a trabeculectomy, which involves the removal of a block of trabecular tissue followed by an iridectomy, the Express is placed into the eye once the flap has been fashioned. The Express does not require removing any trabecular or scleral tissue. Additionally, it does not require, in most instances, the creation of a surgical iridectomy. This simplifies the surgery by removing these two steps. Following insertion of the Express, the scleral flap is closed with either absorbable or permanent suture. The conjunctiva and Tenon's are then closed above the flap.

This procedure may provide an excellent platform for less-experienced surgeons to transition from trabeculectomy to the addition of aqueous shunts to their surgical arsenal.

Efficiencies with Glaucoma Surgery: Incorporating Fibrin Glue into Your Technique

By Robert J. Noecker, M.D., M.B.A.

Our practice has been using a technique for 3 years that saves time and money and has become an important part of how we do many glaucoma surgeries and other procedures that require conjunctival closure. We have replaced sutures with fibrin glue in many incisional procedures. This technique allows us to perform surgeries in a quicker manner without sacrificing the safety of our patients' eyes. Currently, there are very few incidences where we choose to use sutures over fibrin glue, yet the adoption rate has still been relatively low in the profession as a whole, perhaps because M.D.s are creatures of habit. If we are comfortable with sutures, we may not see any reason to change. While I too was comfortable with sutures and didn't have a high rate of complications from them, the benefits of fibrin glue were worth the change. Because we are able to finish a surgery faster, we see more patients (and gain more revenue) in the same time. We also now use our time more wisely — i.e., on the steps of the case that are most crucial rather than in the closure phase, which may not be the most important part. The technique takes a little bit of time to learn. Those who do, however, find it to be quite easy and straightforward. For some preparations (Tisseel, Baxter) the two components of the product, glue and accelerant, need to be heated in a container that comes with the glue. This is typically done by a nurse in the OR. You then combine the components using two syringes or one syringe with two compartments, the substance becomes sticky and more viscous, and you apply it to the area needing closure. After 15 seconds, the glue will hold the tissue in place. Once you get the hang of it, this technique works very well. Also, using it does not preclude the option to use sutures in addition; probably the most watertight seal can be achieved with the combination of both glue and sutures. Using the glue is easily reversible and forgiving of error; if the position is not quite correct the tissues can be easily separated and then re-glued. Any excess can be trimmed away. Furthermore, because the fibrin glue helps to facilitate hemostasis, there tends to be less postoperative migration of blood and less sub-conjunctival scarring. We are able to use fibrin glue in any kind of case from tube shunts to canaloplasty, primarily to close the conjunctiva, but it can also seal early bleb leaks after trabeculectomy for one to two days before the body naturally heals it. In trabeculectomy, we also have had success using the glue to create a space under the conjunctiva that's free of blood and scarring. When implanting tube shunts, we found that fibrin glue is effective at holding a pericardial patch graft in place on top of the shunt, to prevent erosion from friction caused by the eyelid. While it's still sometimes necessary to place a suture as a safety measure, in my practice fibrin glue almost completely eliminates the need for sutures for this use. It's also effective for temporarily holding the plate of a shunt such as the Baerveldt in place at least for a while, which can be helpful in judging positioning. In canaloplasty, it can secure the scleral flap above the lake as well. Because this is a low-flow situation, the glue will limit flow for the first few days. We haven't seen clinically significant bleb formation in the short term, and in the long term there is no evidence of leakage through the flap. Using the glue also obviates patient reports of postop irritation from the suture. Significantly, using fibrin glue in canaloplasty also shortens the procedure time by almost 30 minutes. While I opt for fibrin glue most of the time, there are some cases where I don't think it's the best choice. If there is a lot of scarring, I prefer to augment the use of the glue with a limbal suture to prevent retraction. And if a patient has had a few previous surgeries, I don't use this technique alone because the glue isn't as strong as it might need to be in these more complex cases. However, if I have a younger eye with no previous surgeries, I find no reason not to use fibrin glue.

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An Increased Role for Shunts

Most surgeons select the shunt that provides them with the greatest comfort level. The leading shunts are usually able to provide excellent IOP control for at least a decade following the surgery.

Over nearly two decades, I have honed my skills as a glaucoma surgeon. I believe that in the hands of a well-trained surgeon, the success rate of an aqueous shunt provides an excellent option for achieving short, intermediate and long-term IOP control.

In my own experience, the use of aqueous shunts allows me to provide better long-term IOP control with less postoperative manipulation. I believe if early hypotony can be controlled, the long term IOP control is better than that which I achieve with trabeculectomy. Additionally, I can achieve good long-term IOP levels without the use of anti-metabolites and their associated infection risks. **OM**

Andrew Rabinowitz, M.D., is the glaucoma specialist at Barnett, Dulaney Perkins Eye Center, Phoenix, Ariz. His surgical techniques have been used in educational films demonstrating the appropriate usage of glaucoma shunts. He has no financial interest in any of the products mentioned in this article. Dr. Rabinowitz can be reached via e-mail at andrewrabinowitz@aol.com.



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