

Point/Counterpoint: Should MIGS Be Included During Residency Training?

Will the early introduction of MIGS lead to a generation of surgeons who will not know how to suture?



By Albert S. Khouri, MD

What are essential surgical skills that residents and fellows need to acquire during training?

The answer is complex, because the goals of fellowship training focus on glaucoma surgery, whereas residents are embracing a more comprehensive approach to ophthalmic surgery. The foundations of surgical training, however, apply to both and are necessary for fellows and residents to acquire in order to constantly advance their skills beyond their time in training and throughout their careers.

How long does it take to acquire these essential skills? Residents spend a few years in training, whereas fellows typically have a year—actually months, practically speaking. What, then, are the fundamentals of surgery that should be transferred during this precious time? Should trainees be delving into microinvasive glaucoma surgery (MIGS) early on, possibly at the expense of more basic surgical skills?

For example, tissue separation and suturing are basic surgical techniques. Almost no MIGS procedure requires suturing, and most are adjunctive to phacoemulsification (again sutureless). Currently, the majority of resident surgery is sutureless. Recently, even the occasional case that requires a suture may end up instead with the application of glue to ensure the wound's integrity. Short of glaucoma and corneal surgery, residents and fellows are getting less and less opportunity to perform

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Withholding education could compromise the glaucoma care that patients receive.



By Steven D. Vold, MD

The FDA's approval of the Trabectome (NeoMedix) and the iStent Trabecular Micro-Bypass Stent (Glaukos) initiated a major paradigm shift in the treatment of glaucoma. In the past, incisional glaucoma surgery was a last resort because of the protracted postoperative clinical course and the numerous complications associated with both filtration and tube shunt surgery. Unfortunately, many patients do not adhere to prescribed therapy with topical glaucoma medication, and laser trabeculoplasty lowers IOP inadequately for many individuals. Microinvasive glaucoma surgery (MIGS) offers a promising alternative to these treatment modalities. The decision to provide MIGS training to residents makes sense for four reasons.

No. 1. ACADEMIC INSTITUTIONS HAVE A RESPONSIBILITY TO TEACH RESIDENTS CORE GLAUCOMA TREATMENT OPTIONS

Quality residency training is critical to ensuring the best outcomes for patients. Furthermore, academic institutions need to guide the future direction of ophthalmic care, assist in identifying the clinical role of new procedures, and help develop the process by which new technologies are implemented in clinical practice.

Without question, MIGS is here to stay. Although in its infancy, MIGS is already established in the treatment of mild to moderate open-angle glaucoma. The potential safety advantages and benefits of MIGS compared

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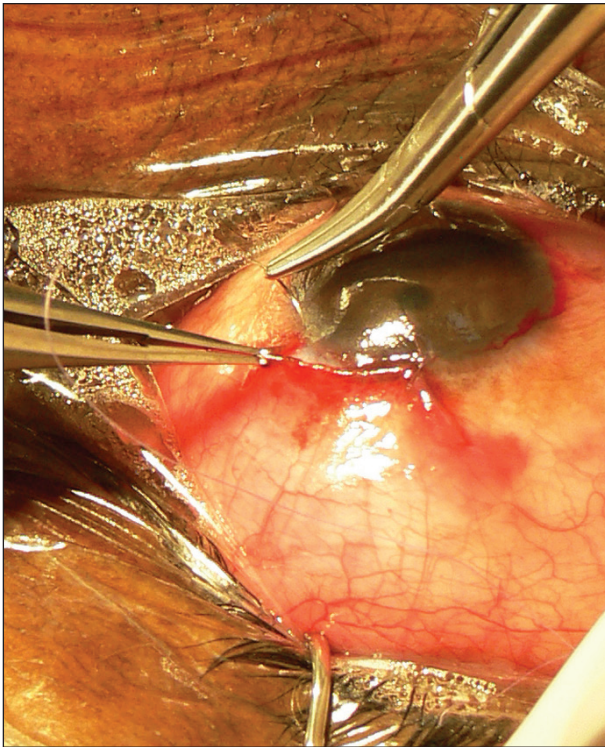


Figure 1. Interrupted suture closure using a spatula needle and absorbable suture material.

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microscopic suturing. Will an early introduction of MIGS lead to a generation of surgeons who will not know how to suture?

SKILLS

Glaucoma as a discipline requires robust surgical skills. Successful trabeculectomy, for example, requires

- refined tissue handling, as the surgeon manipulates elderly conjunctiva that has the consistency of wet tissue paper and then soaks it with antimetabolites
- tissue separation, such as when dissecting scar tissue and creating partial-thickness flaps
- closure, such as placing sutures of precise tension to approximate a scleral flap or ensuring a watertight conjunctival closure (Figures 1 and 2)

What if resident and fellowship training adopts mostly MIGS or glaucoma procedures that revolve around phacoemulsification? To my mind, during those months of training, educators, residents, and fellows should instead focus on basic yet essential surgical techniques. For example, they should learn how to decide when to use a blade versus scissors, a mattress suture or a continuous suture, a spatulated or a vascular needle, an absorbable or a permanent suture

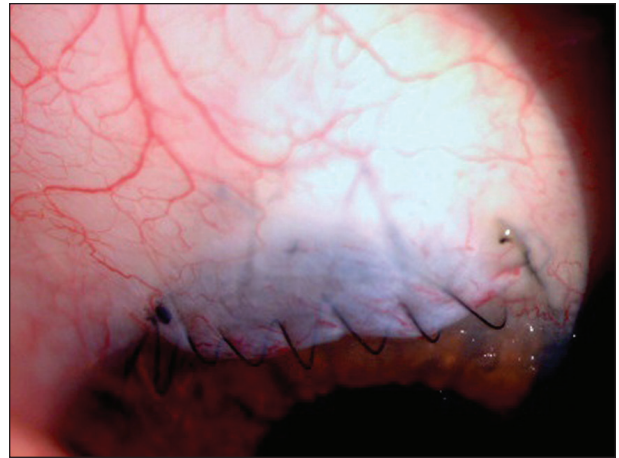


Figure 2. Running closure with nonabsorbable suture material on a taper point needle.

material, and so on. This skill set is an absolute necessity for surgeons who will mature with experience and later be able to incorporate techniques like MIGS into their surgical armamentarium.

MANAGING PATIENTS WITH ADVANCED GLAUCOMA

How will residents and fellows treat patients with advanced glaucoma who require low target pressures? Unless residents and fellows perform mostly trabeculectomy and tube shunt surgery during training, they may not develop the necessary surgical skills and suturing techniques. MIGS procedures are mostly performed in combination with cataract extraction, and many patients do not fit that profile. More importantly, the skill set acquired by mastering basic techniques during glaucoma surgery will carry over to many other clinical scenarios, including the closure of conjunctival, corneal, or scleral incisions.

CONCLUSION

Introducing MIGS during training will cost residents and fellows more essential experience. The basic fundamental skills of surgery are the foundation that surgeons in training need to acquire in order to mature over time and later be able to incorporate techniques like MIGS into their surgical practice.

Section Editor Albert S. Khouri, MD, is an assistant professor and program director of the ophthalmology residency, and he is an associate director of the Glaucoma Division at Rutgers New Jersey Medical School in Newark, New Jersey. Dr. Khouri may be reached at (973) 972-2045; albert.khouri@rutgers.edu.

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with filtration and tube shunt surgeries can no longer be denied. The number of MIGS procedures performed in the United States is growing rapidly, while the number of trabeculectomies has declined significantly over the past decade. The FDA approved the iStent in 2012. Amazingly, more than 40,000 iStent procedures were performed in 2014 alone (data on file with Glaukos).

Patients have come to expect faster postoperative visual rehabilitation. Ultimately, they will demand that their doctors provide MIGS, or patients will seek glaucoma care elsewhere. To withhold this kind of training will leave a tremendous gap in residents' education.

No. 2. COMPREHENSIVE OPHTHALMOLOGISTS NEED TO BE ABLE TO PERFORM MIGS PROCEDURES TO BEST SERVE THEIR PATIENTS

Comprehensive ophthalmologists and optometrists manage the care of most glaucoma patients. Glaucoma subspecialists are commonly consulted on only more complex glaucoma cases. In addition, MIGS procedures combine nicely with cataract surgery. The iStent's FDA-approved indication is for patients with early to moderate glaucoma in the setting of cataract surgery. Comprehensive ophthalmologists perform the bulk of cataract surgery in glaucoma patients. With proper training, the majority of cataract surgeons should certainly be able to perform MIGS procedures successfully. If these doctors are not encouraged to address glaucoma at the time of cataract surgery or if they remain untrained in MIGS, many of their patients will not receive the best glaucoma care available.

No. 3. RESIDENTS NEED TO BE TRAINED TO PRACTICE MODERN MEDICINE

From my perspective, the concept of withholding MIGS training from residents is shortsighted. Although MIGS technologies continue to evolve, their excellent safety profile and value are undeniable. With proper supervision, residents can certainly be successfully trained to perform MIGS procedures. I would argue that learning these procedures may actually make residents better clinicians. This education will enhance their gonioscopy skills (Figure), and it will prompt them to obtain more thorough medical histories in order to ascertain whether patients are adhering to prescribed glaucoma therapy and what their quality-of-life goals are.

In the past, academic programs were sometimes slow to offer phacoemulsification training. Skeptical physicians believed the procedure was risky and that residents would not develop suturing skills if they did not perform extracapsular cataract extraction. This policy

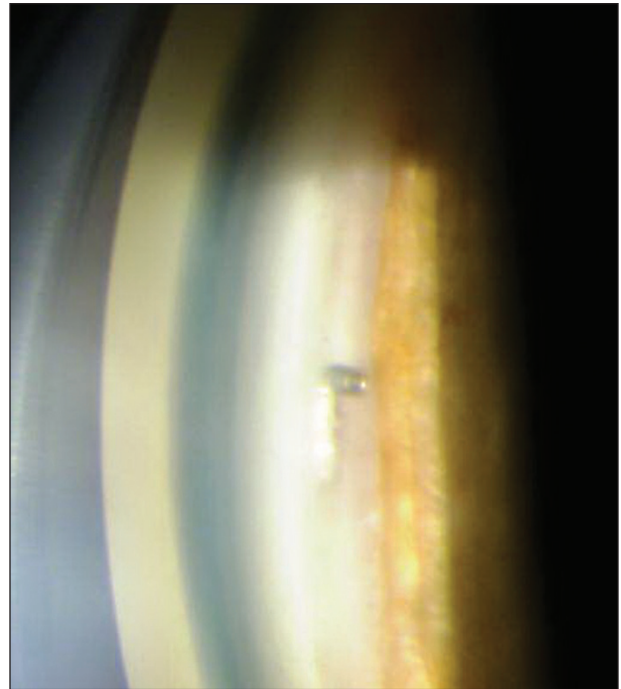


Figure. The iStent is visible on gonioscopy.

forced numerous surgeons to learn phacoemulsification in their own clinical practices. Is this really the ideal way to bring new technologies to clinical practice?

No. 4. GLAUCOMA FELLOWSHIP TRAINING NEEDS TO BE GEARED TO THE MANAGEMENT OF TERTIARY GLAUCOMA CASES

Although exposure to filtration and tube shunt surgery in residency training is important, most comprehensive ophthalmologists will ultimately defer these types of surgery to glaucoma subspecialists. Additional MIGS training should certainly be a significant part of glaucoma fellowship training, but it should not be restricted to fellows. With improved treatment of early and moderate glaucoma, filtration surgery will become less necessary and generally be reserved for patients with advanced disease.

CONCLUSION

MIGS training should be an important part of both residency and glaucoma fellowship training. Core surgical competencies should continue to be taught but not at the expense of patients' care. ■

Steven D. Vold, MD, is founder and CEO of Vold Vision in Fayetteville, Arkansas. He is a consultant to and investigator for Alcon, AqueSys, Glaukos, InnFocus, Iridex, Ivantis, and Transcend Medical. Dr. Vold may be reached at svold@voldvision.com.