

When to Avoid MIGS



Identifying the wrong candidates can be as important as choosing the right ones.

BY MANJOOL SHAH, MD

The development and proliferation of microinvasive glaucoma surgery (MIGS) techniques and technologies have radically broadened the glaucoma surgeon's interventional armamentarium. However, as with every therapeutic modality in existence, there are situations in which MIGS techniques should be avoided.

Before delving deeper into these situations, it is important to recognize that not all MIGS techniques and devices are created equal. The risk profiles, optimal candidates, and contraindications undeniably vary among the available modalities. It is important not to paint with a broad brush when choosing the right procedure for a given patient.

Given the currently wide scope of MIGS, this article discusses the category at large. As detailed herein, the scenarios in which MIGS should likely be avoided can be broken down into three categories.

NO. 1: OCULAR CONCERNS

As the novice MIGS surgeon knows all too well, one of the hardest challenges of angle-based surgery is achieving adequate visualization. As such, one scenario in which MIGS should be avoided is when the view of the angle, or the anatomy of the angle itself, is suboptimal. This prob-

lem may occur due to corneal opacity, significant peripheral anterior synechiae that obscure angle structures, or previous angle-based surgery. Although some of these issues can be overcome with more advanced techniques, the level of difficulty, as well as potential risk, increases in this setting.

Similarly, with subconjunctival MIGS approaches, a history of previous conjunctival surgery or the presence of associated subconjunctival scarring can preclude surgical success.

In addition to considering intraocular concerns, ophthalmologists must

carefully assess the ocular adnexa, orbit, and facial anatomy. Orbital fat atrophy, a prominent orbital rim or malar eminence, tight eyelids or small palpebral fissures, and significant ocular surface disease can affect the surgeon's ability to perform MIGS safely and the patient's ability to heal optimally. With practice, surgeons can often overcome complex orbital anatomy, but identifying these challenging eyes and gaining comfort with a modified technique and approach may be out of reach of the novice surgeon.

Disease-specific considerations may also present relative contraindications

AT A GLANCE

- ▶ The risk profiles, optimal candidates, and contraindications vary among MIGS modalities.
- ▶ Ophthalmologists should carefully consider any intraocular concerns and assess the ocular adnexa, orbit, and facial anatomy of all patients being considered for MIGS.
- ▶ Systemic concerns may influence a surgeon's decision to proceed with MIGS or may alter his or her choice of which MIGS technique to use.
- ▶ Although many MIGS techniques require similar skill sets, it is wise to expect a learning curve with any device.

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to MIGS. In patients who need a very low IOP, currently available MIGS-based strategies may not be as successful as traditional trabeculectomy, with full recognition that these are difficult-to-treat patients with limited options. Diseases such as neovascular glaucoma may be associated with significant bleeding or scarring during surgical intervention and therefore carry a high risk of failure with MIGS; thus, traditional surgery such as glaucoma drainage device implantation is likely indicated in these eyes.

NO. 2: SYSTEMIC CONCERNS

Beyond the eye and the orbit, various systemic concerns may influence a surgeon's decision to proceed with MIGS or may alter his or her choice of which MIGS technique to use. Systemic anticoagulation and antiplatelet therapy can yield uncontrolled bleeding, which can affect intraoperative and postoperative results. With some Schlemm canal and suprachoroidal techniques, the risk of bleeding may outweigh the potential benefits of MIGS. Typically, the risk of bleeding after Schlemm canal-based surgery is confined to the

immediate postoperative period, but late postoperative hyphema has been reported in this context as well.^{1,2}

The patient's ability to move his or her head and neck is an important consideration with MIGS techniques that require direct gonioscopy. Patients with a history of cervical spine disease may not be able to tolerate certain head positions, increasing the possibility of a suboptimal surgical view. Similarly, a patient with limited ability to follow commands and cooperate may require increased anesthesia or sedation to enable the surgeon to safely perform the delicate maneuvers MIGS requires. Because there may be systemic contraindications to increased anesthesia, patient cooperation must be assessed preoperatively.

One of the advantages of MIGS is the relatively predictable postoperative course, with little need for postoperative fine-tuning and intervention. However, with some procedures, patients should be closely monitored, as they may occasionally need postoperative procedures such as bleb needling. Therefore, while many MIGS strategies may actually be ideal for patients who have difficulty adhering

to medications or keeping their postoperative appointments, this is not universal. When selecting the appropriate procedure, the surgeon should consider the patient's ability to follow up appropriately, adhere to postoperative instructions, and potentially undergo postoperative interventions.

NO. 3: DEVICE AND TECHNIQUE CONCERNS

With so many MIGS devices and technologies available, it has become harder for the glaucoma interventionist to be proficient at all of them. The surgeon's experience with a given approach may affect his or her use of a specific technique or device. Although many MIGS techniques require similar skill sets, whenever a new procedure is tried, it is wise to expect a learning curve. Patient selection may be much more conservative when the surgeon's experience with a given technique is relatively limited.

CONCLUSION

MIGS is no longer a specific technique or even a family of techniques. It is quickly becoming a whole class of widely different surgical interventions, so there is no one-size-fits-all solution for the glaucoma patient. Every procedure carries its own specific indications and concerns. The onus is on the conscientious surgeon to navigate this exciting space and determine what is right for the patient sitting in front of him or her. ■

1. Sandu S, Arora S, Edwards M. A case of delayed-onset recurrent hyphema after iStent surgery. *Can J Ophthalmol*. 2016;51(6):e165-e167.

2. Ahuja Y, Malihi M, Sit AJ. Delayed-onset symptomatic hyphema after ab-interno trabeculectomy surgery. *Am J Ophthalmol*. 2012;154(3):476-480.

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