

# MIGS: A Local Perspective

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Minimally invasive glaucoma surgery (MIGS) was the hottest topic in glaucoma 7-8 years ago. Several start-up companies conducted pivotal trials and secured approval from the United States Food and Drug Administration (US FDA). In the US, uptake and entry into mainstream practice of several MIGS devices have been strong. But from what I see, it has been a struggle in Europe and, more so, in Asia.

Why has MIGS not taken off everywhere? I will offer my views from a local perspective.

First, there is confusion over what MIGS is. All new devices wanted to be identified as MIGS. These are the various mechanisms of action of these devices – trabecular bypass shunts, suprachoroidal shunts, trabecular meshwork unroofing devices, devices that thread or open the Schlemm's canal, and trans-scleral shunts. From my understanding and personal point of view, MIGS, by virtue of its name minimally invasive, should be an elegant, simple procedure that does not damage or destroy structures of the eye. So, a goniotomy-like incision or tube that penetrates the sclera or globe to drain subconjunctivally are not minimally invasive in my opinion. But it is not for me to decide what MIGS is or is not. In the end, it is the surgeon who decides what is best for the patient regardless of the name of the procedure.

Second, the intraocular pressure (IOP) lowering effect of MIGS is not as good as trabeculectomy. All the clinical trial results and presentations openly and consistently emphasize this point. However, most surgeons still expect a “trab-like” outcome and

hesitate to use the devices or hesitate to offer it to patients because of this shortfall in expected IOP-lowering effect. The accepted indication for MIGS is mild to moderate glaucoma in patients on 1 or 2 medications. The objective is to provide access for additional aqueous drainage and allow lowering of IOP with current medications or decrease the medication burden without promising total elimination of pharmacologic therapy. Similar to premium presbyopia-correcting intraocular lenses (IOLs), we present the benefit of better range of vision but manage patient expectations by not overpromising spectacle independence. On-label use of trabecular bypass MIGS is for it to be combined with cataract surgery to piggy-back on the IOP-lowering effect of phacoemulsification. This combined procedure strategy has been clearly shown to be of benefit in terms of lower IOP, reduction of medication, and in one long-term study, less incidence of secondary glaucoma procedure at a later stage. Admittedly, stand-alone use of MIGS is challenging because the IOP-lowering effect may not be significant enough to reach target IOP or lessen medication burden.

Third, the cost of a MIGS device is high. Coverage by medical or government insurance in the US has removed this burden from US patients and helped increase the usage of MIGS. However, in the local setting, the cost of the MIGS device in addition to the facility fee, professional fee plus cataract surgery, in combined surgery cases, is prohibitive for the majority of the population. When contrasted with trabeculectomy, which only has the minimal cost of

knives, sutures and mitomycin, and coupled with its modest IOP lowering, it will be quite difficult for MIGS to compete. However, if a patient with mild to moderate glaucoma is already planning for cataract surgery, the potential benefits of adding a trabecular bypass shunt, to my mind, outweigh the risks. I believe I have an obligation to discuss this option to my patients and let them decide if they wish to avail of this treatment.

Lastly, access and training are needed to encourage usage of these devices. It does not help that each device is unique and does not even resemble the look or the surgical technique of the other devices. At least, premium IOLs look very similar to each other and are all implanted in the same fashion using similar injectors. I was fortunate to have participated in clinical trials for the trabecular bypass devices and suprachoroidal shunts, providing me with adequate training. There is a learning curve of about 3-5 implantations to get a sufficient feel for the surgical technique. Who will train and where to get “free” devices for these training surgeries are important questions and present significant hurdles for a surgeon willing to try. The younger-generation ophthalmologists would have to undergo fellowships in foreign institutions to get enough training and confidence to use these on their patients after they come home. Then, they will have to teach the next generation of residents for these devices to reach the training institutions.

In summary, MIGS devices have become part of the treatment spectrum for glaucoma patients. For me, *ab interno* trabecular bypass shunts, suprachoroidal shunts and Schlemm’s canal opening devices are minimally invasive. The trabecular meshwork-opening devices or transscleral shunts require more manipulation and are more invasive. Staying within the indication of mild to moderate open-angle glaucoma on 1-2 medications gives the patient and surgeon a reasonable degree of success in achieving the goals of surgery, which are to reach mid to high teens pressure and a likely chance at reduction of medications. Cost may be the most significant hurdle in out-of-pocket populations but there will be patients who will feel this option will benefit their eyes and will be willing to proceed with MIGS when presented with the option. It may take a while longer before MIGS goes mainstream in the Philippines because adoption is slow but I believe Filipino patients deserve all the technology offerings that are available overseas.