MIGS and Meds

Has the future arrived?

BY E. RANDY CRAVEN, MD

It is hard for me to believe that more than 10 years have elapsed since I first implanted a device during microinvasive glaucoma surgery (MIGS). My colleagues and I did not even refer to the technology as MIGS but rather as a "small implant." The date was June 8, 2005, and the device was the first iStent Trabecular Micro-Bypass Stent (Glaukos) implanted in the US FDA trial. The patient was nervous; she had heard about the experiences of acquaintances who had undergone glaucoma surgery. I told her, "This may be different" and added that the device was tiny. "How small?" she asked. I took a pencil and made a representative mark as best I could. I had nothing else to show her. The patient later told me that the size is what made her decide to participate as the first trial subject; it comforted her somehow. Beyond the fact that she cared full time for a husband with dementia, she was also quite active with many humanitarian organizations and did not want a long recovery period. The patient underwent surgery and was randomized to receive the iStent. She was so elated with the results that she waited just over 7 years for FDA approval of the device so that she could undergo the surgery on her contralateral eye, despite the presence of a significant cataract. This told me that she had experienced something very different than most glaucoma patients who undergo surgery and say they will "never have anything done to the other eye." Ahem, those were not surgeries I did, of course.

I have since moved to the Middle East to further evaluate the possibilities of MIGS devices in the population in whom achieving success is the greatest challenge I can imagine.

THIS IS NOW

The problems associated with traditional glaucoma surgeries in the Middle East are legion. The ocular surface is fragile and prone to bleb-related infection (Figure 1). Studies evaluating the impact of dust and the dry climate on the ocular surface probably explain how severe ocular surface disease is over here. Devices such as the Ahmed Glaucoma Valve (New World Medical) or Molteno implant (Katena) have a moderate rate of extrusion, and as a result, ophthalmologists here perform a lot more cyclodestructive procedures than in the United States to avoid blebs. MIGS procedures in

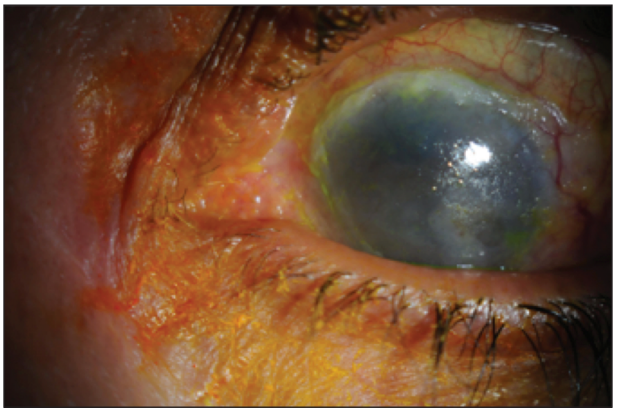

Figure 1. This ocular surface is typical in the Middle East. Despite the central opacity, the surgeon was able to see to the angle to implant a MIGS device. Another effective option in such eyes is endocyclophotocoagulation.

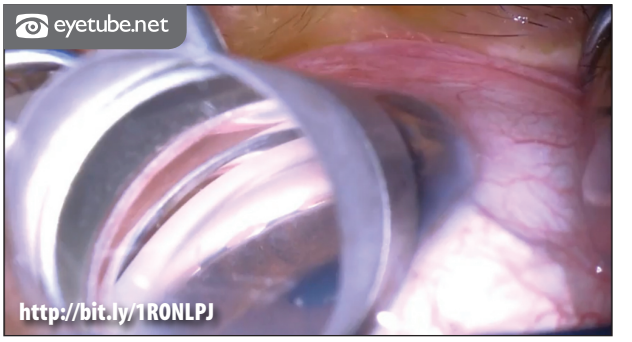

Figure 2. The Hydrus after implantation.

Saudi Arabia consist of the Trabectome (NeoMedix), the iStent, and the Hydrus (Ivantis; not FDA approved). Using these devices or procedures in eyes prone to difficulty with traditional glaucoma surgery helps me to understand where the field is headed. In particular, my colleagues and I are exploring the performance of the Hydrus in phakic eyes (Figure 2). As with the iStent, the labeling for the Hydrus will be for use at the time of cataract surgery. Many Saudi patients come in after a MIGS procedure and say, "I want that for the other eye." I have yet to hear that after a trabeculectomy or placement of an external-plate aqueous shunt.

In Saudi Arabia, the approach to patients differs

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somewhat from in the United States. Surgeons here usually prefer anything to a bleb-forming procedure. This means surgeons will first perform a trabecular bypass, endocyclophotocoagulation with phacoemulsification and IOL implantation, or a deep sclerectomy in hopes of avoiding a bleb. Because of this concern, my colleagues and I have not used the Xen45 (Allergan) and have very little experience with the Ex-Press Glaucoma Filtration Device (Alcon).

An example of a typical Saudi patient is a gentleman who presented to us 6 months ago with an ocular surface very similar to that shown in Figure 1. The patient was using a β-blocker, carbonic anhydrase inhibitor, and a prostaglandin analogue. His IOP measured 38 mm Hg. The patient was monocular and phakic with good vision. We chose to implant the Hydrus. Immediately postoperatively, we started the patient on a fixed combination of a prostaglandin and a β-blocker dosed once a day. His IOP has remained at 12 to 14 mm Hg. For now, we are headed down the nonbleb pathway first but will pursue a bleb-forming procedure if needed.

WHAT IS THE FUTURE?

In my opinion, the field is at the forefront of a surgical and medical evolution toward a new blend in treatment. I believe "MIGS and meds" will become a common consideration for patients. To my mind, achieving the target IOP with one or two medications in a person with a MIGS device is not a failure. This approach has already been reported as a method of success.[1] In Saudi Arabia, surgeons have moved toward a new concept for patients who are good candidates for MIGS: the goal is the target IOP, not necessarily freedom from medication. ■

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1. Ahmed, II, Katz LJ, Chang DF, et al. Prospective evaluation of microinvasive glaucoma surgery with trabecular microbypass stents and prostaglandin in open-angle glaucoma. *J Cataract Refract Surg*. 2014;40(8):1295–1300.