GONIO ready®: A New Gonioscopy System That Could Improve Your Surgical Approach With MIGS

A single-use microscope integrated visualization system that depicts a clear, wide view of the angle and permits bimanual MIGS approaches could be the next breakthrough in glaucoma surgery.

Visit the OCULUS Surgical Website to Learn More

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INTRODUCTION

MIGS has changed the landscape of surgical glaucoma so intensely that, particularly for newly minted glaucoma specialists, it may be difficult to remember the dynamics of pre-MIGS glaucoma practice. Still, the MIGS era is a new one, and developments that improve our ability to operate precisely and efficiently continue to propel us forward.

Adequate visualization of the angle is fundamental to MIGS, and yet many surgeons struggle to fully visualize the angle with their nondominant hand while still performing an elegant procedure. The release of GONIO ready® (OCULUS Surgical), a single-use gonioscopy system, which can be attached to your microscope, could address this challenge: GONIO ready® may not only improve our ability to see where we operate, but will also allow true bimanual MIGS to be performed.

My colleagues and I sat down for a roundtable discussion at AAO 2022 in Chicago to review the importance of visualization, discuss the limitations of available technology, and speculate how bimanual surgery could improve MIGS procedures. The second part of our discussion will appear in a forthcoming issue of Glaucoma Today *and* Cataract & Refractive Surgery Today.

–Iqbal "Ike" K. Ahmed, MD, FRCSC

Dr. Ahmed: Clear visualization is key to successful MIGS procedures, yet our current viewing systems have significant shortcomings. What are the biggest unmet needs in visualization for glaucoma specialists using MIGS?

Paul Harasymowycz, MD: When it comes to MIGS, if you can't see the angle, you can't operate. Pristine visualization comprises both magnification and a wide view of the angle, and acquiring both can be a challenge. Further, surgical instruments are sometimes impeded by the gonio prism that we use to visualize the angle, creating a frustrating scenario where we struggle to reach the very anatomy we have successfully visualized.

Ticiana De Francesco, MD: At first, one might assume that specific placement of a MIGS device or a unique surgical technique are the most challenging parts of completing a MIGS procedure. Actually, acquiring and maintaining a proper gonioscopic view from the angle is the most difficult part of many MIGS surgeries.

Leonard K. Seibold, MD: Control and consistency are major hurdles when it comes to MIGS. You might have a great view when you start a case, only to find that perspective compromised when the patient's head or eye moves. Patients who cannot fixate present a challenge that we have not yet found a sufficient way to address.

Edward Yung, MD: Adding to this is the challenge of having to use one of our hands to visualize the angle and the other to perform surgery. This leaves us without a way to control unexpected movements. If we had a free hand to reposition a patient's head and

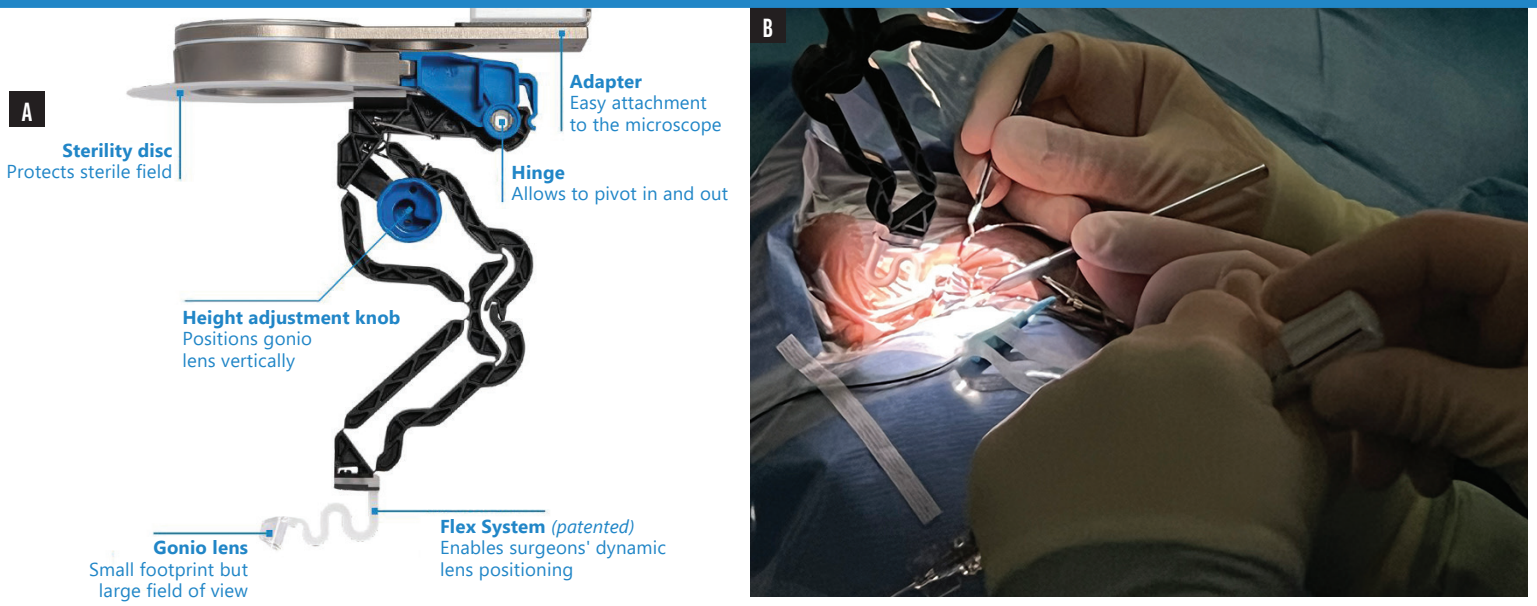

Figure. The design of the GONIO ready® single-use microscope-integrated gonioscopy system (A) allows glaucoma surgeons to improve visualization of the angle during MIGS and perform true bimanual MIGS procedures. The GONIO ready® attaches to the surgeon's microscope, offers a large field of view, and allows dynamic lens positioning (B).

improve visualization, then some of these problems might not be so intrusive.

Dr. Ahmed: There are a handful of visualization systems available to surgeons placing MIGS devices. I'd like to hear from the panelists about their preferred approaches, as well as the limits of those approaches.

Ahmad Aref, MD, MBA: I've tried various stabilizing gonio prisms, but they often got in the way of the incision. For this reason, I use a handheld direct approach with a Swan-Jacob lens (Ocular Instruments) in approximately 95% of my cases. This approach is conducive to various MIGS procedures and does not interfere with instrumentation. Visualization of the extents of the angle can be difficult with a Swan-Jacob lens, and safely treating the extent of the nasal angle remains a challenge.

The Swan-Jacob lens is best used in experienced hands. Rotation of a prism, in order to maximize view of the nasal angle, by novice users may result in seepage of OVDs and increased corneal pressure, sometimes leading to view distortions or hemorrhage. For training purposes, Swan-Jacob lenses are limited.

Dr. Seibold: Like Dr. Aref, I use the Swan-Jacob lens in a vast majority of my cases. It allows me to make microadjustments, which become easier with experience. I have tried hands-free disposable lenses. They are nice in theory—as the name suggests, you'll have a free hand during surgery—but I find myself adjusting them with my finger during surgery, which means I've merely swapped a hand for a finger, which is hardly an improvement. They're simple and easy to use, but they're limited in application.

Dr. Yung: The hands-free lenses Dr. Seibold described interfere with a smooth surgery. I find myself repeatedly tapping these hands-free lenses to the point that the patient's eye is forced to endure a series of microadjustments. At that point, I'd rather just use a Swan-Jacob lens. Indirect lenses offer an advantage for some procedures (eg, goniosynechialysis, Xen gel stent implantation [AbbVie/Allergan]), but I otherwise almost always utilize a direct viewing system.

Dr. Ahmed: How comfortable are you with single-mirror viewing systems?

Dr. De Francesco: I have found it challenging to use single-mirror goniolens as I must be mindful that I am indeed moving to the correct direction (and not the opposite direction) with instruments during surgery. I feel more comfortable using a double-mirror goniolens.

Dr. Aref: I agree that visual inversion makes angle work difficult with a single-lens viewing platform. Single-mirror platforms have a role in ophthalmology, but use during MIGS may not be one of them.

Dr. Ahmed: The GONIO ready® is a single-use microscope-integrated gonioscopy system that allows truly bimanual surgery during MIGS (Figure). What are some of the potential benefits to a hands-free visualization system?

Dr. De Francesco: My ability to manage complications would be enhanced by having my nondominant hand free. Imagine if bleeding were to occur while performing a gonioscopy-assisted transluminal trabeculotomy. With my current visualization system, I need to withdraw my gonio lens and inject OVD into the anterior chamber. If my nondominant hand was free, I could inject OVD through the paracentesis while still keeping my angle view. This would make my procedure more efficient and allow me to control intraoperative bleeding better.

Dr. Harasymowycz: It may be easy to overlook, but it's worth pointing out that having your second hand free to adjust a patient's head would be a major improvement over our current approach.

Dr. Seibold: If one of our hands is occupied by a visualization system, we are limited in how much we can control our surgical instrument. It comes down to a simple principal: we are surgeons, and we'd prefer to have two hands on a device than only one hand—and we would always rather focus our hands on surgical placement rather than on a visualization system. ■

How GONIO ready® Can Help Surgeons Maximize the Potential of MIGS

A new gonioscopy system that allows a truly bimanual approach creates new opportunities in the MIGS era.

Visit the OCULUS Surgical Website to Learn More

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INTRODUCTION

In a previous installment of Glaucoma Today *and* Cataract & Refractive Surgery Today, *I sat down with a group of glaucoma surgeons to discuss the confines of surgeons' visualization into the recesses of the eye with modern MIGS procedures. We focused on why clear visualization is foundational to successful outcomes for surgeons performing MIGS. We characterized the limitations of current visualization techniques and outlined how bimanual surgery (which would be enabled by a truly hands-free visualization platform) would unlock the full potential of MIGS.*

Here, we continue the conversation by turning our focus to the GONIO ready® (OCULUS Surgical). The GONIO ready® is a single-use gonioscopy system that attaches to the surgical microscope, thereby freeing the hand a surgeon typically uses for viewing the angle during a MIGS procedure. The device debuted earlier this year.

In this final part of our conversation, we consider how a hands-free visualization system could affect training young surgeons, compare and contrast the merits of disposable and reusable technology, and share our initial impressions and pearls of this new technology for new users. Readers seeking to learn more about the device can visit oculussurgical.us/gonioready for more details.

–Iqbal "Ike" K. Ahmed, MD, FRCSC

Dr. Ahmed: I'd like to pick up where we left off in our previous installment of this roundtable by continuing our discussion on the potential benefits of true bimanual surgery during MIGS.

Edward Yung, MD: It's easy to imagine the benefits of bimanual approaches in the current MIGS landscape: we've all been in a situation where we wished for a free hand. But it's easy to overlook how a bimanual approach might allow the emergence of novel MIGS technology that requires both hands to use. Sometimes emerging MIGS technologies have stunning potential but are limited by difficult placement. By having a free hand, we can mitigate the challenges of a device's difficult application.

Dr. Ahmed: Some surgeons favor reusable visualization platforms, while others prefer single-use technology during MIGS procedures. What are the benefits of using one over the other?

Ahmad Aref, MD, MBA: As someone who works in a hospital system that closely monitors costs, I use reusable devices. Visualization is very clear early in a reusable

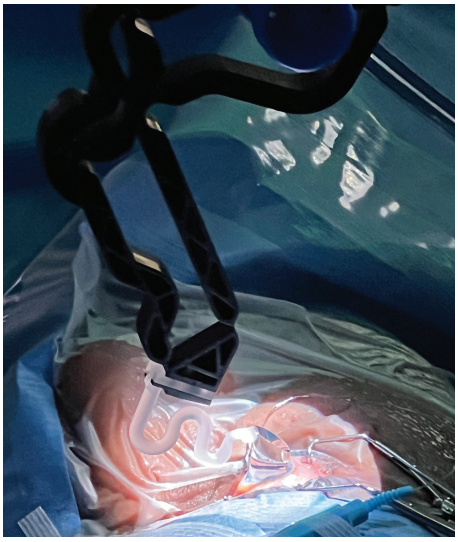

Figure. The GONIO ready® places little pressure on the cornea during a MIGS procedure, and surgeons may find that less OVD is expressed from the eye during surgery.

device's lifecycle, but the quality of the view deteriorates over time—a frustrating reality that may contribute to inefficiency while performing surgery.

Leonard K. Seibold, MD: Busier surgical settings may benefit from single-use devices that eliminate the need for sterilization and autoclaving. Streamlining processes in an ASC that faces high patient turnover makes surgery more efficient, and single-use platforms have an advantage over reusable technology in these situations.

Dr. Yung: I sometimes find that reusable devices are defective out of the package. Maybe they're not so defective that they're unusable—say, they have a smudge or a scratch on the lens that interferes with perfect visualization but still allows an adequate view—but when that happens, it ultimately undercuts the argument for reusables.

Dr. Ahmed: The GONIO ready® is a single-use microscope-integrated gonioscopy system that allows glaucoma surgeons to free one of their hands during MIGS procedures. To those on the panel who have experience with the GONIO ready®, what would you advise new users to keep in mind when first using this technology?

Paul Harasymowycz, MD: The good news is that the overall learning curve is low, and new users will adjust easily. I advise new users to consider the importance of presurgical placement of both the patient's head and the microscope equipped with a GONIO ready®. It takes some practice, but after you get into a routine where you're comfortable with a hands-off visualization approach, you'll have a set of positioning protocols that you'll use for future encounters. Also, prepare to use your foot pedal for visualization. It takes some getting used to.

Ticiana De Francesco, MD: I've noticed that the GONIO ready® does not have a flange that interferes with visualization, which makes it distinct from some so-called hands-free lenses. When a flange covers the limbus or an incision, it's easy to become frustrated.

Dr. Seibold: New users should know that the design has been tweaked with real-world applications in mind. For example, the patented Flex System on the GONIO ready® has been key to maintaining dynamic lens positioning during surgery. The earliest iterations of the GONIO ready® did not have a flexible arm connected to the lens, which meant that I sometimes lost contact with the eye when moving laterally. That's no longer an issue.

Dr. De Francesco: Also, new users should remember that very little pressure is placed on the eye when using the GONIO ready® (Figure). This introduces a new—and welcome—dynamic to MIGS procedures.

Dr. Ahmed: How might new technology such as the GONIO ready® affect the lives of surgical trainees?

Dr. Aref: I have performed about 15 to 20 MIGS teaching cases with a truly bimanual approach using GONIO ready®, and this visualization approach has been very helpful to my trainees. Those I have trained have picked up visualization with the device quickly, which speaks to the low learning curve Dr. Harasymowycz described earlier.

Preceptors and mentors must be careful to continue to educate fellows with other visualization technologies, both so those trainees can understand which device works best for their approach, and so they can learn how to perform surgery when a bimanual approach is not an option.

Dr. Yung: Dr. Aref makes a good point: We have a natural bias to become most comfortable with the systems on which we are trained, so we should be cautious about overexposing trainees to a single visualization method lest they become dependent on it. Still, early experience with the GONIO ready® is an important step forward in glaucoma surgery training, because if residents and fellows are exposed to such technology while they are still forming intellectual frameworks of our specialty, they may move our field forward in a way we have not yet conceptualized.

Dr. Ahmed: I'd like to thank the members of this panel for joining me in this conversation. I expect to hear more from you all—and from our peers in the MIGS space—as experience with the GONIO ready® increases. ■

Ahmad Aref, MD, MBA, demonstrates performance of 360° iTrack *ab interno* canaloplasty combined with gonioscopy assisted transluminal trabeculotomy using a novel and innovative hands-free gonioscopy system–the GONIO ready® by OCULUS Surgical. Watch the video now.