Early Intervention in Glaucoma

My experience with the OMNI Surgical System.

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As a glaucoma surgeon, I have long believed that the most effective treatment begins not when disease is advanced, but when the earliest signs of risk appear. By its nature, glaucoma is a silent and relentless disease—irreversible once visual field loss occurs. The key, therefore, is to intervene early, slow progression, and preserve the patient's vision for as long as possible. The evolution of microinvasive glaucoma surgery (MIGS) has made this philosophy a practical reality, and in my experience, the OMNI® Surgical System (Sight Sciences) has become a cornerstone of treating proactively.

WHY EARLY INTERVENTION MATTERS

In my practice in Nottinghamshire, England, my colleagues and I care for a large and diverse population—around 420,000 in total. Our approach emphasizes early detection and treatment to improve our chances of preventing irreversible damage. Waiting until field loss becomes evident is, to me, a failure of timing rather than of technique.

We know that patients' adherence to drop therapy is a significant problem.[1] They may present in clinic with well-controlled IOP, only for us to discover later that the disease has progressed because the drops were not used consistently. This variability in adherence translates to fluctuations in IOP, which is one of the strongest predictors of visual field loss.[2] By adopting an interventional mindset that incorporates MIGS where appropriate, we can remove (or limit) drop adherence from the equation and provide patients with a more stable, long-term pressure profile.

THE ROLE OF MIGS IN MODERN GLAUCOMA CARE

The introduction of MIGS transformed how we think about glaucoma surgery. Traditional filtering procedures, while effective, carry risks that are difficult to justify for mild-to-moderate disease. By comparison, MIGS offers a safer, less invasive option with a rapid recovery profile.[3] For patients with glaucoma who are undergoing cataract surgery, it is, quite simply, a missed opportunity not to intervene when the anterior chamber is already accessible.[4]

Over the years, I've come to rely on the OMNI Surgical System because of its unique combination of versatility, efficacy, and safety. The system allows for both canaloplasty and trabeculotomy, two complementary procedures that address resistance in the trabecular outflow pathway at multiple levels. This versatility enables me to tailor my approach to each individual patient's needs and disease stage.

VERSATILITY AND CONTROL IN ONE DEVICE

The OMNI device gives the surgeon full control. I can perform 180º of canaloplasty for a patient with mild open-angle glaucoma, or a full 360º combined with trabeculotomy for a patient with more advanced disease. The ability to titrate the extent of treatment in real time is a major advantage. For instance, I might start with canaloplasty, observe the reflux and resistance, and then decide to proceed with trabeculotomy if needed, all within the same procedure. This tailored approach ensures that each eye receives exactly what it needs, nothing more and nothing less. Unlike single-function MIGS devices, OMNI is not a "one-trick pony." It offers the flexibility to address the individual anatomy and outflow resistance of each eye.

From an ergonomic perspective, the device feels deliberate and controlled. The current Ergo version, which I've used since early 2024, has an intuitive design (Figure 1). The TruSync™ mechanism provides tactile feedback, and the handle sits comfortably in the hand. The catheter itself is visible through Schlemm's canal thanks to its blue coloration, helping to confirm placement and advancement during the procedure.

Operating-room efficiency is another benefit; from my experience, performing an OMNI procedure can be done relatively quickly. The key lies in precise wound construction and the correct angle of approach (*See the sidebar,* My Surgical Technique With the OMNI Surgical System).

SAFETY AND EFFICACY IN PRACTICE

The efficacy of the OMNI device is well supported by clinical evidence. Trials such as GEMINI[5] (combined with cataract surgery) and ROMEO[6] (combined with cataract surgery or standalone) have demonstrated sustained IOP reduction and decreased medication burden. These findings mirror my own experience. I often observe meaningful reductions in IOP, particularly in eyes with higher baseline pressures.

For example, one of my patients presented on four drops, yet his IOP remained in the mid-20s. I performed a combined cataract surgery with 360° visco-canaloplasty and 180° trabeculotomy using the OMNI system. His pressure stabilized

Figure 1. Dr. Elsahn uses OMNI with TruSync™ technology..

MY SURGICAL TECHNIQUE WITH THE OMNI SURGICAL SYSTEM

A precise, consistent technique is critical to optimizing outcomes with the OMNI Surgical System. Over time, I have refined an approach that prioritizes visualization, anatomical alignment, and smooth catheter advancement. The key steps are as follows:

1. Perform MIGS Before Cataract Surgery

I perform the OMNI procedure before cataract extraction in most cases to ensure a clear corneal view and an undistorted main wound. When performed after, corneal edema or wound hydration can obscure visualization.

2. Enhance Visualization With Vision Blue

I stain the angle using Vision Blue (DORC) in many of my cases. This stains the trabecular meshwork and clearly delineates the scleral spur for precise entry. The enhanced contrast makes it easy to confirm orientation throughout the procedure.

3. Positioning and Angle of Approach

Proper patient positioning is essential. I ensure a direct, *en face* view of the angle through the gonio prism. The approach should be tangential to the curvature of the trabecular meshwork–not perpendicular. The cannula must lie flat against the meshwork and scleral wall, following the eye's natural contour.

4. Controlled Entry and Advancement

I enter Schlemm's canal smoothly, keeping the microcatheter aligned along its path. OMNI's ergonomic design and curved profile allow the catheter to advance naturally. Its blue coloration provides continuous visual confirmation of correct canal placement and progression.

5. Respect the Anatomy

A strong understanding of angle anatomy cannot be overstated. Staining, magnification, and proper lighting all help confirm the trabecular meshwork and scleral spur landmarks. When these are clearly defined and the angle of approach is correct, the procedure becomes both efficient and reproducible.

6. Efficiency and Fluidity

With experience, the entire OMNI procedure takes only a few minutes. Once the entry and trajectory are correct, the catheter glides through Schlemm's canal with minimal resistance. The system's design encourages fluid motion and intuitive feedback, making it a deceptively straightforward yet highly precise technique.

7. Safety

Complications such as hyphema are rare, and when they do occur, they are typically self-limited. I do not stop anticoagulants preoperatively, as the reflux of blood during canaloplasty is a benign phenomenon, resulting from the retrograde flow of blood from the episcleral venous plexus down a pressure gradient rather than true intraocular bleeding. I always leave the eye firm at the end of the procedure while sealing the incisions, and this seems to effectively reduce the incidence of significant hyphema.

at 16 to 17 mm Hg long-term on no drops. Such results reinforce my confidence in the system's ability to deliver durable control without compromising safety.

In another case, an eye scheduled to receive a tube shunt was found intraoperatively to have an extremely thin sclera. We abandoned the tube and just proceeded with a scleral patch graft. A few weeks later, we proceeded with OMNI instead, performing combined canaloplasty and trabeculotomy. The result was a stable pressure of 14 to 15 mm Hg on two drops, an excellent outcome given our inability to offer more invasive surgery at the time. These cases underscore OMNI's adaptability and reliability across disease severities.

THE EARLY-INTERVENTION MINDSET

When considering glaucoma management, I take the view that any visual field loss is unacceptable. Too often, clinicians settle for "mild loss" and continue with topical therapy, hoping to slow progression. But glaucoma does not stop; it merely pauses between advances. We should no longer wait for damage before acting; early surgical intervention can stabilize the disease before irreversible loss occurs.[7] By using OMNI earlier, I can delay the need for more invasive procedures, maintain ocular surface health, and offer patients the freedom from most or all of their daily drop routines. ■

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Important Product Information

This information is intended solely for healthcare professionals located in the UK and EU. Patients should direct questions to their healthcare professional.

INDICATIONS FOR USE: The OMNI Surgical System is indicated for the catheterization and transluminal viscodilation of Schlemm's canal and the cutting of trabecular meshwork to reduce intraocular pressure in adult patients with open-angle glaucoma.

For important product information including cautions and adverse events, please refer to the full instructions for use available at omnisurgical.com/international

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