

TROUBLESHOOTING FLANGED FIXATION IN COMPLEX SECONDARY IOL AND ARTIFICIAL IRIS SURGERY

Three challenging scenarios show how a forceps needle can simplify haptic and suture externalization when docking becomes difficult.



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The development of flanged intrascleral haptic fixation (ISHF) techniques has changed our approach to aphakic eyes, IOL dislocation, and complex iris-lens configurations. The concept is straightforward: A haptic or suture is externalized, and cautery is performed to create a small flange that can be secured within a scleral tunnel. In routine cases, the double-needle ISHF technique developed by Yamane works well.^{1,2}

In more challenging situations, however, the point of failure is often the same: Introducing a haptic into a small needle can be unpredictable. A slight mismatch between haptic thickness and the needle lumen or a suboptimal working angle can make threading difficult. During externalization, the haptic may slip out, and repeated attempts at threading and externalization can increase the risk of intraocular trauma especially when tissue resistance is encountered.

The Amon forceps needle (G-34502, Geuder) was developed to combine scleral perforation, grasping, and externalization in a single instrument. It is currently available as a single-use device. A 27-gauge needle with a microforceps is housed inside the needle lumen (Figure 1). The distal needle segment is angled at 145° relative to the handpiece. When activated, the forceps opens inside the needle and advances just beyond the needle tip. Closing the jaws retracts the forceps into the lumen to secure the captured material.³

THE INSTRUMENT IN ACTION: THREE CHALLENGING SCENARIOS

Scenario No. 1: Behind a Preexisting Artificial Iris

In certain situations, it may be desirable to preserve a preexisting artificial iris, but doing so could restrict access to the posterior chamber. With the saloon door technique, two controlled radial incisions are made in the artificial iris to create a safe passage



27 G cannula with integrated forceps

Figure 1. The Amon forceps needle.

for a three-piece IOL, and then flanged ISHF is performed using a modified Yamane technique (Figure 2A).⁴

How the Amon forceps needle is employed. Once the IOL has been positioned behind the artificial iris, the externalization step is where surgeon control matters most. Rather than rely on an aim-and-thread maneuver, the surgeon can use the forceps needle to grasp the terminal haptic



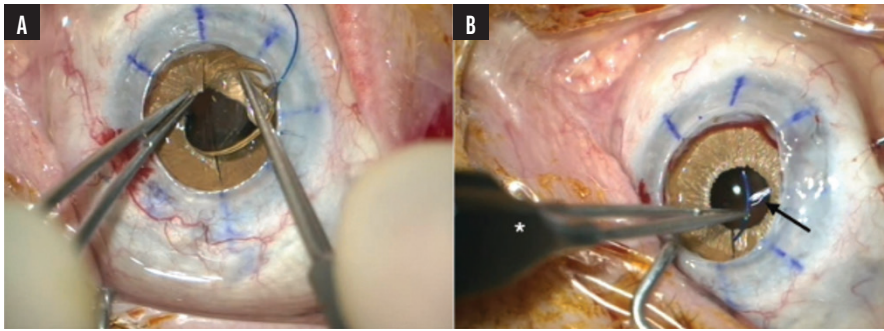


Figure 2. A three-piece IOL is maneuvered through the incised artificial iris into the posterior chamber (A). The Amon forceps needle (black arrow) is positioned with its gripper arm open to grasp the terminal haptic segment (B).

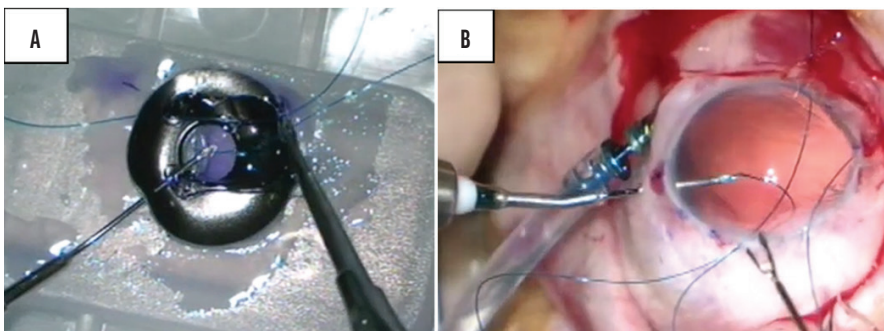


Figure 3. Ex vivo fixation of the IOL to the artificial iris with the forceps needle before implantation (A). Transscleral externalization of the polypropylene suture for Canabrava-style flanged fixation of the artificial iris-IOL complex (B).

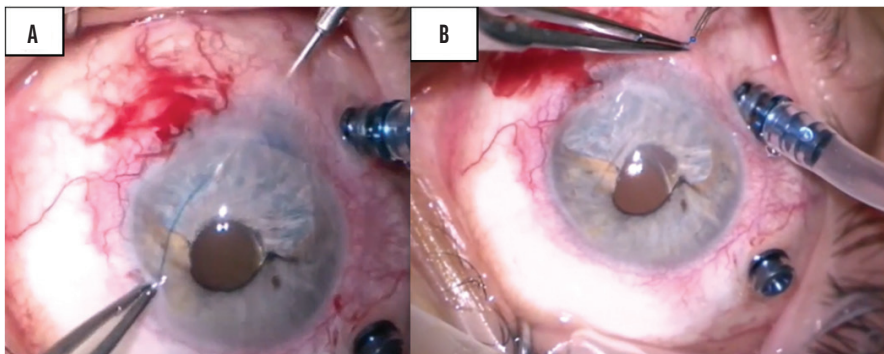


Figure 4. The free end of a prefanged 6-0 polypropylene suture is grasped with the Amon forceps needle and externalized transsclerally to recenter the decentered artificial iris (A). After centration is achieved, the externalized suture is trimmed, and a flange is created close to the conjunctiva for knotless fixation (B).

segment and pull it through the sclera (Figure 2B). This approach was first performed open-sky in combination with penetrating keratoplasty. Scan the QR code to watch a demonstration.

Closed-system variant. A closed-system variant uses the same artificial iris incisions and posterior IOL placement but is performed with an intact cornea and a maintained chamber. This variant was developed to reduce the risk of

chamber collapse and lessen trauma to the iris and artificial iris during haptic capture and externalization. Compared with the open-sky approach, the closed-system variant can reduce globe distortion and hypotony.

Scenario No. 2: Fixating a Combined Artificial Iris and IOL Construct

In the ISHF technique developed by Canabrava, polypropylene sutures

are passed through the eyelets of a one-piece IOL, and four flanges are created—two inside and two outside the eyelets—to allow knotless scleral fixation without flaps or glue.⁵ In eyes with aniridic aphakia, where haptic fixation might not be ideal, a combined artificial iris and IOL construct can be secured with flanged sutures.

In addition to its use *ex vivo* to fixate the IOL to the artificial iris before implantation (Figure 3A), the Amon forceps needle can also be used for transscleral suture externalization for flanged fixation (Figure 3B). Scan the QR code to watch a demonstration.

Scenario No. 3: Recentering a Decentered Artificial Iris

Trauma, tissue remodeling, or progressive loosening of prior fixation can decenter an artificial iris. The implant can be recentered with a single 6-0 polypropylene suture using a flanged, knotless approach.

After the perforation site is marked, a scleral tunnel is created with an Amon forceps needle. The artificial iris is stabilized with a second instrument, and the forceps needle is then used to puncture the peripheral artificial iris at the 6 o'clock position. One end of the 6-0 polypropylene suture is prefanged and positioned in the anterior chamber. The untreated end is then grasped (Figure 4A) and externalized transsclerally with the forceps needle. Traction is applied until the internal flange abuts the artificial iris, allowing controlled recenteration. The externalized suture is trimmed, and a flange is created close to the conjunctiva (Figure 4B). After the forceps is released, the suture is drawn back beneath the conjunctiva and Tenon layer and covered by this tissue. Scan the QR code to watch a demonstration.

WHY GRASPING CAN BE MORE RELIABLE THAN THREADING

ISHF has become an important option in secondary IOL implantation.

Although the Yamane double-needle technique elegantly avoids instrument exchange, docking a haptic into a thin-walled hollow needle can be technically demanding, and the process may be complicated by slippage during externalization, especially when tissue resistance increases friction.

The Amon forceps needle builds on established ISHF approaches by combining perforation and secure grasping in a single maneuver. The instrument may also be useful for recentring an artificial iris and transscleral suture fixation. In difficult situations, this shift from threading to grasping could make ISHF less stressful and more reproducible. ■

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