

Commentary: MYX technique: Best of both worlds - combining extraocular needle-guided haptic insertion and Yamane techniques in aphakia management

Capsular bag implantation of intraocular lens (IOL) is the ideal and most physiological approach in the management of aphakia after cataract extraction, irrespective of the surgical technique used. However, in clinical practice, this is not always the case and inadequate capsular support and resultant aphakia could be due to several preoperative, intraoperative, or postoperative factors. Ocular trauma, metabolic or hereditary conditions like Marfan's, pseudoexfoliation, intraoperative complications, etc. are some of the situations associated with deficient or absent capsular support. This mandates exploration of a suitable aphakia management technique, that not only ensures anatomically ideal IOL placement but also restores the normal refractive status of the eye.^[1]

The most accepted technique currently employed is that of scleral-fixated IOL (SFIOL); however, iris-fixated IOL (IFIOL) and anterior chamber IOL (ACIOL) are also variably used in specific scenarios. None of the techniques is ideal, owing to their associated inherent complications. For example, ACIOLs might lead to endothelial damage and IFIOLs cause persistent inflammation due to iris trauma, while interfering with normal pupillary reactions. SFIOLs, though considered relatively safe, also present complications such as tilt, decentration, or dislocation resulting in a suboptimal visual outcome. Besides, SFIOL is a more technically demanding surgery with a steep learning curve.^[2]

SFIOLs have conventionally been fixed to the sclera, with the use of sutures, however, recent advances have progressively moved in the direction of minimally invasive and sutureless methods.^[3] Modern SFIOL techniques provide shorter surgical

time, quicker postoperative and visual rehabilitation, with equivalent outcomes vis-a-vis traditional methods. These advances provide an advantage of minimizing instrumentation and tissue manipulation, resulting in a shorter learning curve and improved patient outcomes. In just a decade, we have witnessed the evolution of sutureless SFIOL from intrascleral haptic fixation by Scharioth^[4] to intrascleral placement of the flanged haptics by Yamane; thus, fully obviating the need for fashioning even the scleral flaps or a tunnel. Adoption of these advances by both novice and proficient surgeons in mainstream clinical practice is a testament to the obvious advantages— which these modern IOL fixation techniques provide— in the realm of aphakia management.

Yamane's technique employs scleral fixation of a 3-piece IOL by cauterization of the exteriorized haptic tips, to obtain a flange, whose diameter is greater than the haptic itself. This self-supporting system maintains IOL stability in the retro-iris plane, by exteriorizing the haptics through oblique intra-scleral tunnels, diametrically opposite and parallel to limbus. This technique has been useful for foldable 3-piece IOLs, which can be delivered through a 3 mm clear corneal or corneoscleral self-sealing microincision.^[5]

On the other hand, the X-NIT procedure by Bhaskaran *et al.* is performed via a 5.5 mm sclerocorneal incision. It proves, especially helpful in the management of aphakia in manual small incision cataract surgery (SICS) surgery, which is widely performed in India. The most challenging aspect of any sutureless scleral-fixation surgery is the exteriorization of haptics by threading them into the hub of a hollow bent hypodermic needle (26 or 30 gauge). X-NIT helps convert this step from intraocular manipulation into an extraocular procedure, thus proving tremendously helpful for the anterior segment and novice surgeons.^[6]

Bhatia *et al.* in their approach have ingeniously combined both these already remarkable surgical techniques and innovate a novel "MYX" technique, which in essence, is the best of both worlds. Authors claim to have achieved a technique of

SIS with reduced surgical time compared to X-NIT and ease of haptic exteriorization superior to Yamane's technique. In the "MYX" technique the feeding of prolene haptic into the lumen of a 26-gauge needle is done externally (as in X-NIT), and the exteriorized haptic is cauterized to form a flange transconjunctivally (as in Yamane's); thus avoiding the scleral pocket tucking. This would make it easily reproducible with a relatively short learning curve.^[7]

However, it must be remembered that the "MYX" technique, can only be employed while dealing with rigid 3-piece IOL during manual SICS. Since foldable IOLs require cartridge delivery through a 2.8–3 mm microincision, the externalization step of haptic feeding into a 26-gauge needle before IOL delivery into the anterior chamber, will not be possible and Yamane's technique will still hold good in such situations.

It is important to consider that, during any of the above techniques, there remains a real possibility of IOL slippage into the vitreous cavity, which would mandate a separate vitreoretinal procedure. To prevent this, a simple "IOL-sling technique" described by Nath *et al.* could be helpful.^[8] In this technique a monofilament suture-loop passed through the eyelet in IOL-optic, serves as a "rescue anchor," thus preventing IOL drop into the vitreous cavity, should it inadvertently slip during the procedure.

While we await long-term outcomes of these newer techniques and their wider acceptance; we can - for the time being undoubtedly promise simpler techniques for the trainee and expert alike. And during this process continue to benefit our patients, who remain the center-point of all our endeavors, with improved surgical and refractive outcomes.

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