Modified Flanged Intrascleral Fixation of Intraocular Lens for Vitreoretinal Surgeons

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The authors present a case using a modified flanged intrascleral intraocular lens (IOL) fixation technique to rescue a dislocated IOL. A unique feature of their technique is the docking of the IOL haptics with the 30-gauge needle within the vitreous cavity rather than the anterior chamber. Inserting the haptics into the needles requires perfect alignment, which is easier to accomplish within the wider vitreous cavity after a thorough vitrectomy. Therefore, it is possible to insert the haptics into the needles sequentially without using the simultaneous double-needle technique described in our original method. Furthermore, potential damage to the corneal endothelium or the iris is minimized with this technique; however, the necessity for the chandelier is an added maneuver and expense that is worth considering. I usually prefer to dock the haptics in the anterior chamber but have found the authors' technique helpful in some situations.

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Intrascleral IOL fixation rescue is ideal if the dislocated IOL is a three-piece, but I would caution that dislocated IOLs that have been fixed in the bag for a long time are not ideal because the haptics may be deformed. Even if properly fixed into place during surgery, the IOL may subsequently decenter or tilt due to deformation of the haptics. Additionally, if a significant Soemmering's ring is present, this may sometimes be difficult to remove with a vitreous cutter. It was fortunate that, in this case, only a few days had passed since cataract surgery, making this patient the ideal candidate.

The authors showcase nicely a surgical technique that allows for repositioning of a dislocated three-piece IOL without lifting it into the anterior chamber. It is important to confirm there is no deformation of the IOL haptics before proceeding with fixation.

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ABSTRACT: The surgeons have modified the flanged intrascleral intraocular lens (IOL) fixation technique initially described by Yamane et al. to avoid manipulation of the IOL within the anterior chamber. Their technique involves securing the IOL haptics into receiving needles within the posterior segment. Advantages of this technique include repositioning and securing a dislocated three-piece IOL to the sclera without removing the lens or creating a large corneal incision.

Surgical techniques for scleral fixation of an intraocular lens (IOL) in eyes with inadequate capsular support have expanded remarkably during the past few years. A common approach is the sutureless flanged intrascleral IOL fixation technique described by Yamane et al.[1] This involves externalizing IOL haptics through scleral tunnels created with 30-gauge needles and securing them to the sclera using small flanges created with cautery. The elegant use of haptic flanges avoids the need for creating scleral tunnels[2] or using surgical glue[3] and greatly simplifies the surgery.

We have adapted the Yamane technique to be familiar for vitreoretinal surgeons.[4] Our technique involves feeding the IOL haptics into receiving needles with a procedure confined to the posterior segment. With this, we avoid manipulations of the lens within the anterior segment. Our approach allows for refixation of displaced three-piece IOLs to the scleral without creating a large corneal incision and performing a lens exchange. In situations with a dislocated

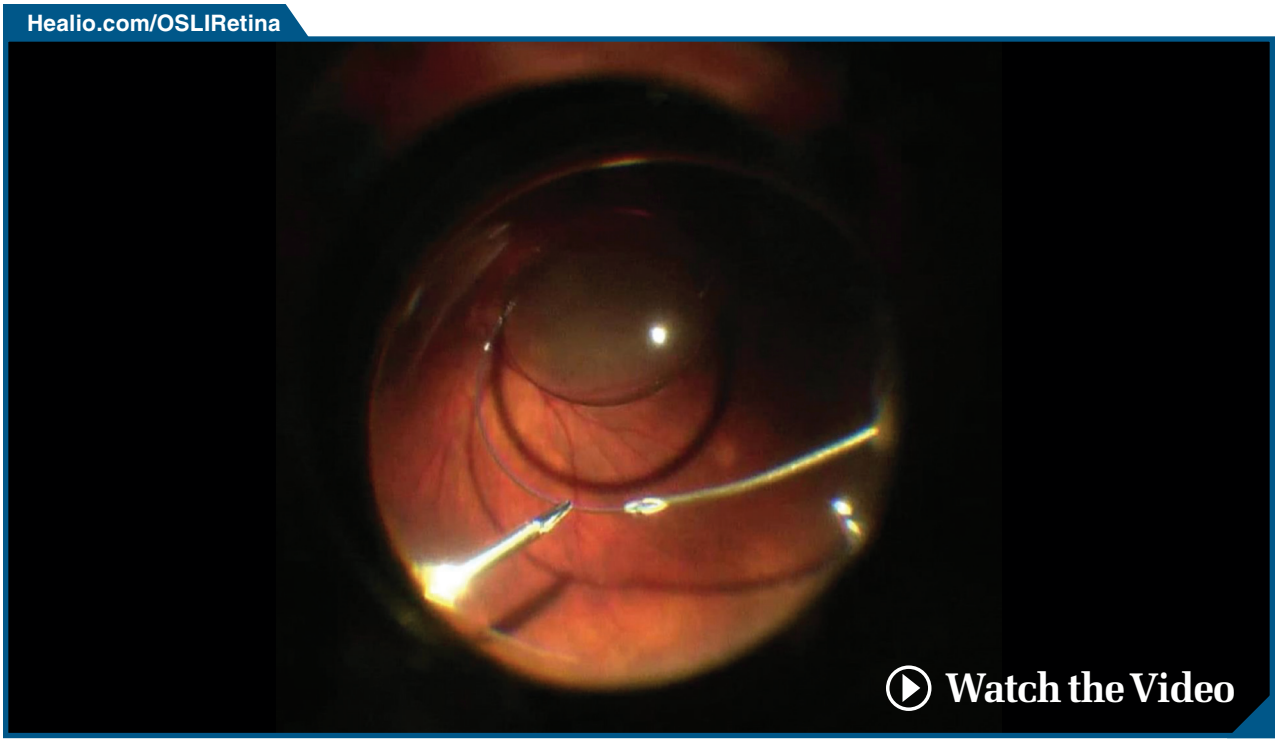

Figure 1. Insertion of the intraocular lens haptic into the receiving needle within the posterior chamber.

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single-piece IOL, it is initially removed through a corneal incision, and a new three-piece IOL is inserted in the eye.

Our patient was a 78-year-old male who presented with a dislocated IOL a few days after cataract surgery. His preoperative visual acuity was 20/50, as measured by Snellen. We proceeded with a 23-gauge pars plana vitrectomy (PPV) by inserting trocars cannulas in the infratemporal, supratemporal and supranasal quadrants at 3.5 mm behind the limbus. A chandelier light source was inserted inferiorly. A PPV was performed, the capsular complex and vitreous adhesions were removed from the IOL, and the lens was allowed to descend within the posterior segment. A 30-gauge needle with a wide inner cannula (TSK Laboratories, Tochigi-Ken, Japan) was inserted through the sclera on the surgeon's right side at a 20° angle and 2 mm behind the limbus. Using a bimanual approach, the IOL was positioned using aspiration from the vitrectomy handpiece, and the first haptic was grasped with the Grieshaber MaxGrip forceps (Alcon, Forth Worth, TX) and fed into the lumen of the 30-gauge needle. A second 30-gauge needle was inserted through the sclera on the surgeon's left side approximately 180° from the first needle, and the second haptic was secured in a similar manner. Both needles were externalized simultaneously to bring out both haptics. The haptic ends were cauterized to create small flanges that were inserted into the sclera. A 360° scleral depressed exam was performed, and no peripheral retinal findings of concern were observed. The trocars and the chandelier light were removed, and the sclerotomies are closed using sutures. Several months after surgery, the patient achieved a final visual acuity of 20/25 without any complications.

It is important to note that other groups have presented similar variations of the Yamane technique. Bonnell et al. recently published their technique where the second haptic was docked to the needle within the posterior segment.[5] The main purpose of this modification was to allow the surgeon to place the second haptic more reliably and avoid uncontrolled needle use in the anterior chamber. This technique requires removal of the dislocated intraocular lens and insertion of a new lens in all cases.

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