The Management of Dislocated Intraocular Lenses

To the Editor:

I read with great interest the article by Kunikata et al. in the July/August 2011 issue of Ophthalmic Surgery Lasers and Imaging. The authors describe a technique addressing the complex issue of managing dislocated intraocular lenses (IOLs) in a closed system without having to create a large corneoscleral incision and perform an IOL exchange. In their procedure, a pars plana vitrectomy is performed. Perfluorocarbon liquid is then injected into the vitreous cavity to float the IOL off the retina and the lens is prolapsed into the anterior chamber. Limbal corneal incisions are made nasally and temporally, and a single 10-0 suture is passed transclerally under two 3-mm partial-thickness triangular scleral flaps. The sutures and the haptics are then exteriorized through the limbal incisions, and the sutures are tied to the respective haptics nasally and temporally outside of the eye. The sutured haptics are then repositioned back into the anterior chamber, and the sutured IOL is repositioned back into the vitreous cavity posterior to the iris. The sutures are finally secured under the scleral flaps.

I am in total agreement that the method described is a simple, effective, and successful surgical technique to manage dislocated IOLs without having to resort to an IOL exchange. The entire procedure can be seen under direct visualization with the surgical microscope. The authors state that earlier techniques that externalized the haptics at the pars plana required special needles and complicated knots. They accurately surmise that externalizing the dislocated haptics at the pars plana may damage the retina because one cannot see the movement of the haptics near the retina when they are being manipulated behind the iris. The authors report rapid visual recovery within a month.

In 2003, we described a new technique for managing dislocated IOLs using 20-gauge vitrectomy. The primary goal was to simplify and demonstrate a novel technique to reposition and fixate completely dislocated IOLs to the sclera behind the iris under direct visualization without having to perform an IOL exchange. The dislocated IOLs in our two patients were free of any capsular remnants. To my knowledge, our article was the first to detail the following series of steps of this novel technique: (1) performing a vitrectomy to release all vitreous attachments adherent to the IOL; (2) prolapsing the dislocated lens from the vitreous cavity into the anterior chamber; (3) passing two transcleral 10-0 sutures under partial-thickness scleral flaps in preparation for 4-point scleral fixation; (4) exteriorizing both haptics and sutures through nasal and temporal limbal keratotomies; (5) suturing both haptics under direct visualization outside of the eye; and (6) repositioning the sutured IOL back into the retrolenticular space behind the iris and suturing it in place.

Our technique allowed for the repositioning and fixation of a completely dislocated IOL under direct visualization. Using two sutures allows for 4-point fixation, reduces the possibility for lens tilt, and diminishes the chance for suture breakage and erosion. Our article was later discussed in Ocular Surgery News, and was presented at the 2005 Western Retina Study Club in Whistler, Canada and in video format at the 2007 meeting of the American Society of Retinal Specialists in Palm Springs, Florida. The video was selected as one of the ten best surgical videos of the meeting and was awarded the prestigious Rhett Buckler award. From there, it was admitted to the video library of the American Society of Retinal Specialists for future viewing. The video was also sent to the American Academy of Ophthalmology, where it was reviewed and accepted into the Academy’s Video Library for other ophthalmologists to view.

I wish to congratulate Kunikata et al. for further advancing and refining this technique using 25-gauge instrumentation in lieu of 20-gauge instruments. I still believe that using two transcleral 10-0 polypropylene sutures will not only allow for 4-point fixation to prevent IOL tilt and astigmatism, but will help to reinforce the tensile strength and prevent suture breakage and erosion from occurring, which is sometimes seen using a single 10-0 suture. The additional technique of stripping the capsular remnants from the IOL is an added improve-
ment and makes this a simple, effective, and reliable technique for the management of dislocated IOLs.

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REFERENCES


Authors’ Reply:

It is a great honor to have received the above letter from Dr. M. Pierre Pang regarding our technique recently published in *Ophthalmic Surgery, Lasers & Imaging*. We consider Dr. Pang’s report on suturing dislocated intraocular lenses (IOL) using 20-gauge vitrectomy to be excellent. However, we did not know of his report during the preparation of our article and thus did not refer to it. We could not find it using the keywords “dislocated intraocular lens and vitrectomy” in the PubMED search system.

The concept of Dr. Pang’s technique is almost the same as ours, and we are in total agreement that his technique of passing two transcleral 10-0 sutures under partial-thickness scleral flaps, in preparation for 4-point scleral fixation, is a novel method for reinforcing tensile strength. However, we think that using two transcleral 10-0 sutures might be slightly complicated, and it is necessary to determine, with a wavefront analyzer or using anterior segment optical coherent tomography, whether his method of 4-point IOL fixation using two transcleral 10-0 sutures could really prevent IOL tilt. Furthermore, his technique requires multiple 3-mm corneal ports and 20-gauge sclerotomy ports, which need suturing. We speculate that the multiple corneal and scleral sutures of his technique could cause postoperative irregular astigmatism. Thus, we think that in the absence of possible astigmatism, it is better to evaluate postoperative IOL tilt after using either our technique alone or a combination of his and our techniques, namely, two transcleral 10-0 sutures with 25-gauge vitrectomy.

To the best of our knowledge, our article was the first to detail the following: (1) a complete no-suture procedure, excluding the two IOL suture points; and (2) the possibility to suture the dislocated IOL in the bag (ie, the lens capsule remnant of the luxated IOL, floated on perfluorocarbon liquid, which could be aspirated and removed by a 25-gauge cutter).

Our technique might not be suitable for cases with soft acrylic one-piece IOLs or a hard cortex in the capsular bag. Ciliary sulcus suturing should not be performed on the soft haptics of acrylic one-piece IOLs. This is because haptic breakage or tearing is possible intraoperatively or postoperatively if these soft haptics are tied tightly to the ciliary sulcus with 10-0 polypropylene sutures. We think that the hard cortex in the capsular bag could be removed with a 23- or 20-gauge cutter.

We speculate that the incidence of IOL dislocation is likely to gradually increase, and that demand for repair of dislocated IOLs will increase with it because of the recent remarkable increase in cataract surgery. Thus, to prepare for occasional IOL dislocation, all IOLs inserted should have a large optic, greater than 7-mm in diameter, and hard haptics shaped suitably for ciliary sulcus suturing. This is especially recommended for patients with weak zonules or pseudoexfoliation syndrome.

We hope that Dr. Pang’s and our techniques can be modified and further improved, creating a simple, effective, and reliable technique for the management of dislocated intraocular lenses.

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