SURGICAL TECHNIQUE FOR SUTURE FIXATION OF AN ACRYLIC INTRAOCULAR LENS IN THE ABSENCE OF CAPSULE SUPPORT

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Inadequate capsule support is a rare but potential complication associated with cataract surgery. Options include leaving the patient aphakic, placing an anterior chamber (AC) intraocular lens (IOL), or suture-fixating a 3 piece foldable acrylic IOL in the ciliary sulcus or the peripheral iris. We now prefer suturing the IOL to the peripheral iris using a modified McCannel technique.

The technique can be accomplished through a 3.5mm central incision. The pupil is constricted with acetylcholine to facilitate papillary capture of the IOL optic. The IOL is folded in a “moustache fold” and inserted through the corneal wound, placing the haptics within the sulcus and positioning the optic above the plane of the iris (Figure 1). A Barraquer sweep is passed through the paracentesis and placed beneath the optic as the lens is unfolded. Additional viscoelastic material is injected into the AC, pushing the iris posteriorly against the haptics. The Barraquer sweep is used to elevate the optic. Both maneuvers facilitate visualization of the haptics, simplifying passage of the sutures.

Using a modified McCannel-type iris-fixation technique, a 10-0 polypropylene (Prolene®) suture is passed on a needle (Ethicon CTC-6) through clear cornea and the iris, under the peripheral aspect of the inferior haptic, then out through the iris and clear cornea (Figure 2). A paracentesis is created over the inferior haptic, and two ends of the suture are pulled through this site (Figure 3). The superior haptic is secured in a similar manner. The sutures are loosely tied with a single throw (Figure 4) and are not locked. The optic is placed posterior to the iris. Using a Sinskey hook, the iris is manipulated to produce a round pupil (Figure 5). Miocchol is injected again to ensure a round miotic pupil (Figure 6-7). The sutures are securely tied.

If there is no capsular support the sutures are tied tight before the optic is placed in the posterior chamber. If necessary, a vitrectomy through a pars plana incision or an anterior vitrectomy through the corneal wound is performed. The retained viscoelastic material is removed from the AC.

Air is injected into the AC and checked for unidentified strands of vitreous. If vitreous is present, a Barraquer sweep is used to break the strands or a more extensive vitrectomy is performed. Then, a repeat injection of air is made into the AC, again inspecting for vitreous. A balanced salt solution is injected into the AC, bringing the eye to a more normal physiologic pressure. The wound is tested for leaks.

The ability to insert and suture-fixate an IOL through a 3.5 mm incision gives the surgeon greater flexibility in treating patients with no capsule support. This technique permits secondary IOL insertion in aphakic patients who are contact lens intolerant, facilitates the management of IOL problems after surgery that require IOL exchange, and allows the surgeon to properly treat patients who develop loss of capsule support at the time of cataract surgery.

References