Recently, my colleagues and I published an article in *Retina* regarding a new technique for posterior dislocated intraocular lens (IOL) rescue and scleral fixation. This technique, which uses a combination of previously described anterior segment techniques while employing the posterior segment surgical instrumentation and skills, obviates the need for a conjunctival opening.

We were prompted to develop this approach to modify a particular scenario involving a patient who presented with pseudoexfoliation and a dropped in-the-bag-complex IOL with a capsular tension ring (CTR). The patient was monocular and had previously undergone trabeculectomy. Our goal was to combine some of the well-described anterior segment surgical techniques with vitreoretinal surgery maneuvers to attempt to rescue this IOL-bag-CTR complex transconjunctivally so as not to disturb all the previous work from the trabeculectomy. We incorporated the technique from Richard Hoffmann, MD, for reverse scleral tunnels and incorporated a 25-gauge vitrectomy. We then used techniques to rescue the IOL bag complex off the surface of the retina, suture-fixate the whole complex, and place the sutures into the Hoffmann pockets.

**The Technique**

Using a standard 25-gauge 3-port vitrectomy setup, we create a reverse scleral tunnel (Hoffman et al) at 3 o’clock. A 2-mm partial-thickness clear corneal incision is made at the corneal limbus using a 0.5-mm guarded blade. The groove is dissected posteriorly into the sclera to 50% of the scleral depth with an angled crescent blade. To improve visualization and to help prevent blade contact with the microscope, the blade angle can be straightened. The tunnel is taken posteriorly perpendicular to the limbus for 3.5 mm and another pocket is created at 180° at 9 o’clock (Figure 1). Paracenteses are made with a 15° blade at 1 o’clock above each pocket (Figure 2).

The next step in this technique is to perform a 25-gauge complete vitrectomy (Figure 2). After shaving the vitreous base, the in-the-bag IOL drops posteriorly onto the retinal surface. Scleral depression is applied at the peripheral retina to ensure that there is no pathology previously unidentified.

Using a careful approach at the haptic-optic junction of the IOL, a 25-gauge disposable end-grasping forceps is used to grasp the capsular bag. This may require puncturing the bag with the open forceps tip. Then, the lens-bag-CTR complex can be lifted into the iris plane (Figure 4).

The lens is then sutured using a needle-docking technique described by Chan et al. A 25-gauge needle is passed 2 mm from the limbus via the pocket bed opposite the hand holding the forceps. The needle is then passed through the conjunctiva, into the globe, and between the haptic and optic, closer to the haptic toward the apex of curvature. A double-armed 9-0 Prolene suture is passed back through the opposite paracentesis to ensure that corneal fibers are not pushed along a false track. After docking the needle to the opening of the 25-gauge needle, it is removed.

**Figure 1.** A second Hoffmann pocket is created on the opposite side from the first, approximately 3 mm in length and 50% depth.
The 25-gauge needle is then passed through the same pocket, but this time slightly closer to the limbus (1.5 mm) and placed inferior to the IOL-bag complex. The needle from the second arm of the Prolene suture is threaded backward through the paracentesis, docked to the 25-gauge needle and removed, “lassoing” the IOL-bag complex.

This procedure is repeated on the opposite side of the IOL-bag complex (Figure 5). However, it will not be able to be captured floating in mid-vitreous and hinged by the suture, so the light pipe is used as a tool to reposition the IOL-bag-CTR complex onto the retina surface. After engaging the IOL and moving it to the iris plane, the lassoing is repeated.

After all 4 sutures have been externalized through the sclera and conjunctiva transecting the pocket and the lens is centered (Figure 6), the needles can be cut off. A Sinskey hook is then used to retrieve a suture end from the opening of 1 of the pockets. This is repeated in the same pocket and then performed twice in the opposite pocket. Now that all suture ends are covered by the scleral pocket roof and externalized at the pocket opening at the limbus, a triple knot is tied on each side and slides under the protective roof of each pocket as they are tightened to ensure centration (Figure 7).

After the lens is centered, a 2-1-1 knot is used and the sutures are trimmed. If necessary, tying forceps may be used inside the pocket to tighten the knots. The 25-gauge trocars can then be removed. In most cases, sutures are not required.

Our Experience
We have used this technique for 6 cases and have approximately 3 months of follow-up showing no significant complications. This method does not require large incisions, such as needed for IOL exchange. The use
of the transconjunctival pockets does not require cutting down of the conjunctiva, the creation of scleral flaps, or the use of cauterization. Many eyes in which the IOL-bag complex dislocates also have pseudoexfoliation that will require trabeculectomy, so it is advantageous to keep the conjunctiva intact in case future surgery is required.

It is important to note that our follow-up is short term for these cases; however, our results appear to be promising.

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