

Hydrodissection would be followed by cortical-cleaving hydrodissection; the latter can leave multiple layers of protective cushions during phacoemulsification. While the hard nucleus is being removed, thin cortical layers can keep the posterior capsule from moving toward the phaco handpiece.

Phacoemulsification should be performed using low vacuum and low aspiration settings and minimum bottle height. The surgeon should make sure that the iris retractors grasp the iris margin as well as the capsulorhexis margin to minimize fluid passage through the gap between iris and anterior capsule. Otherwise, the gap will not be properly sealed, allowing fluid to pass into the vitreous cavity, which would cause the anterior chamber to fluctuate. If the iris and capsular retractors are properly placed, a deep anterior chamber would be formed and the capsular bag would be well distended during surgery. After the cortical material is separated from the capsular bag with an OVD, the freed cortical material is removed with a bimanual I/A device in a tangential direction. When the zonular support is weak, the risk for posterior capsule tearing during cataract extraction is significantly increased. In addition, the capsulorhexis margin can be easily broken when capsule support is aided by iris retractors. If the surgeon cannot ensure the safety of IOL placement in the bag, scleral fixation of the IOL by suturing should be considered. Before the IOL is implanted, the anterior vitreous surface is pushed back to make room for a PC7-0 needle. When the capsule indicates proper posterior positioning of the anterior vitreous surface, a needle can be passed across the chamber and into the ciliary sulcus on the opposite side without breaking the anterior vitreous face. Proper location of the needle tip in the sulcus can be detected by elevation of the sclera, induced by gently pushing it against the scleral wall. The IOL is then tied and inserted in the sulcus. After the lens capsule is removed, the external sutures are tied.

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■ Although the visible superior zonular defect may only appear to extend for 4 to 6 clock hours, the fact that the crystalline lens is tilted suggests a zonular defect extending for at least 9 clock hours, which of course is obscured by the iris. As such, the capsular apparatus would be of no value in fixating a posterior chamber IOL. Given the presence of vitreous prolapse, there is also little hope of removing the cataract by an anterior segment approach (phacoemulsification, manual extracapsular cataract extraction [ECCE], or ICCE) without vitreous loss. For this reason, I would

ask a vitreoretinal surgeon to remove this cataract using a 3-port PPL and vitrectomy. Because of the history of traumatic vitreous hemorrhage, a careful aphakic peripheral retinal examination should be performed intraoperatively, when the option of endolaser retinopexy would be readily available.

In the absence of capsule support, the choice is iris or scleral suture fixation of a posterior chamber IOL or placement of an anterior chamber IOL. This could be done simultaneously with or staged separately from the lensectomy procedure. One of the few large studies to compare the outcomes of these 2 IOL options<sup>1</sup> found better results with the anterior chamber IOL. The latter would certainly be much easier to implant and would be my preference in this case.

The problem with attempting phacoemulsification is that most of the zonules are missing if the crystalline lens is already tilted. Phacoemulsification in the presence of vitreous prolapse risks creating a giant retinal tear, and an anterior surgical approach is more likely to leave retained lens material once the capsule inevitably tears. Both ICCE or manual ECCE would subject the eye to the intraoperative risks accompanying vitreous loss with a large incision, such as suprachoroidal hemorrhage. There is no point in taking these risks given that there is no realistic prospect for adequate capsule support for an IOL.

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## REFERENCE

1. Kwong YY, Yuen HK, Lam RF, Lee VY, Rao SK, Lam DS. Comparison of outcomes of primary scleral-fixated versus primary anterior chamber intraocular lens implantation in complicated cataract surgeries. *Ophthalmology* 2007; 114:80–85

■ My preferred technique would be ICCE with a cryoprobe (with a mechanical loop kept in readiness), limbal insertion of 2 polypropylene iris hooks in the limbus at the 1 o'clock and 11 o'clock positions, and localized anterior vitrectomy with a 25-gauge instrument in the closed eye. After filling the anterior chamber with Viscoat and the retrolental space with Healon GV, I would prepare an 11.0 mm limbal staircase incision and perform ICCE with a cryoprobe (or loop), inject Miochol (acetylcholine chloride) into the anterior chamber, temporarily close the wound, inject Provisc (sodium hyaluronate 1.0%) into the anterior chamber, remove the iris hooks, perform additional anterior vitrectomy if necessary, perform lasso suture (circular suture of the pupil with 10-0 or 11-0 polypropylene) using Provisc if necessary, and insert a rigid poly (methyl methacrylate) iris-claw IOL (Artisan-Artiflex system, Ophtec, or Verisyse, AMO). I would then close