Cataract Extraction in a Patient With HIV and Retinal Complications

BY STEPHEN S. LANE, MD

In 2002, a 37-year-old male was referred to me by a retina colleague for evaluation of decreased vision due to a cataract involving the patient's right eye. His history was significant for bilateral retinitis and panuveitis secondary to human immunodeficiency virus (HIV). Treatment for the HIV included zidovudine (AZT) and ganciclovir as well as other investigational antiviral medications. He had undergone bilateral pars plana vitrectomy with the placement of silicone oil in his right eye, and he had received multiple intravitreal injections of antiviral agents and steroids. Despite his severe HIV, the patient had been in remission for over 8 months, was feeling quite well, and desired whatever improvement in visual acuity he could achieve.

PREOPERATIVE EXAMINATION

The patient's BCVA was barely hand motions in his right eye and was 20/100 in his left eye. The slit-lamp examination of his right eye showed the cornea to be clear. The anterior chamber was shallow. There were scattered peripheral anterior synechiae for 360º, silicone oil droplets on the endothelium, and silicone oil layered in the inferior angle approximately 2 mm in height. There was total seclusion of the pupil, with posterior synechiae around the entire pupillary margin. A surgical peripheral iridectomy was patent at the 12-o'clock position. The pupil was 2 mm in diameter; what little of the lens I could visualize was pure white.

There was no active inflammation, and the IOP measured 12 mm Hg OD and 19 mm Hg OS. The left eye dilated normally. Although the lens showed evidence of old pigmented keratic precipitates, there were only mild nuclear sclerotic and posterior subcapsular changes present.

A dilated examination was only possible for the patient's left eye, and it demonstrated marked diffuse chorioretinal scarring with a perimacular scar. B-scan ultrasonography showed the retina to be flat with no evidence of a retinal detachment in the patient's right eye.

SURGICAL COURSE

Using local block anesthesia and exercising universal precautions with regard to gowning and gloving, I prepared and draped the patient's right eye. After making a paracentesis, I instilled a dispersive ophthalmic viscosurgical device (OVD) and created a clear corneal incision temporally using a diamond keratome. As the OVD was instilled, it replaced the silicone oil (and aqueous), which escaped through the paracentesis. I used a 30-gauge needle to dissect the edge of the pupil free from the underlying anterior lens capsule. Although I was concerned that I might tear the anterior capsule, I was near the center of the lens capsule, so I believed I would be able to incorporate whatever tear I made into the capsulorhexis.

The iris was quite atrophic and stiff and was easily dissected away from the anterior lens capsule. Unfortunately, the iris was so rigid that it could not be stretched but rather tore linearly (a phenomenon I had neither seen before nor have seen since). My concerns of tearing the anterior capsule, however, were short-lived. The iris was dissected free of the capsule using blunt dissection with a cyclodialysis spatula through the patent peripheral iridectomy. As I dissected the iris from the capsule, it became obvious that the central anterior capsule consisted of a pure white, thickened, leathery membrane and that I need not worry about inadvertently puncturing it. Rather, the membrane would have to be cut. I placed an automated vitrectomy device into the anterior chamber through the wound. With irrigation from a cannula placed through the paracentesis, I used the vitrector to cut and enlarge the pupil to approximately 6 mm. As expected, no bleeding of the iris occurred.

The anterior capsule could now be well visualized. The anterior capsule was grayish white in appearance and markedly thickened. Attempts to puncture it with a 27-gauge bent needle to start the capsulorhexis were unsuccessful. Using a microvitreoretinal blade, I was finally able to penetrate the anterior capsule. Tearing the capsule with a capsulorhexis forceps was out of the question, so I used intraocular retinal microscissors to cut an ante-

rior capsulorhexis to approximately 5 mm in diameter. I did so by going through the incision and creating three additional paracenteses so that the proper angle could be achieved. Even with a retinal microscissors, the capsular membrane was difficult to cut and quite adherent to the underlying lens cortex. Because I was quite confident that the posterior capsule would be similar to the anterior capsule, I performed hydrodissection. The lens did rotate but required multiple attempts at hydrodissection as well as viscodissection with a dispersive OVD.

The lens itself was white and chalky in its consistency. It fractured easily but had a leathery posterior nuclear/cortical membrane with bridging fibrous attachments to the overlying nuclear material. I broke these attachments with a blunt chopper placed through the paracentesis. I began emulsifying the leathery posterior lenticular material starting from the outside and working in toward the center until it was completely removed. As expected, the posterior capsule was translucent and thick. As with the anterior capsule, I introduced a microscissors through a paracentesis opening and performed a posterior capsulectomy using several of the paracenteses as portals of entry to the anterior chamber. During this maneuver, several large globules of silicone oil came forward and were aspirated with a cannula. Finally, I used an injector system to place a single-piece acrylic IOL under a cohesive OVD into the lens capsule. I noted a good red reflex at the conclusion of the case.

OUTCOME

By 1 week postoperatively, the patient's UCVA was 20/70, and the patient (and I) was ecstatic. The cornea was clear, and the IOL was in the bag. The retina showed extensive chorioretinal scarring, including the perimacular area. There was no significant postoperative inflammation at any time.

LESSONS LEARNED

First, a surgeon should be prepared to make the capsulorhexis with intraocular microscissors in cases where there is severe preoperative inflammation. Second, silicone oil may need to be removed in whole or in part to aid visualization during the case when present preoperatively. Third, a leathery posterior nuclear layer is best removed by breaking the bridging fibrils from their attachments anteriorly to the lens. Finally, surgeons should never give up on an eye with poor BCVA and a seemingly poor prognosis; many of these patients have surprisingly good vision postoperatively. ■

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