CASE PRESENTATION

In 2005, a 48-year-old woman presented to Vance Thompson Vision and Sanford Health in Sioux Falls, South Dakota, for an evaluation for refractive surgery. Her manifest refractions were -14.00 D OD and -12.00 D OS. Her BCVA was 20/20 OU, and her anterior chambers were quite deep at 3.6 mm. Her endothelial cell count was greater than 3,000 cells/mm² with normal morphology, and her corneal thickness was 540 µm OU.

In July 2009, the Verisyse lens in the patient’s left eye dislocated from the iris and hinged inferiorly, leading to cataract formation and some corneal decompensation (Figure 1). Extraction of the Verisyse lens and cataract extraction with implantation of a posterior chamber IOL was performed, but the patient never recovered good vision because of corneal decompensation.

After 6 months of the patient’s having a visual acuity of 20/200, I performed Descemet’s stripping endothelial keratoplasty (DSEK) in her left eye. At 1 week, she achieved a UCVA of 20/30 OS that had dropped to 20/80 when she returned at 1 month. Unfortunately, she developed significant cystoid macular edema (CME) for which I initiated treatment with nonsteroidal anti-inflammatory drugs (NSAIDs) and continued steroid treatment. In previous cases, my typical protocol had been only aggressive steroid therapy and a fourth-generation fluoroquinolone for patients undergoing DSEK alone. I would add an NSAID for patients who were undergoing combined cataract surgery plus DSEK. Now, I prescribe an NSAID to help prevent CME in all cases.

HOW WOULD YOU PROCEED?

- Would you perform laser vision correction with an excimer laser given this level of correction?
- Would you consider refractive lens exchange as an option?
- Would you implant a phakic IOL to preserve the patient’s accommodative amplitude while correcting the high level of myopia?

SURGICAL COURSE

After a discussion of all the risks, benefits, and alternatives, the patient elected to receive iris-fixated Verisyse phakic lenses (Abbott Medical Optics Inc., Santa Ana, CA) in both eyes. After her initial surgery, her UCVA was 20/20 OU, and she was thrilled.

OUTCOMES

As the CME slowly resolved, the patient developed a significant steroid response, with IOPs around 55 mm Hg. With topical treatment, including a prostaglandin (which I prefer to avoid in patients who have had a recent transplant due to potentially increased inflam-
mation), her IOP decreased to the high 30s. After adding Diamox (Wyeth Pharmaceuticals) to the patient’s treatment regimen, her IOP leveled at the mid-20s. The NSAIDs were discontinued, which resulted in the rejection of the corneal transplant. Restarting steroid therapy caused the IOP to increase to the low 30s, despite the Diamox therapy. I implanted an Ahmed Glaucoma Valve (New World Medical, Inc., Rancho Cucamonga, CA), which lowered the patient’s IOP to approximately 15 mm Hg. The cornea, however, did not recover, so I repeated a DSEK corneal transplant, and the patient recovered a UCVA of 20/40. With mild spectacle correction, she was able to achieve a visual acuity of 20/25.

**DISCUSSION**

Phakic IOLs have ushered in a new era of improved vision for patients with high amounts of myopia. However, it is important to educate the patient about the possibility of dislocation and loss of endothelial cells over time. This case illustrates the need for prompt intervention in the setting of a dislocated phakic IOL. Although this patient was able to regain good visual acuity and was happy with her ultimate outcome, it took a significant effort and multiple surgeries.

I prefer tube shunts in the setting of endothelial transplants, because these devices allow more controlled surgery and permit me to repeat the DSEK in the future more easily compared to eyes with trabeculectomy. Typically, I place a small amount of viscoelastic in the lumen of the tube when performing the DSEK to allow better pressurization of the anterior chamber by the air bubble. When performing tube shunt surgery on DSEK patients, it is important that the tube be short and directed away from the cornea.

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