UNSTABLE CAPSULE
Glued posterior chamber IOLs and anterior chamber IOLs emerge as alternatives to sutured IOLs

by Howard Larkin in Chicago

The procedure reduces complications associated with previous closed-loop designs, such as secondary glaucoma, elevated intraocular pressure, pupil distortion, endothelial cell loss, cystoid macular oedema, pain and worse best corrected vision. And with the earliest examples implanted more than 30 years ago, iris-fixated anterior chamber lenses remain a viable choice, Dr Budo added. Still, anterior chamber lenses are riskier and are not suitable for many patients.

“We use these lenses only if in-the-bag or sulcus fixation is not possible,” he said. The typical patient presents with a subluxated implant in the capsular bag years after routine cataract surgery, Dr Hannush said. Pseudophakodonesis is often seen with eye movement. His current procedure involves two scleral flaps, pars plana infusion or an anterior chamber maintainer, anterior vitrectomy, a three-piece foldable IOL, scleral grooves and fibrin glue to fix the haptics to the sclera.

Dr Hannush cuts two scleral flaps on opposite sides of the eye, usually 12 and 6 o’clock, and carves grooves in their bases to accommodate insertion of the lens haptic ends. He performs a 25-gauge pars plana vitrectomy, entering 3.5mm posterior to the limbus, prolapses the implant into the anterior chamber where it is cut and extracted, and follows with a more complete anterior vitrectomy.

The folded lens is inserted using a bimanual “handshake,” held by forceps on either side. Dr Hannush feeds the haptics through the sclerotomies into the pre-cut grooves. Air is pushed into the anterior chamber where it is cut and extracted, and follows with a more complete anterior vitrectomy. The flaps are closed and conjunctiva pulled over. Complications are few, but include occasional iris optic capture, hyphaema, decentration, haptic disinsertion and hypotony, Dr Hannush noted.

“Advantages are small self-sealing incisions when using a foldable IOL, a well-formed globe throughout the procedure with less risk of iris prolapse. It also avoids suture-related complications.”

The technique also avoids complications associated with the large surgical wounds needed for rigid PMMA lenses, such as leakage, shallow anterior chamber and induced astigmatism, Dr Hannush added. And it can be combined with other procedures, such as endothelial keratoplasty.

Anterior chamber lenses

In cases where posterior lens placement is not possible, anterior chamber IOLs may be viable. But careful patient selection and preparation are essential, Dr Budo said. For all lenses, the anterior chamber must be deep enough to ensure adequate clearance from the corneal endothelium. However, this problem is less likely in aphakic patients than phakic patients. The anterior chamber also must be completely free of vitreous, and a meticulous vitrectomy should be performed if necessary, Dr Budo said.

For angle-supported lenses, the entire angle must be completely intact, Dr Budo added. Iris-fixated types require only two opposite points of stable iris tissue.

Advantages of iris-fixated lenses include one-size-fits-all for adults, and the option to orient the lens at any angle, unless a toric model is being used to correct astigmatism, Dr Budo said. A smaller version is available for paediatric use. The lenses can be explanted easily at any time and have remained in place with no iris atrophy for more than 30 years in some patients. In aphakic eyes, the lens surface is also usually far enough from the endothelium that long-term cell loss is minimal.

A disadvantage of iris-fixated IOLs is that an incision of 5.0mm or so is needed to insert a rigid PMMA lens, Dr Budo noted. However, a flexible model is coming onto the market. Inserting an iris-fixated lens also requires skill. Success with the lens is almost entirely surgeon-dependent, he said. Angle-supported lenses are easier and quicker to insert. But complication risks are much higher, and long-term monitoring is required, Dr Budo said.

On the upside, long-term results are good, particularly with iris-fixated lenses, and monitoring is easy because the entire lens is visible, he noted.