Oily IOLs

By Alan Brown, MD

Silicone IOLs are uniquely suited for certain patient needs. Toric plate IOLs have significantly simplified our ability to treat larger amounts of astigmatism, and multifocal silicone IOLs can treat presbyopia. Yet surgeons are cautious with respect to silicone IOLs and the risk of silicone oil adhesion if a patient requires major retinal surgery years after their IOL implant. In 1997 John Shepard presented research (the ASCRS meeting) which indicated that about 45% of IOLs implanted in the U.S. were silicone.

If the incidence of retinal detachment is about 1%, and the need for silicone oil to repair the detachment is at 1%, the combined risk of an eye having silicone oil is roughly one in 10,000 (0.01 x 0.01 = .0001). If about 30% of eyes require YAG capsulotomies, the risk drops to one in 30,000. With such limited risk, surgeons should feel more comfortable using silicone IOLs in patients with healthy posterior segments.

This case demonstrates a means for dealing with silicone oil adhesion to a silicone IOL in the rare patient who unexpectedly requires complex retinal surgery years after IOL implantation.

This 59-year-old female underwent uncomplicated silicone plate IOL implantation in 1997. Two years later she developed a retinal detachment with proliferative vitreoretinopathy which eventually required a vitrectomy and silicone oil placement. When it was removed in 2000 the oil migrated onto the anterior surface of the IOL despite an intact posterior capsule. The patient was referred to me with the request for an IOL exchange. Four years of fixation fibrosis through

Figure 1. Preop photo reveals a large drop of silicone oil over the optic of a silicone plate IOL.

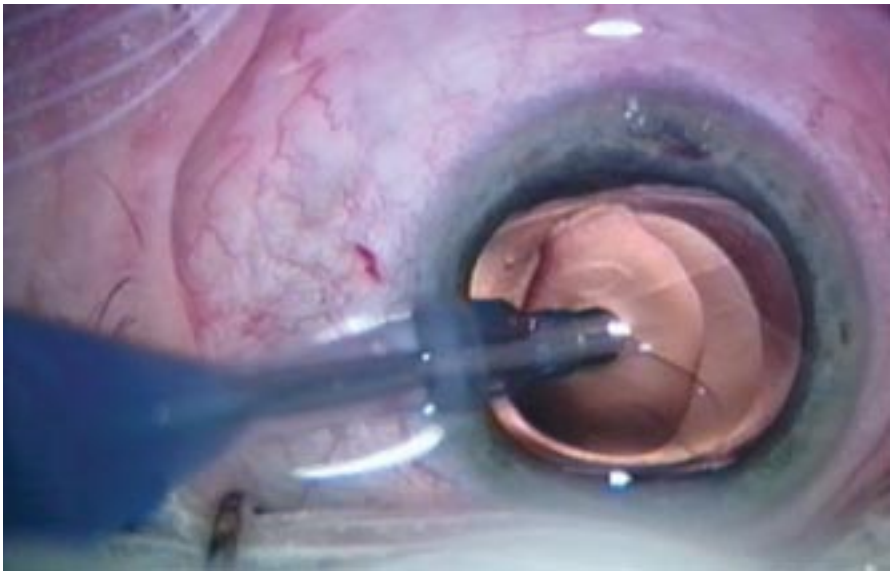

Figure 2. The phaco tip is introduced bevel down into the silicone oil and on top of the IOL.

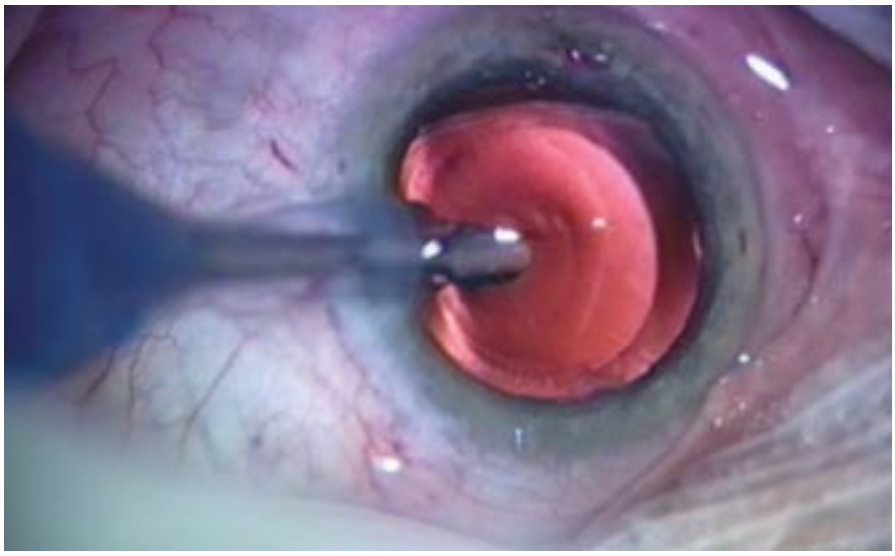

Figure 3. One-half of the silicone oil has been phacoemulsified. Oil on the upper aspect of the photo (lower IOL) is being removed.

the haptic opening would make removal of the IOL difficult. Although I knew that simple aspiration of the oil would fail, I reasoned that perhaps high power phacoemulsification with high vacuum and aspiration would save the patient the trauma of the IOL exchange.

Figure 1 demonstrates the sizable silicone oil droplet on the IOL with the patient's refraction at a spherical equivalent of -22.50 D. An Alcon Legacy machine was used with a bevel down technique at 70% power, 300 mm vacuum, and 30cc/min of aspiration. The silicone oil was easily emulsified and aspirated with ultrasound.

Figure 4. The last third of the oil is phacoemulsified.

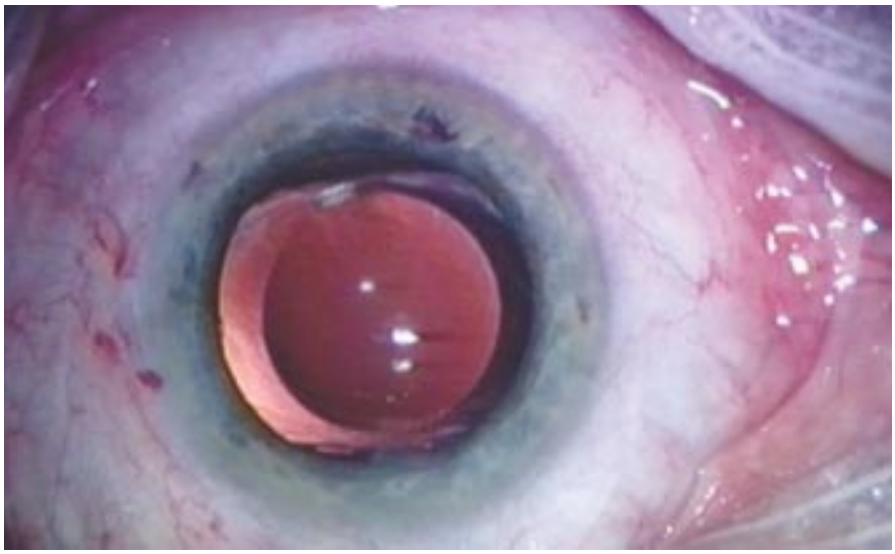

Figure 5. Silicone oil has been completely removed without damage to the silicone IOL.

Figure 5 demonstrates the patient's silicone plate IOL essentially clear of any silicone oil with a spherical equivalent of –1 D. The patient did not require an IOL exchange.

Silicone IOLs can present other challenges to retinal surgery such as condensation on the IOL when intraocular gas is used. However, in most patients the risk of retinal surgery is remote. The refractive benefits of certain silicone plate IOLs are clearly established. I hope this technique for removal of silicone oil from silicone IOLs will prove useful to both anterior and posterior segment surgeons who are called to help the rare patient who experience this condition. RRS

All images courtesy Alan Brown, MD.