ACIOL and UGH Syndrome

BY ALAN N. CARLSON, MD; GARRY P. CONDON, MD; JASON JONES, MD; AND THOMAS A. OETTING, MS, MD

CASE PRESENTATION

A 65-year-old man is referred to you after cataract surgery and vitrectomy complicated by several months of inflammation and ocular hypertension.

The patient had no past history of autoimmune disease or uveitis. He underwent cataract surgery about 8 months ago for a visually significant cataract. His cataract surgery was complicated by loss of the posterior capsule and eventual loss of the majority of the crystalline lens material into the posterior pole. The patient was then referred to a retina surgeon who performed a pars plana vitrectomy with lensectomy to remove the residual lens material. Unfortunately, during the procedure, the iris was damaged at about the 11-o'clock position by the vitrectomy instruments. An ACIOL was implanted.

Initially, the postoperative course was unremarkable, with good recovery of visual acuity, but the patient then experienced episodes of increased IOP and inflammation. He was diagnosed with uveitis, glaucoma, hyphema (UGH) syndrome and is referred to you for further management. On examination (Figure 1), the ACIOL is tilted, and one of the haptics is poorly positioned in the area of the damaged iris. No residual capsule is present to support an IOL.

How would you proceed? Would you replace the IOL, and if so, how would you secure the IOL without a capsule?

—Case prepared by Thomas A. Oetting, MS, MD.

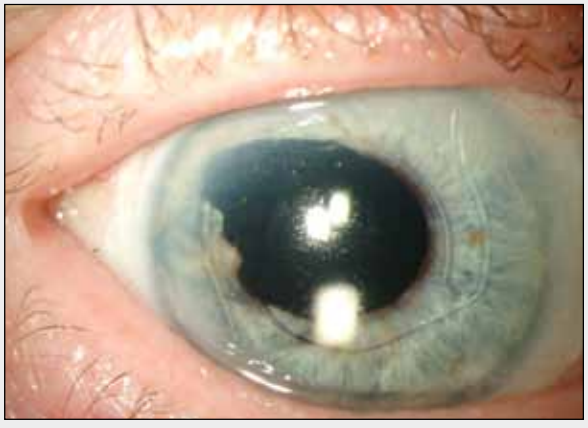

Figure 1. The initial slit-lamp examination shows an ACIOL that is mildly tilted and iatrogenic damage to the iris.

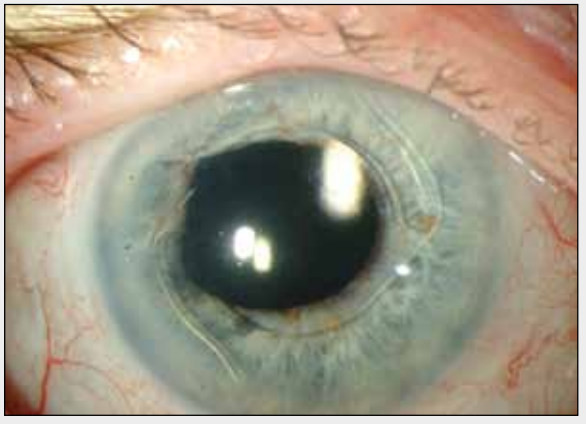

Figure 2. Slit-lamp examination of the eye after repair of the iris and repositioning of the existing ACIOL.

ALAN N. CARLSON, MD

This patient has undergone complex cataract surgery with additional surgery resulting in a torn iris and iris sphincter, a Kelman-style ACIOL, a tucked iris temporally, an irregular and eccentric pupil and UGH syndrome. *UGH syndrome* was originally used as a somewhat generic term to encompass the collective responses to poorly designed or poorly finished IOLs in the earlier days of cataract surgery.[1] Thanks to individuals like the late David J. Apple, MD, and the resulting

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> —Alan N. Carlson, MD

progress in industry, the design, sizing, finish, and quality of IOLs have greatly improved. Even the Kelman-style ACIOL modeled after the original Choice Mark VIII has made the selection of angle-supported ACIOLs a viable alternative when correctly sized and properly inserted into an otherwise normal angle.[2]

The two most obvious concerns in Figure 1 are the tucked iris temporally causing synechiae and pupillary distortion, placing the patient at added risk for inflammation (ie, uveitis, cystoid macular edema [CME]) and problems with outflow (secondary glaucoma). My second concern, noted nasally, is that this version of the IOL may have an eyelet configuration, which further contributes to inflammation and scarring due to a "cheese wiring" effect of the IOL on the tissue.[2] This configuration can also make the IOL's removal more challenging. Given his presentation and appearance, it is unlikely that this patient will be able to avoid future problems and will likely benefit from the IOL's removal and exchange along with additional vitrectomy if necessary.

It is advisable to obtain the initial surgical notes and to also see if the patient may have been taking tamsulosin or a related agent that could contribute to making the original and subsequent surgery more challenging. Although it would be possible to create a situation where an ACIOL would be a viable choice, I am inclined to recommend in this particular case a PCIOL utilizing transscleral support. I would discuss with the patient and document in his chart that this is an off-label procedure using an otherwise FDA-approved device. I would use suture support (Prolene 9–0 or a 10–0 polypropylene suture on an STC-6 needle [both from Ethicon, Inc.]) or some of the recently developed sutureless procedures that fixate the IOLs' loops within scleral tunnels.[3-6] Once the PCIOL is properly and securely in position, I would address the tear in the pupillary sphincter using two to three interrupted McCannel-style sutures, again using an Ethicon 10–0 polypropylene suture on an STC-6 needle. I have, in general, allowed patients to continue low-dosage aspirin, but I make sure they are not aggressively anticoagulated before undertaking these cases. Long-standing iris damage can lead to progressive tissue atrophy making suture repair less successful.

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GARRY P. CONDON, MD

This patient demonstrates an intolerance and malpositioning of the ACIOL resulting in UGH syndrome. Assuming he has been unresponsive to the usual course of intense anti-inflammatory therapy, including topical corticosteroids and nonsteroidal agents, it is my opinion that this ACIOL must be explanted. I would want to know whether the patient exhibits any clinical signs of CME or increasing thickness of the macular area on optical coherence tomography. This information would help me to decide whether to proceed with a single surgical procedure involving an IOL exchange with iris repair or a staged procedure in which the IOL would be removed, followed by a continued course of anti-inflammatory therapy until the aphakic eye was entirely quiet and without evidence of any CME.

My preferred approach in a case like this one would involve a combination of the ACIOL's explantation, pupillary repair, and the implantation of a three-piece acrylic iris-fixated IOL. I believe it would be perfectly reasonable simply to remove the ACIOL and to allow the eye to quiet down before proceeding with additional surgery. This approach would be particularly important if there were any evidence of CME. The patient might tolerate a contact lens in the interim, and that is certainly an option for long-term management. Once the eye was quiet, I would consider combining pupillary repair using modified McCannel suturing with the implantation of the three-piece acrylic IOL as a combined procedure.

I would begin the surgery by creating a smaller pupil with McCannel suturing in the 11-o'clock region to allow optic capture of the three-piece IOL as it is unfolded, with the haptics behind the pupil and the optic anterior to the iris. A 3-mm-wide lens glide could be used to stabilize the IOL in this configuration if the pupil remained large despite initial suture repair. I would use modified McCannel sutures with Siepser sliding knots to secure the haptics to the far peripheral iris, typically in the vertical meridians, assuming a tem-

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poral clear corneal approach. Once the IOL was secure, the optic could be pushed back through the pupil, and additional McCannel sutures could then be placed to finalize the reconstruction of the pupil. There appears to be sufficient iris tissue to achieve all of this. A somewhat deformed pupil would be the result, but it would likely be dramatically more functional and cosmetically more appealing. I would recommend prolonged topical anti-inflammatory therapy and taper it slowly.

JASON JONES, MD

Surgery is the definitive option for this patient. I would discuss the usual surgical risks, and knowing the health of the optic nerve and endothelium would be important. I assume no vitreous is in the anterior chamber. Gonioscopy may reveal details of the lens' placement and angle anatomy that are contributing to the problem.

Two surgical options exist: reposition or exchange the ACIOL. Because modern ACIOLs are well finished and well tolerated if placed and sized properly, I would first attempt repositioning with intraoperative gonioscopy; if the anatomy were still problematic, I would exchange the lens. Under viscoelastic tamponade, each haptic would be retracted and slightly rotated counterclockwise using a Sinskey hook, a movement alternately repeated. As the haptics rotated from their original position, I would assess the footplate's position by gonioscopy and perform further rotation. Viscoelastic and mechanical stretching of the iris out of the angle with a microforceps should aid this evaluation.

If the lens did not easily rotate or if the angle-related problems persisted despite rotation, then I would exchange the lens. After fashioning a temporal scleral tunnel incision that was 6 mm wide, I would remove the IOL. I generally prefer an iris-sutured lens except when the pupil is significantly distorted or if the eye has been thoroughly vitrectomized (both present here). A sclerally fixated lens would be my preference in this case. Either I would pass 8–0 Gore-Tex sutures (W. L. Gore & Associates, Inc.; off-label usage) through Hoffman pockets to suspend a single-piece PMMA IOL with haptic eyelets, or I would perform intrascleral haptic fixation of a three-piece acrylic IOL with the Scharioth method. Scleral fixation á la Sharioth or with sutures is off label for the IOL and sutures. With either surgery (repositioning or exchange), once the lens was in a satisfactory position, I would close the superotemporal iris defect with a Siepser sliding knot using 10–0 polypropylene.

WHAT I DID: THOMAS A. OETTING, MS, MD

I decided to keep the current IOL in the eye. Because the primary issue with the IOL's stability was the damaged iris, I repaired the tissue with a single 10–0 Prolene suture using the Siepser McCannel technique. I took care not to inadvertently suture the iris to the haptic. After repair of the iris and repositioning of the IOL into a stable position (Figure 2), the symptoms of UGH syndrome disappeared. ■

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