

CATARACT

Special Considerations in Cataract Surgery: Uveitis

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INTERVIEWING ROSA A. BRAGA-MELE, MD, JAMES P. DUNN JR., MD, THOMAS A. OETTING, MD, AND RUSSELL N. VAN GELDER, MD, PHD

When it comes to cataract surgery in a patient with a coexisting disease, uveitis poses a particular challenge. “The most critical thing to recognize is that the uveitis patient should not be treated as a run-of-the-mill cataract patient,” said Russell N. Van Gelder, MD, PhD, at the University of Washington in Seattle. “Failure to take precautions to prevent the uveitis from flaring up due to the trauma of cataract surgery is asking for complications.”

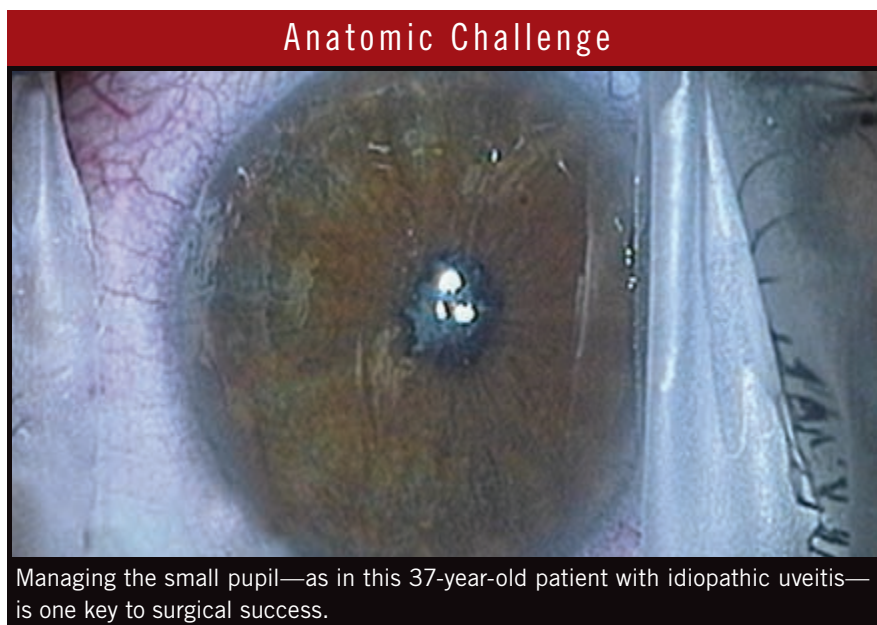
James P. Dunn Jr., MD, at Wills Eye Hospital in Philadelphia, concurred. “The surgical management of the patient with uveitis, although critical, is less important than managing the patients medically before and after surgery.” He added, “You can be the world’s best surgeon, but if you don’t have the uveitis controlled beforehand, or you don’t pay attention to controlling the uveitis afterward, you’re going to have a higher chance of ending up with a bad outcome.”

Medical Prophylaxis

The following precautions are key to successful visual outcomes in uveitis patients undergoing cataract surgery, the experts said.

A quiet eye for three months.

“Generally, you want the uveitis to be quiet for three months and to eliminate the macular edema before performing cataract surgery,” Dr. Dunn said. However, good controlled trials that consistently support this para-



digm are lacking, he said. Some experts feel that two months with a quiet eye is sufficient, especially for cases of rapidly responsive uveitis without macular edema; others prefer longer than three months, he said.

Treat the inflammation. If the preoperative clinical exam shows active uveitis, it is appropriate for the comprehensive ophthalmologist to try to control it by intensifying the topical corticosteroid dosing regimen and adding oral corticosteroids, Dr. Dunn said.

Refer refractory cases. However, if the stronger medical therapy does not begin to suppress the inflamma-

tion within several weeks, the patient should be referred to a uveitis specialist for more aggressive therapy prior to the cataract surgery, Drs. Van Gelder and Dunn agreed. “As a general guideline, once you get past the use of corticosteroids, that’s when you should be sending patients to the uveitis specialist,” Dr. Dunn said.

Consider a workup by a specialist.

Even if the uveitis appears to be well controlled, Dr. Van Gelder suggested requesting a complete workup from a specialist prior to the cataract surgery. This will ensure that important disease etiologies are not missed and will give extra assurance that the surgery will

Special Considerations in Cataract Surgery is an occasional series on challenging situations in cataract surgery.

not be performed in someone with subtly active disease, he said. In addition, the general ophthalmologist might also consider screening patients with spectral-domain optical coherence tomography (SD-OCT), which has been shown to be effective at finding subclinical retinal edema, he added.¹

Use corticosteroids. With a few exceptions in patients whose disease does not respond to steroids (e.g., those with Fuchs uveitis), most patients with a history of uveitis should receive oral and topical corticosteroids before and after surgery to suppress inflammation that might cause a disease flare or pseudophakic macular edema, Drs. Van Gelder and Dunn agreed.

Although there's "no one standard regimen," Dr. Dunn said, protocols "usually include some combination of ramping up steroid eyedrops one week before surgery, oral steroids two to seven days before surgery, and, often, giving intravenous and periocular or intravitreal steroids at the time of surgery. This is followed afterward by some combination of topical and oral steroids, tapering down according to the degree of inflammation."

Dr. Van Gelder said he puts patients, some of whom have been on a maintenance regimen of prednisolone acetate 1 percent drops, on a stronger topical steroid such as difluprednate four times daily about one week before surgery. He begins oral prednisolone (0.05 to 1 mg per kg) three days before surgery and tapers the daily dose over one week. The intensified prophylaxis with topical difluprednate continues for as long as six months postoperatively, depending on the degree of postop inflammation, he said. Dr. Dunn said his approach is similar.

Consider using NSAIDs. Because uveitis puts the eye at risk for pseudophakic cystoid macular edema, some surgeons add a topical nonsteroidal anti-inflammatory drug (NSAID) such as ketorolac 0.5 percent, Dr. Dunn said.

Patients generally are told to use NSAID drops (with ketorolac, one drop four times a day) starting the week before surgery, to avoid using the

NSAID during the first postop week while the epithelium heals, and then to resume the NSAID for one to two months postoperatively, depending on the physician's assessment of the risks.

"Most of us feel that NSAIDs are not particularly helpful for uveitic macular edema in general. But they can help reduce the risk of the edema that the surgery itself would contribute to," Dr. Dunn said.

Look for PCO sooner. Posterior capsular opacification (PCO) occurs earlier in uveitic eyes, Dr. Dunn said. Nd:YAG laser capsulotomy may need to be performed sooner after surgery in symptomatic patients than it would be in nonuveitic pseudophakic eyes, he said. However, the capsulotomy should be deferred if the uveitis is still active or if there is CME, he said.

Particular Challenges and Concerns

Anatomic challenges. It is important to minimize trauma to the iris during the cataract surgery, Dr. Dunn said. "If you get bleeding, if you traumatize the iris, you will tend to have more synechiae after surgery. Cosmetically, the eye won't look as good, and the damage probably also will increase the risk of macular edema."

Moreover, certain common anatomic characteristics of the uveitic eye add complexity to the cases, he and Dr. Van Gelder said. These include the following.

- **The pupil.** It may dilate poorly due to scarring, have an irregular shape, be small, or be large but unstable. "Managing the small pupil is the key intraoperative aspect," Dr. Dunn said. He advises using a pupillary ring or other device to expand or stabilize these problem pupils. (His personal preference is for iris hooks.)
- **Limited intraocular views.** This can be caused by the small pupil, band keratopathy, calcium deposits on the corneal surface, or vitreous debris. In the latter case, concurrent vitrectomy might be required, Dr. Dunn said.
- **Weak zonules and a floppy iris.** Commonly seen in uveitic eyes, especially in those with previous vitrectomy, these characteristics can impede a

good capsulorrhexis and make the iris prone to bleeding, Dr. Dunn said. "You may need to use a capsular tension ring [CTR] to stabilize things."

Concurrent surgery? Because uveitis can worsen coexisting ocular problems such as glaucoma, epiretinal membrane, and vitreous debris, concurrent surgical correction of these conditions with the cataract surgery may be considered, Dr. Dunn said. Combined surgery in a patient with glaucoma might also be indicated if the patient is known to be a strong steroid responder, he said.

But consensus on when to perform concurrent surgery is lacking. "These questions don't have a single best answer. You may first have to wait to see how the patient does after cataract surgery," Dr. Dunn said.

IOLs for adults. In the past, ophthalmologists were taught that aphakia was best for uveitic eyes, to avoid postoperative complications associated with the intraocular lenses (IOLs) of the time. Today, however, advances in phacoemulsification and in IOL design have made it possible for most adults with uveitis to have any foldable, one-piece or three-piece monofocal IOL, Dr. Dunn said. However, he and Dr. Van Gelder added certain caveats:

- **Plate-haptic IOLs.** Dr. Dunn advises against plate-haptic IOLs because of the likelihood that a uveitis patient will require an Nd:YAG capsulotomy later, which increases the risk that this type of lens could dislocate posteriorly through the capsular opening.
- **Multifocal/diffractive IOLs.** These are usually not recommended because irregular pupils or IOL decentration, both of which are more common in eyes with uveitis, can cause glare and halos. Moreover, these IOLs can present other difficulties (see "Think Twice About Multifocal IOLs" below).
- **Silicone IOLs.** "Think carefully about silicone lenses," Dr. Van Gelder said. "I would avoid these if there is any retinal pathology that might require vitrectomy with possible oil later, such as old ARN [acute retinal necrosis] syndrome."

IOLs for children? At present,

What About Alzheimer's Patients?

Alzheimer disease and other dementias present special challenges for the ophthalmic surgeon, including difficulty assessing visual acuity. On one hand, poor vision is associated with cognitive decline.^{1,2} On the other, dementia has been found to increase the risk of operative complications in patients who undergo cataract surgery.³

Some researchers recommend using general anesthesia for the cataract patient who has Alzheimer disease.³ However, Dr. Braga-Mele said she has had positive experiences performing cataract surgery without general anesthesia in Alzheimer's patients who have cheerful, nonaggressive personalities and can follow directions during surgery. She avoids general anesthesia when possible, for fear of causing further cognitive decline.

"I try to use conscious sedation," she said. "I use tape to hold their forehead down to remind them not to move, and we get the anesthesiologist to hold their hand during surgery. I talk to them through the entire surgery to remind them where they are."

Dr. Braga-Mele added, "I actually do surgery on a lot of Alzheimer's patients, and they are some of the most satisfying patients I have had. They are some of the happiest patients, with the happiest families, because when you give them their vision back, some of their cognition comes back, too. It's fantastic. Some of them start to smile and to interact with their families for the first time in years."

1 Rogers MA, Langa KM. *Am J Epidemiol*. 2010;171(6):728-735.

2 Tamura H et al. *J Cataract Refract Surg*. 2004;30(3):598-602.

3 Blomquist PH et al. *J Cataract Refract Surg*. 2012;38(2):208-114.

young children are the only uveitis patients who are often left aphakic after cataract removal, Dr. Dunn said. This allows development of the eye and the visual system before an IOL is implanted, which usually takes place when the child reaches school age. Until then, any refractive error is corrected with ultra-soft extended-wear contact lenses (or, in bilateral cases, with aphakic spectacles), he said.

• **When it's time for an IOL.** A primary posterior capsulotomy should be performed when the IOL is implanted. PCO is common in young children, and a secondary Nd:YAG capsulotomy would expose them to the risks of general anesthesia again, Dr. Dunn said. Some surgeons prefer to use a three-piece IOL in this situation, leaving the haptics in the capsular bag and capturing the optic posterior to the capsular opening, he said.

Plan for the Future

Think twice about multifocal IOLs. A multifocal lens reduces the amount of light available at different distances, a characteristic that makes it a poor choice for any patient with a coexisting

disorder that reduces visual function, said Rosa A. Braga-Mele, MD, at the University of Toronto.

"I would never use a multifocal IOL in patients with corneal disease, glaucoma, or coexisting retinal issues such as confluent drusen, macular degeneration, or macular membranes," Dr. Braga-Mele said. "Because you have an ocular system that already has decreased contrast sensitivity, and a lens that decreases contrast sensitivity, you would not be able to maximize visual outcomes."

Dr. Van Gelder advises surgeons to "think twice" about multifocal IOLs in uveitis patients, because they might need retinal surgery later. "I would be cautious, particularly in patients with posterior uveitis—that is, choroiditis and retinitis. There is a need to view the retina carefully in those conditions, and the view for the surgeon just is not as clear [when the patient has multifocal IOLs]. This can make caring for those patients more difficult down the line if the choroiditis becomes active."

Think twice about weak zonules. Thomas A. Oetting, MD, at the Uni-

versity of Iowa, worries about the possible progressive nature of some zonulopathies such as pseudoexfoliation (PXF) in uveitis patients. A single-piece acrylic IOL in the bag is harder to suture later on than is one of the following options: 1) a three-piece IOL in the bag, 2) a three-piece IOL in the sulcus, or 3) a CTR plus a single-piece acrylic IOL in the bag, he said.

Dr. Oetting said he prefers to plan for the future by placing a CTR and a single-piece IOL in many patients with weak zonules. Another option is to use a three-piece IOL with the optic in the bag and the haptics in the sulcus, he said.

"Patients are living longer, and we've had this rash of PXF patients who, 10 years after their lens implant, have the bag and the lens complex just floating around in the eye," Dr. Oetting explained. "So while I'm doing the cataract surgery, I'm partially thinking about getting through the case with the weak zonules today—and partially thinking about how to set myself up for 10 years from now, so that either the IOL can be sutured in place easily or the lens will be more secure over the long term." ■

1 Bélair ML et al. *Am J Ophthalmol*. 2009;148(1):128-135.

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