

The Crystalens and a History of Retinal Detachment

BY UDAY DEVGAN, MD; WILLIAM B. TRATTLER, MD; AND JEFFREY WHITMAN, MD

For each installment of "Today's Topics," section editor John F. Doane, MD, will identify a hot-button topic in cataract and refractive surgery and ask several experts to share their thoughts.

Would you consider the Crystalens (Bausch & Lomb, Rochester, NY) for a patient who has a cataract and a history of retinal detachment? What pearls can you offer on the placement of the Crystalens in light of pneumatic retinopexy? What would you do if a scleral buckle's placement were the method of reattachment surgery?

UDAY DEVGAN, MD

The Crystalens is a viable option in eyes that have had a retinal detachment as well as a vitrectomy or a scleral buckle. The surgeon's primary considerations in these cases are (1) the patient's current retinal status and (2) if there is a possible need for future retinal procedures. The patient's retinal surgeon can best address these questions. If the eye has recovered well from surgery, has no proliferative vitreoretinopathy, and will not likely need a future retinal surgery, then the Crystalens will serve the patient well.

I find that the Crystalens Five-O (Bausch & Lomb) tends to sit more posteriorly in eyes with a previous vitrectomy. Additionally, I tend to choose a higher-powered IOL to avoid leaving the patient hyperopic postoperatively. It is important to be gentle during hydrodissection and nuclear removal,

because the earlier vitrectomy may have traumatized the posterior capsule and increased the likelihood of its rupturing during IOL surgery. Because the patient may be at a higher risk of cystoid macular edema, postoperative NSAIDs are indicated. Finally, one should remember that even the most gentle cataract surgery may lead to a postoperative retinal detachment. I recommend sending the patient back to the retinal surgeon for a thorough dilated fundus examination shortly after surgery.

WILLIAM B. TRATTLER, MD

It is well known that patient selection is critical to achieving successful outcomes with presbyopia-correcting IOLs. At my clinic, we have been performing preoperative topography and macular optical coherence tomography (OCT) for every patient considering a presbyopia-correcting IOL (Figure 1). We have found that it is not uncommon for a seemingly healthy patient to have topographic irregularities or to demonstrate subtle macular

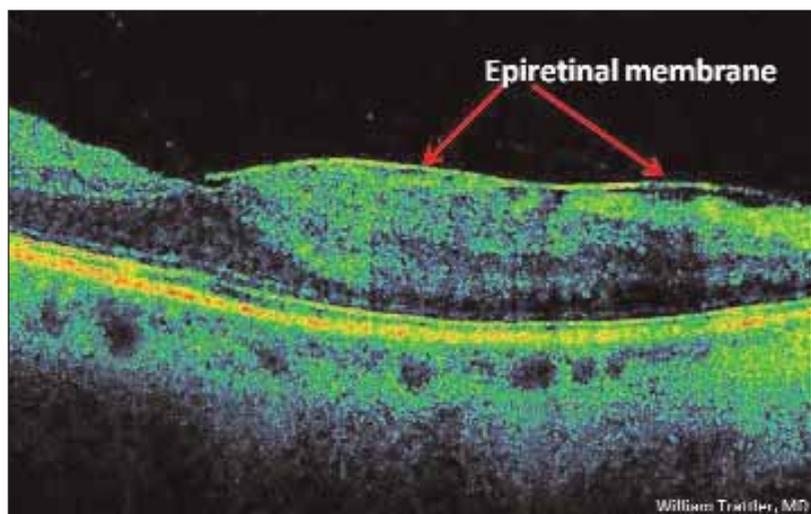


Figure 1. An OCT image of the macula shows an epiretinal membrane.

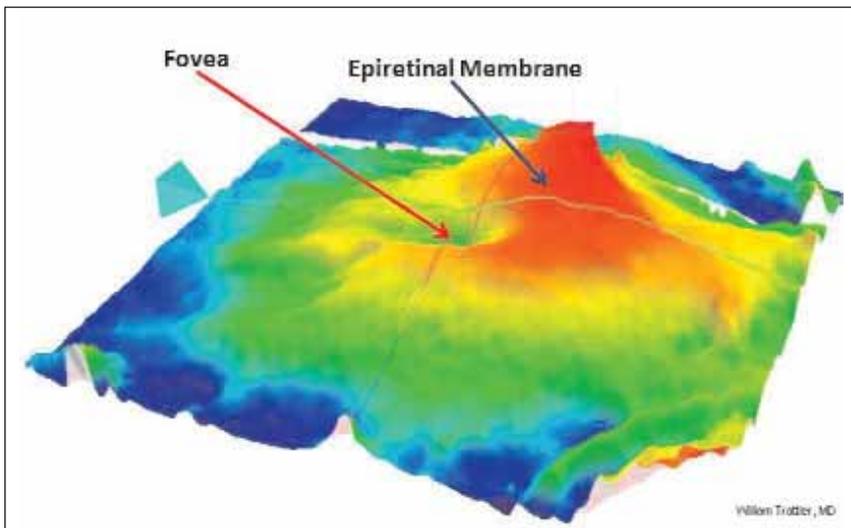


Figure 2. Topography of the macula shows “tenting” of the retina due to the epiretinal membrane. Previous surgery to repair a retinal detachment increases the risk of developing an epiretinal membrane.

pathology on the OCT scan.

Diagnostic testing plays an even larger role with patients who have a history of retinal detachment repair. Preoperative topography is critical to determining if there is irregular astigmatism related to previous procedures. Macular OCT may also reveal a subtle epiretinal membrane (Figure 2) or vitreomacular traction syndrome, which is more common after the placement of a scleral buckle. A potential visual acuity measurement is also important in identifying any permanent loss of visual acuity related to the previous retinal detachment. In general, if the patient has experienced a macula-off retinal detachment, the likelihood of excellent macular function is low. Therefore, I would avoid implanting a presbyopia-correcting IOL in most cases.

If the preoperative tests are normal, the surgeon can choose from a variety of presbyopia-correcting IOLs.

Because patients may experience a subtle loss of contrast sensitivity following the surgical repair of a retinal detachment, I prefer an accommodating IOL (ie, the Crystalens) to a multifocal lens. I believe that this avoids further compromising vision.

In the future, I would also consider implanting the Tetraflex accommodating IOL (Lenstec, Inc., St. Petersburg, FL), which has performed well in an ongoing phase 3 study.¹ I believe that the Tetraflex will fare well in cases where a late, recurrent retinal detachment occurred and silicone oil was required. Thankfully, however, this complication is uncommon.

Currently, I implant the Crystalens in patients with

previous retinal detachment who desire a reduction (not elimination of) their use of spectacles. When implanting the Crystalens, I target the dominant eye for a final prescription of -0.25 D and the nondominant eye for a final prescription of -0.75 D. Then, I perform limbal relaxing incisions to reduce any preexisting astigmatism. I also use pre- and postoperative topical NSAID drops for treating eyes with previous retinal surgery, as they may be at increased risk for CME during the postoperative period.

Patients with previously repaired retinal detachments need to be informed that achieving good vision with presbyopia-correcting IOLs is a process and that they may

require additional procedures following cataract surgery. If a presbyopia-correcting IOL is implanted in the fellow eye, the patient should understand that this eye has an increased risk of a retinal detachment compared with eyes that do not have such a history.

I believe that, with careful preoperative planning and excellent intra- and postoperative care, patients with a history of retinal detachment can achieve excellent results with the Crystalens.

JEFFREY WHITMAN, MD

As my comfort with the Crystalens has increased (eg, since the release of the Five-O model), I have extended my use of the lens to address more difficult clinical situations. These include a traumatic cataract in a teenager, cases of mild age-related macular degeneration, and eyes with a history of retinal detachment surgery.

When addressing patients with a previous retinal detachment and good macular function, I discuss the advantages of the Crystalens for their overall vision (premium lenses are not recommended in most macula-off detachments). I explain that their previous surgery, weak zonules, or surgically weakened posterior capsule could cause the nucleus to drop and increase the risk of repeat detachment.

I use trypan blue to stain the capsules and inject DisCoVisc (Alcon Laboratories, Inc., Fort Worth, TX) to push down on the lens capsule and facilitate the capsulotomy. I rely on hydrodelineation more than hydrodissection to decrease zonular stress and use a slow-motion phaco technique. ■

Editor's note: Some of the contributors acknowledged a financial interest in Eyeonics, Inc. This company has been purchased by Bausch & Lomb.

Section editor John F. Doane, MD, is in private practice with Discover Vision Centers in Kansas City, Missouri, and he is Clinical Assistant Professor for the Department of Ophthalmology, Kansas University Medical Center. Dr. Doane may be reached at (816) 478-1230; jdoane@discovervision.com.



Uday Devgan, MD, is in private practice at the Maloney Vision Institute in Los Angeles. He is Chief of Ophthalmology at Olive View UCLA Medical Center and Associate Clinical Professor at the UCLA Jules Stein Eye Institute. Dr. Devgan is a consultant to and receives research support from Bausch & Lomb. He is also a speaker for, consultant to, and shareholder in Eyeonics, Inc. Dr. Devgan may be reached at (310) 208-3937; devgan@ucla.edu; <http://www.maloneyvision.com>.



William B. Trattler, MD, is a corneal specialist at the Center for Excellence in Eye Care in Miami, and he is a volunteer assistant professor of ophthalmology at the Bascom Palmer Eye Institute in Miami. He has received research support from Advanced Medical Optics, Inc., and Lenstec, Inc. Dr. Trattler may be reached at (305) 598-2020; wtrattler@earthlink.net.



Jeffrey Whitman, MD, is in private practice at the Key-Whitman Eye Center, in Dallas. He is on the speakers' bureaus for Bausch & Lomb, Eyeonics, Inc., and Advanced Medical Optics, Inc. Dr. Whitman may be reached at whitman@keywhitman.com.



1. Trattler W. The clinical performance of the Tetraflex accommodating posterior chamber IOL: USFDA multicenter investigation. Poster presented at: The AAO Annual Meeting; November 12, 2008; New Orleans, LA.