The Management of Overhanging Filtering Blebs

BY LAMA A. AL-ASWAD, MD

CASE PRESENTATION

In 2004, a 65-year-old Hispanic male presented to the ophthalmology clinic with a complaint of discomfort and a foreign body sensation in his left eye for the past several weeks. His ocular history was significant for trabeculectomy with mitomycin C (MMC) in his right eye in 1998 and in his left eye in 1999. In 2002, an episode of mild blebitis in his left eye responded promptly to topical fortified vancomycin and tobramycin. A transient bleb leak occurred in the same eye in 2003.

On examination, the patient's BCVA measured 20/40 OD and 20/50 OS. His IOP was 10 mm Hg OD and 9 mm Hg OS. Pachymetry measured 470 µm OD and 505 µm OS. The patient's left eye had a cystic, thin-walled, translucent filtering bleb overhanging the cornea superiorly (Figure 1). The bleb was Seidel negative, and the optic discs had advanced glaucomatous cupping (Figure 2).

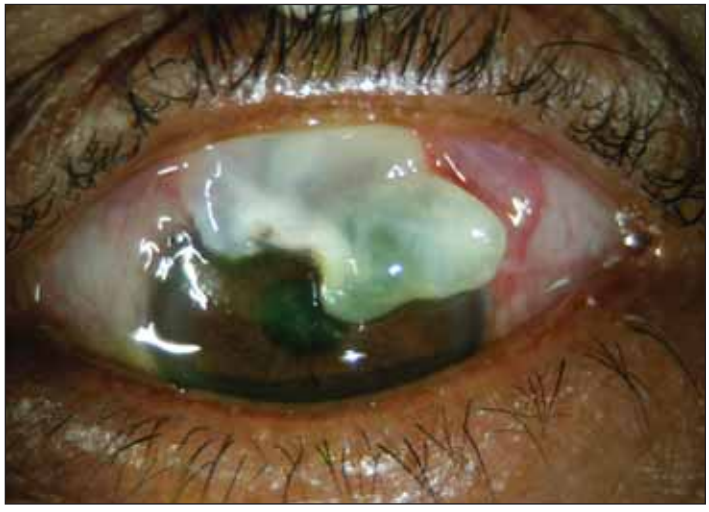

Figure 1. A slit-lamp photograph of the patient's left eye showed an overhanging, thin ischemic bleb.

HOW WOULD YOU PROCEED?

1. Would you initiate topical lubrication therapy?
2. Would you graft with an autologous conjunctival patch?
3. Would you remodel or shrink the bleb with a laser procedure or cryotherapy?
4. Would you amputate the overhanging corneal section of the bleb and place a horizontal compression suture?

SURGICAL COURSE

The patient's symptoms were due to bleb dysesthesia in his left eye with an IOP at target level. I excised the extensive overhanging corneal component of the filtering bleb and placed a tight 9–0 nylon horizontal compression suture across the resulting limbal defect (Figure 3).

OUTCOME

On the first postoperative day, visual acuity in the patient's left eye was 20/50 with an IOP of 11 mm Hg. The bleb had remained Seidel negative. At 1 week, his visual acuity was still 20/50, the IOP had decreased to 8 mm Hg, and the Seidel test was negative.

Two months after surgery, the visual acuity and Seidel test were unchanged, but the IOP had risen to 13 mm Hg. At that point, treatment with a prostaglandin analog was initiated to control the IOP and prevent further thinning of the bleb. One year after surgery, the patient's visual acuity had decreased to 20/60 due to the progression of a preexisting cataract, and the IOP had stabilized on prostaglandin-analog therapy to a range of 10 to 11 mm Hg. The bleb was still Seidel negative without a recurrence of the overhanging bleb (Figure 4).

The patient has done well. He has a Seidel negative, functioning filtering bleb and satisfactory IOP control.

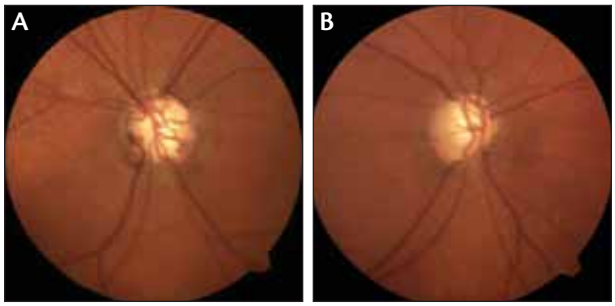

Figure 2. Disc photographs of the left (A) and right (B) eyes showed advanced glaucomatous cupping.

Bleb dysesthesia has not recurred, and the cataract's progression has been gradual. Nevertheless, he merits close monitoring because of the potential for further thinning of the bleb and recurrent growth of the bleb over the cornea, blebitis, and/or leakage as well as rising IOP with progression of his advanced glaucoma.

DISCUSSION

An overhanging bleb is a well-documented complication of trabeculectomy, especially when antimetabolites are used. The problem can be associated with hypotony due to overfiltration or external leakage, foreign body sensation due to an extremely large bleb, dysesthesia due to interference with lid function and closure leading to corneal drying with dellen formation, unacceptable cosmesis, and visual compromise due to astigmatism. Ophthalmologists are usually reluctant to relieve these symptoms through additional surgery if IOPs are well controlled.

Among the conservative measures that may avoid invasive surgical intervention are lubrication, aqueous suppressants, and compression sutures.[1] In general, these modalities tend to shrink the blebs gradually, and many patients do not require further intervention. The surgical revision of the bleb may be warranted, however, in patients who have intractable pain caused by dellen or fluctuating vision. Strategies include bleb excision with free conjunctival autologous patch graft,[2-4] bleb excision with conjunctival advancement,[5] laser bleb reduction,[6-8] partial excision of the overhanging corneal portion,[9] cryoapplication, and the application of trichloroacetic acid. Because these procedures may compromise the bleb's function, patients should understand they might require future medical and/or surgical intervention for IOP control.

In the case presented herein, medical management was not a realistic option because neither lubricants nor aqueous suppressants could relieve the symptoms caused by such a large overhanging bleb. Although

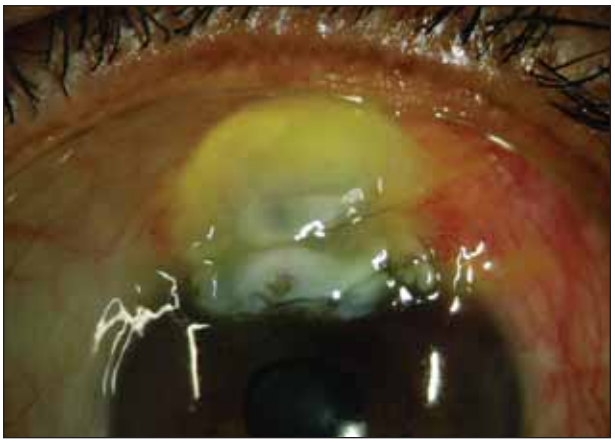

Figure 3. This slit-lamp photograph of the patient's left eye was taken 1 week after the partial excision of the section overhanging the cornea and the placement of a horizontal compression suture.

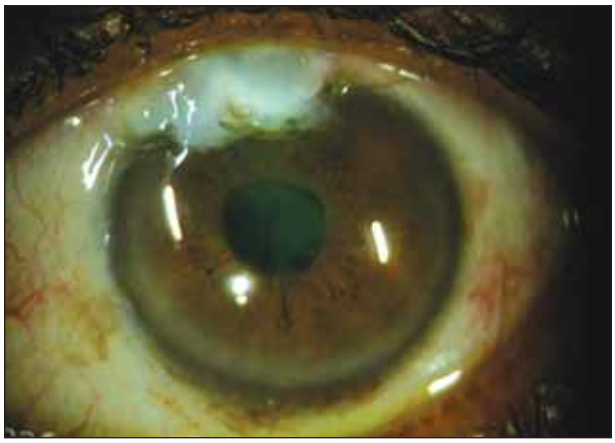

Figure 4. One year postoperatively, the slit-lamp photograph showed no recurrence of the overhanging section of the bleb.

argon laser photocoagulation can remodel and reduce a bleb's size by means of protein denaturation and tissue shrinkage,[10] my colleagues and I decided against this procedure due to the likelihood of penetrating the very thin ischemic bleb and thereby inducing a chronic leak. We considered cryoapplication and the application of trichloroacetic acid to be too potentially destructive to the corneal surface for the treatment of a bleb extending onto the cornea.

We were left with two options: either a partial excision of the overhanging corneal section of the bleb or a total excision of the bleb with conjunctival advancement or free autologous conjunctival patch graft. We thought the former was a simpler and yet precise method for relieving the patient's bothersome symptoms without significantly disrupting the bleb's function. These overhanging blebs are easily dissected off the corneal surface, but their partial excision does leave a limbal conjunctival dehiscence that may not seal rapidly in tissue previously treated with MMC. In addition to persistent leakage and hypotony, there would also be a risk of infection, especially in an eye with a prior history of blebitis. We therefore elected to place a tight horizontal compression suture at the limbus to tamponade the conjunctival incision to prevent oozing and facilitate healing (Figure 3).

If this procedure had failed to alleviate the problem, our next option would have been bleb excision with a free autologous conjunctival patch graft, a procedure that is frequently used to repair leaking blebs. For a large, intact, overhanging MMC bleb with satisfactory IOP control, however, the partial excision of the corneal component in conjunction with a horizontal compression suture appeared to be the simplest and most effective solution. ❑

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Lama A. Al-Aswad, MD, is Assistant Professor of Clinical Ophthalmology at Edward S. Harkness Eye Institute, Columbia University College of Physicians and Surgeons, New York, New York. She acknowledged no financial interest in the products or companies mentioned herein. Dr. Al-Aswad may be reached at (212) 305-0648; laa2003@columbia.edu.

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