

Cataract With an Overhanging Bleb

**BY GARRY P. CONDON, MD; ROBERT J. NOECKER, MD, MBA;
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CASE PRESENTATION

A 76-year-old monocular man is referred for cataract surgery on his seeing right eye. His past ocular history is significant for advanced glaucoma in his right eye, for which he underwent trabeculectomy. The patient's chief concern regards decreased vision; he has no complaints of pain or irritation. His BCVA is count fingers in his right eye and no light perception in his left eye. An examination of his right eye reveals a large, ischemic, overhanging bleb and a pterygium (Figure 1). There is no bleb leak, and the IOP is 10 mm Hg on no medication. A 3+ nuclear sclerotic cataract is present.

In general, what is your approach to an overhanging bleb? How would you address this cataract?

—Case prepared by Tal Raviv, MD.

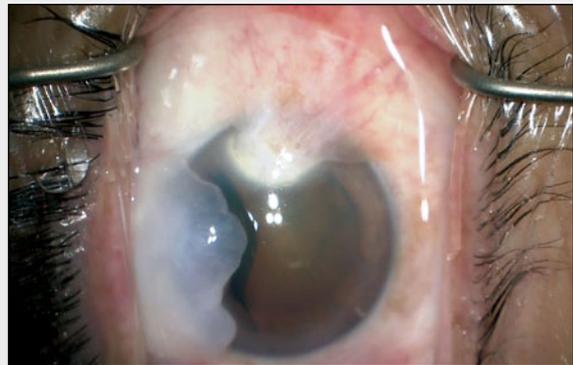


Figure 1. An overhanging ischemic bleb (along with a pterygium) obscures the surgeon's view.

GARRY P. CONDON, MD

This patient demonstrates a fairly dramatic overhang of the existing filtering bleb. The nasal pterygium is prominent but does not appear to be inflamed. The question in this case is whether or not there is an adequate view to safely perform phacoemulsification with lens implantation. The fact that the patient describes no irritation from either the filtering bleb or the pterygium would usually lead me to proceed with temporal clear corneal phacoemulsification and avoid manipulating or excising the filtering bleb and pterygium. In this case, I am not convinced that the pterygium obscures the view for phacoemulsification, so I would prefer to leave it as it is. The filtering bleb, on the other hand, is much larger and covers a greater area of cornea than the pterygium. I would therefore plan to excise a substantial portion of the overhanging bleb during the cataract surgery.

I would begin the surgery by gently outlining the corneal portion of the overhanging bleb with a No. 67 Beaver blade (Beaver-Visitec International) to incise the epithelium immediately around the bleb's border. Next, I would use a dry Weck-Cel sponge (Beaver-Visitec

International) to simply push the overhanging portion of the bleb up off the underlying cornea, where releasing a bleb is typically quite easy. This step would allow mobilization of the whole anterior portion of the bleb that was lying on the cornea.

Anterior overhanging bleb segments are solid structures composed of loose stroma. In my experience, this extension of the bleb does not contribute significantly to the bleb's overall function, and I have found that excision does not compromise IOP control. I would use a Westcott scissors or a Vannas scissors to excise the anterior portion of the bleb in an attempt to leave as smooth a transition zone as possible at the corneoscleral limbus. I no longer check the residual raw bleb stroma with fluorescein, because I find leakage is not a problem after this type of late excision where rapid re-epithelialization occurs.

I would perform temporal clear corneal phacoemulsification. Staining the anterior capsule with trypan blue dye would enhance my view of the capsule in the region around the pterygium and, more importantly, through the area where an absence of corneal epithelium corresponds to the preexisting zone of the overhanging bleb.

ROBERT J. NOECKER, MD, MBA

I suspect the treatable causes of this patient's decreased vision are the moderately dense cataract and astigmatism—probably irregular—from the bleb, the pterygium, or both. Preoperatively, I would perform topography, obtain optical and manual keratometry readings, and measure the optical and ultrasonic axial lengths.

In terms of surgical approach, I would facilitate safe extraction of the cataract by first removing the pterygium. My usual technique involves a Westcott scissors and a crescent knife. I would use an amniotic membrane graft with fibrin glue at the end of the case to close the defect.

To improve my visualization of the cataract, I would address the overhanging bleb. I find that the overhanging portion frequently is not continuous with the posterior portion and can be truncated back to the limbus with scissors after I lift the bleb off the cornea with a crescent knife.

An alternative and more definitive approach to an overhanging bleb is to remove the entire area of avascular tissue and reapproximate the adjoining conjunctiva to the limbus with a running 9–0 nylon suture on a taper needle. Blebs that form anteriorly typically have fibrosed posteriorly, so aqueous can only flow anteriorly. I perform extensive posterior dissection to facilitate subsequent flow away from the limbus. I would also consider reapplying mitomycin C posteriorly with a subconjunctival injection and placing some triamcinolone subconjunctivally to minimize scarring in the posterior subconjunctival space so that the bleb would be less likely to form anteriorly again.

NATHAN M. RADCLIFFE, MD

Monocular patients can be challenging, because their ocular conditions double the risks and rewards of intervention. In some cases, however, inaction carries significant risks. An eye with a dense cataract and glaucoma cannot be staged for disease severity, monitored for glaucomatous progression, or, in some cases, treated appropriately. This patient's cataract must be removed for the ophthalmologist to provide the best glaucoma care. Although cataract extraction will likely improve the patient's vision, automated perimetry with special attention to the foveal sensitivity would help me to determine if the eye is capable of excellent central vision (foveal sensitivity of 28 dB or higher) or if glaucomatous optic neuropathy has blunted the central vision (foveal sensitivity below 24 dB).

For the stability of the glaucoma, leaving the bleb alone may be the most conservative option. Hypotony can result after lens extraction in filtered eyes, however, and this patient is at risk of devastating endophthalmitis in his only seeing eye if the bleb is left as is. I would therefore offer the patient surgical removal of the cataract and the pterygium (which has, in all likelihood, already received some therapeutic benefit from mitomycin C applied during the trabeculectomy). For the ischemic bleb, I would offer a conjunctival advancement procedure described by Budenz.¹ I would educate the patient about his 50% risk of requiring IOP-lowering medications postoperatively and 8% risk of reoperation for uncontrolled glaucoma.¹

STEVEN D. VOLD, MD

In challenging cases, detailed risk-benefit analyses of care are especially important. I would carefully evaluate the visual implications of this patient's overhanging

bleb, cataract, pterygium, and glaucoma. The extent of the overhanging bleb almost certainly affects his visual function, and it will make obtaining accurate preoperative biometry measurements prior to cataract surgery difficult, if not impossible. Excision of the overhanging bleb at the slit lamp or in the minor procedure room could be easily and safely achieved. I would gently dissect the overhanging portion of the bleb off the cornea using a No. 15 Beaver blade or a Weck-Cel sponge and then complete excision with a Westcott tenotomy scissors. I find that, due to loculations within overhanging blebs, only rarely do they fail or do leaks develop after this straightforward procedure.

One to 2 weeks postoperatively, I would likely perform biometry for the anticipated cataract procedure. I recommend a clear corneal approach to cataract surgery in glaucoma patients. During cataract extraction by phacoemulsification in postfiltration surgery eyes, I liberally instill a dispersive viscoelastic to protect the corneal endothelium, and I am meticulous about cortical cleanup to minimize any postoperative inflammation that could put the bleb at risk of failure. In my experience, the proper use of toric IOLs and intraoperative aberrometry enhance outcomes in eyes with good visual potential. Postoperatively, I advocate aggressive treatment of ocular inflammation with both topical steroids (eg, difluprednate) and a nonsteroidal antiinflammatory medication.

I would probably defer surgical management of this monocular patient's asymptomatic pterygium at this time.

TAL RAVIV, MD

After considering the patient's functioning bleb, monocular status, and very symptomatic vision loss, I elected

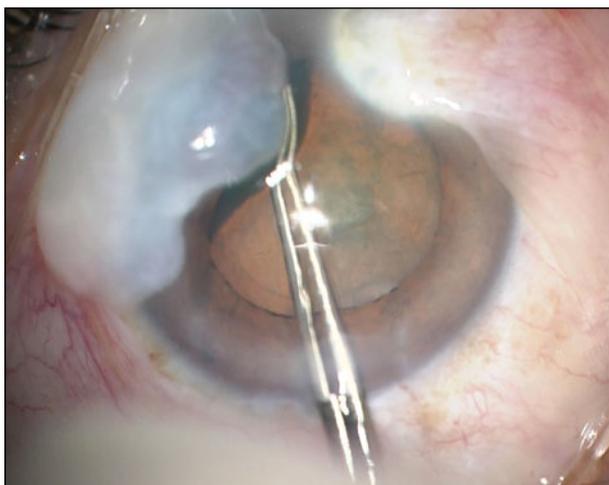


Figure 2. Image distortion paracentrally.

to proceed with standard cataract surgery. I counseled him on all possible contingencies.

There were three keys to success in this case. First, I displaced my normally temporal wound and paracentesis about 30° counterclockwise to avoid any proximity to the thin filter. Second, I carefully tracked my anterior capsular leading edge during the capsulorhexis. The bleb created a significant blind zone, which made maintaining hold of the capsular flap important (Figure 2). Finally, I employed a supracapsular technique. Of all the nuclear disassembly techniques, I find I can perform this one with the least amount of visualization, as illustrated in the accompanying video. The patient had an excellent postoperative result, has maintained IOP control off medication, and is enjoying a good visual outcome. ■



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1. Budenz DL, Chen PP, Weaver YK. Conjunctival advancement for late-onset filtering bleb leaks: indications and outcomes. *Arch Ophthalmol*. 1999;117(8):1014-1019.