

Choroidal Folds With Overfiltration

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CASE PRESENTATION

An 83-year-old woman with primary open-angle glaucoma had experienced a bilateral decrease in vision during the past couple of months (Figure 1). She underwent trabeculectomy with mitomycin C in 2003 and cataract surgery in both eyes before that time. She had a visual acuity of 20/100 OU, and the IOP measured 2 mm Hg OU. The blebs in both eyes were diffuse and avascular, and there were bilateral choroidal folds in the macula. Her optic nerves had very narrow rims superiorly and inferiorly, and visual field testing showed arcuate defects splitting fixation.

Comments on Hypotony

RNW: The problem presented in this case is increasingly common. How would you approach this patient?

GLS: The term *hypotony* is often used, but it is a “wastebasket” diagnosis. Many of my patients have an IOP of 1 or 2 mm Hg long term with a visual acuity of 20/20. Retinal edema is rare in the elderly, particularly in those with a thin retinal nerve fiber layer. Very low IOP does not itself disturb me. In this case, however, the patient has choroidal folds that appear symptomatic, so I would close down the bleb.

I would make a limbus-based conjunctival incision far posterior and take down the conjunctiva to the limbus. Usually, a gape in the scleral flap will be revealed. It is tempting to suture this directly closed, but I usually do

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not because it can induce significant astigmatism. Instead, I plug the hole with Tutoplast (IOP Inc., Costa Mesa, CA).

RNW: You would not patch over the opening?

GLS: No, I would cut the Tutoplast to fill the hole and then suture it into the opening so that it was watertight. I have found that an overlay does not work. One patient whom I recall had congenital glaucoma with a failed goniotomy and then trabeculectomy. When I took over her care, she had an IOP of 10 mm Hg and significant disc edema due to her low pressures. I took her to the OR and found that her sclera was trashed. I put a large piece of Tutoplast over the entire area and sutured it watertight. Initially, the IOP was 40 mm Hg postoperatively. Four to 5 years later, however, the IOP was too low, and I had to operate again.

RNW: The initially high postoperative IOP is not uncommon in these cases. The main outflow of aqueous has been through the trabeculectomy, and when this pathway is closed down, the trabecular meshwork does not immediately function as well. Pressures can be very high at first, but they will decrease as outflow through the trabecular meshwork improves.

GLS: In this case, because the patient has far advanced glaucoma, I might perform a new trabeculectomy with releasable sutures in

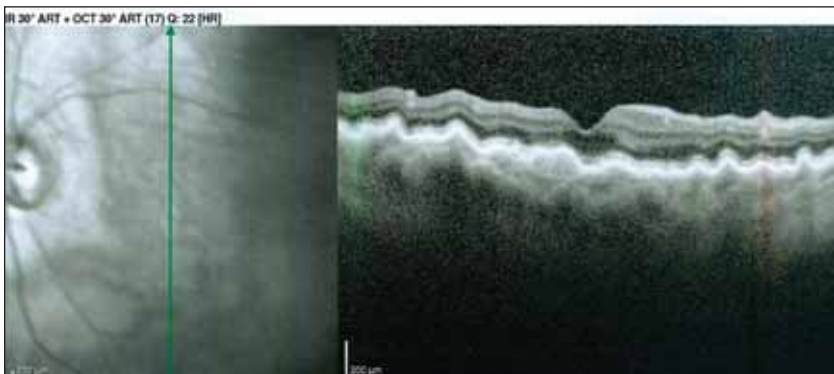


Figure 1. Preoperative optical coherence tomography scan of the patient's left eye.

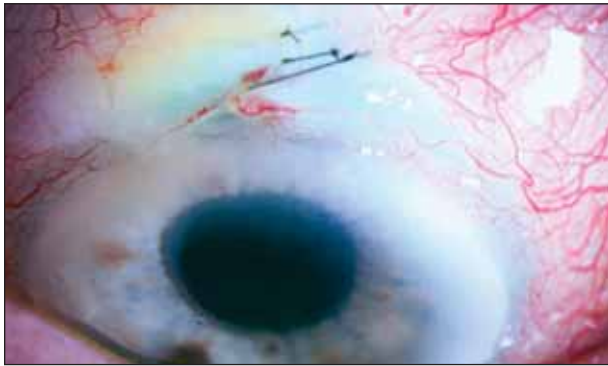


Figure 2. The appearance of the bleb in the patient's left eye 1 day after surgery.

addition to placing the plug. The primary goal is to restore the health of the eye, so the IOP must be raised. A fresh trabeculectomy would provide some leakage to keep the pressure from going too high.

RNW: We employed a different approach. Dr. Rodarte, can you provide follow-up on the surgical approach and results for this patient?

THE CASE CONTINUED

Without creating an incision, the surgeon visualized the scleral flap after compressing the conjunctiva over the area. Two interrupted 10–0 and one 9–0 nylon transconjunctival sutures were then placed to close the scleral flap.^{1–3} The IOP measured 74 mm Hg on day 1 but improved to 20 mm Hg by week 1 on timolol and latanoprost. Six weeks after surgery, the IOP was 28 mm Hg but decreased to 10 mm Hg after the 9–0 suture was cut (Figures 2–3). The patient returned 2 weeks later (8 weeks postoperatively) with an IOP of 7 mm Hg on only timolol. Importantly, her visual acuity had improved to 20/40 after the procedure, and she reported a resolution of her symptoms.

Comments on the Procedure

GLS: Although that is not what I suggested, the approach was simple, and I am a proponent of keeping things as simple as possible. It seems to have been effective in this case. For this approach to work, the surgeon would have to be able to see the scleral flap through the conjunctiva.

RNW: That is right. We recently had a similar case in which we could not visualize the scleral flap despite trying to compress the bleb over the site. We therefore could not use the procedure Dr. Rodarte described. Instead, we employed another simple approach originally suggested by Palmberg—namely, placing a compression suture to delimit the size of the bleb.⁴

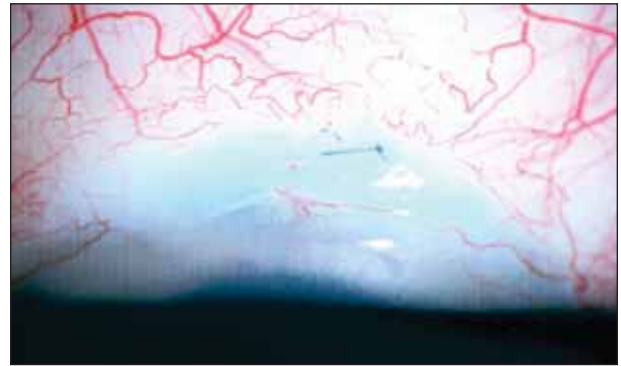


Figure 3. The appearance of the bleb in the patient's left eye 6 weeks postoperatively after the cutting of one suture.

CONCLUSION

A patient with advanced glaucoma and large diffuse blebs presented with choroidal folds, decreased vision, and an IOP of 2 mm Hg. Closing the scleral flap with transconjunctival sutures effectively increased the IOP and improved her visual acuity. Subsequent suture lysis reduced her IOP without compromising her visual acuity. □

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