retinitis pigmentosa, we are unaware of any previous reports on the use of this medication in treating X-linked retinoschisis. Moderate improvement in visual acuity was observed; however, optical coherence tomography demonstrated clear improvement in the foveal schisis. A causal relationship between the medication and the retinal status is strongly suggested by the recurrence of retinal schisis within 2 months after medication cessation and a recovery of retinal morphology when the medication was reinstituted.

Acetazolamide may reduce macular edema by altering fluid transport across the retinal pigment epithelium, causing a reduction of the fluid contained within the macular schisis cavities even in the absence of fluorescein angiographic leakage. The utility of acetazolamide may be limited to young patients and those with mild central schisis. Given the dramatic results observed in this patient, a treatment trial of acetazolamide with additional patients seems warranted with the goals of preserving both retinal integrity and visual function.

Mehdi Ghajarnia, MD
Michael B. Gorin, MD

Correspondence: Dr Gorin, Department of Ophthalmology, David Geffen School of Medicine, Jules Stein Eye Institute, Los Angeles, CA 90095-7000 (gorin@jsei.ucla.edu).

Financial Disclosure: None reported.

Funding/Support: This study was supported in part by core grant EY08098 from the National Institutes of Health; the Eye and Ear Foundation of Pittsburgh, Pa; and Research to Prevent Blindness, New York, NY (senior scientist investigator, M.B.G.).

Additional Information: Subsequent to the submission and acceptance of this case report for publication, Drs Apushkin and Fishman published a series of 8 patients with X-linked retinoschisis who showed a clinical response to topical dorzolamide therapy with follow-up ranging from 1 month (2 subjects) to 6 months (1 subject) (Retina. 2007;26:741-745).

Gigantic Waves in the Tear Film Generated by Bubbles From a Large Glaucoma Bleb

To maintain clear vision, the tear film needs to be stable between blinks. The tear film stability depends on a delicate balance between the production, spread, and clearance of tear fluids. However, little is known about whether abnormal spread of tear fluids over the cornea is sufficient to cause visual disturbance. Herein we report a case of large, cystic glaucoma bleb in which the patient complained not only of dysesthesia, but also of fluctuating blurry vision.

Report of a Case. A 75-year-old woman with a history of primary open glaucoma received trabeculectomy and cataract surgeries in both eyes in 2000. After the surgeries, she complained of dry eye, sharp pain, and fluctuating blurry vision in both eyes.

In May 2004, both eyes received surgical prevention of conjunctivochalasis. After the surgeries, the pain and dryness were relieved in both eyes. Nevertheless, she still complained of fluctuating blurry vision in the left eye.

Further examination revealed that a cystic bleb present on the superior bulbar conjunctiva was bulging and hanging over the cornea more in the left eye than in the right eye (Figure 1A and B). We used a dental mirror to determine the elevation of the eyelid by the over-size bleb and to reveal that the upper eyelid was overriding the lower eyelid to a greater extent in the left eye (Figure 1C and D). After a complete blink, air bubbles were released from the upper eyelid margin of the left eye. The blurry vision fluctuated and could not be improved with refraction. The tear film was analyzed with sequential images taken by a Tearscope Plus (Keeler, Windsor, England), which showed an air bubble (Figure 2) that subsequently burst to create a
gigantic water wave or tsunami that traveled from the upper eyelid margin across the cornea, including the visual axis (Figure 2). When artificial tears were instilled, the formation of bubbles was eliminated, and vision improved.

**Comment.** Grajeswki et al\(^1\) first described “bubble dysesthesia” to denote “pain” or “ocular discomfort” associated with large glaucoma blebs. Budenz et al\(^2\) further demonstrated a strong correlation between the position of the glaucoma bleb covered by the upper eyelid and the bleb dysesthesia score. We confirmed this finding by using a dental mirror to visualize more precisely the position of the upper eyelid margin relative to the lower eyelid margin (Figure 1). We speculate that such a large overriding facilitated the entrapment of air under the upper eyelid. Topical application of artificial tears was beneficial in reducing the formation of bubbles presumably by filling the small gaps created by the uneven upper eyelid margin apposition against the cystic bleb.

For first time, we demonstrated that a large glaucoma bleb could create episodic distortion of the tear film by generating bubbles that create gigantic waves or tsunami on bursting. Such waves traveled downward against the physiological upward movement of the tear film, leading to distortion of the tear film over the visual axis.

Mario A. Di Pascuale, MD
Antonio Elizondo, MD
Ying Y. Gao, MD
V. K. Raju, MD
Scheffer C. G. Tseng, MD, PhD

**Correspondence:** Dr Tseng, Ocular Surface Center, 7000 SW 97 Ave, Suite 213, Miami, FL 33173 (stseng@ocularsurface.com).

**Financial Disclosure:** None reported.

**Funding/Support:** This study was supported in part by an unrestricted grant from the Ocular Surface Research and Education Foundation, Miami, Fla.

**Previous Presentation:** This case was accepted as a video presentation for the Annual Meeting of the American Academy of Ophthalmology; October 18-21, 2005; Chicago, Ill.

---