

age from CNV or retinal vascular disease following monthly administration of bevacizumab or ranibizumab for years. This case dramatically demonstrates the ability of such a switch to promptly resolve this leakage, albeit in the absence of any short-term visual acuity improvement, presumably because of outer retinal atrophy and scar. Further follow-up of similar cases seems warranted. In addition, whether similar but earlier intervention with aflibercept might avoid visual acuity loss earlier in the disease and whether cases initially unresponsive to aflibercept might show similar responses when switching to another anti-VEGF medication such as ranibizumab will require additional study.

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1. US Food and Drug Administration. Eylea. <http://www.accessdata.fda.gov/scripts/cder/drugsatfda/>. Accessed August 29, 2012.
2. Stewart MW, Rosenfeld PJ. Predicted biological activity of intravitreal VEGF Trap. *Br J Ophthalmol*. 2008;92(5):667-668.
3. Holash J, Davis S, Papadopoulos N, et al. VEGF-Trap: a VEGF blocker with potent antitumor effects. *Proc Natl Acad Sci U S A*. 2002;99(17):11393-11398.
4. Zweifel SA, Engelbert M, Laud K, Margolis R, Spaide RF, Freund KB. Outer retinal tubulation: a novel optical coherence tomography finding. *Arch Ophthalmol*. 2009;127(12):1596-1602.

Intralesional Ethanol for an Unresectable Epithelial Inclusion Cyst

Epithelial inclusion cysts are challenging to manage, particularly when large and extensive. Herein, we describe the use of intralesional ethanol to manage a cyst that was much too large to surgically excise.

Report of a Case. A healthy 37-year-old woman was referred for decreasing vision in her left eye with no associated dis-

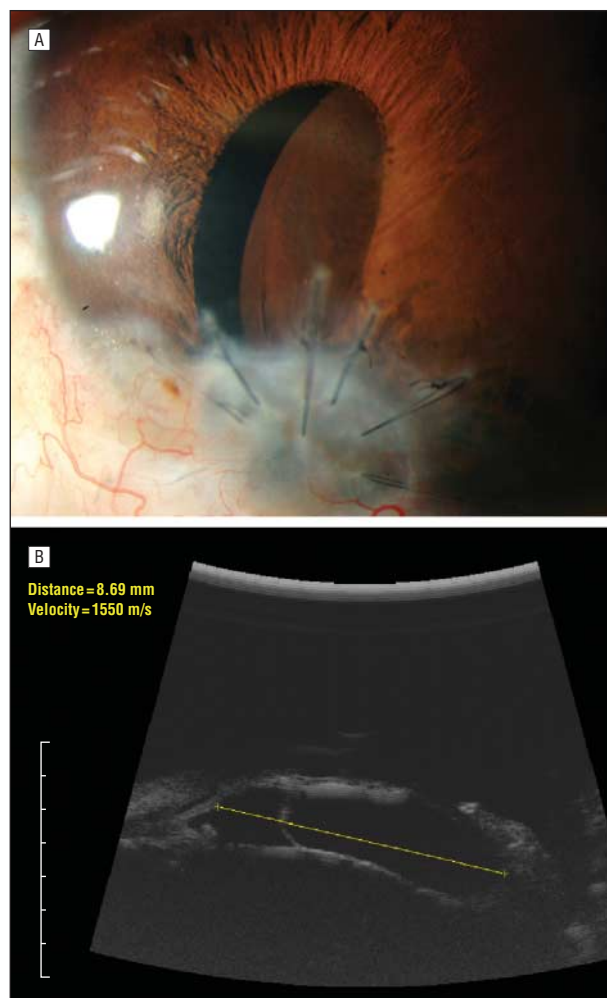


Figure 1. Slitlamp and B-scan ultrasonographic findings. A, Slitlamp photograph of the recurrent epithelial inclusion cyst. The penetrating trauma site was over the inferotemporal cornea, where a small penetrating keratoplasty was performed. B, B-scan ultrasonography demonstrates the cyst behind the iris, measuring 8.69×3.62 mm.

comfort for 3 weeks. She had sustained a penetrating injury to the left eye with a pencil point at age 12 years. Her right eye was normal. Visual acuity was 20/160 OS and intraocular pressure was 14 mm Hg OS. On slitlamp examination, the inferior cornea was very thin and the iris was pulled down toward this region. The thin area was Seidel negative. The iris was bowed forward temporally from a cyst, resulting in a very shallow anterior chamber. The cyst almost completely filled the pupil. B-scan ultrasonography revealed a cyst behind the iris measuring 9.48×4.00 mm.

The patient was prophylactically treated with an antibiotic eyedrop and instructed to return in a few days for a likely miniature penetrating keratoplasty. When she returned, the cyst had completely resolved. The inferior cornea had perforated and was Seidel positive.

Initially, after a successful miniature penetrating keratoplasty, her best-corrected visual acuity improved to 20/25, with no sign of recurrence. The excised corneal button had epithelium on the inner surface, confirming the diagnosis of an epithelial inclusion cyst. However, cyst recurrence was found at her 5-month follow-up visit (**Figure 1**). On ultrasonography, the cyst measured

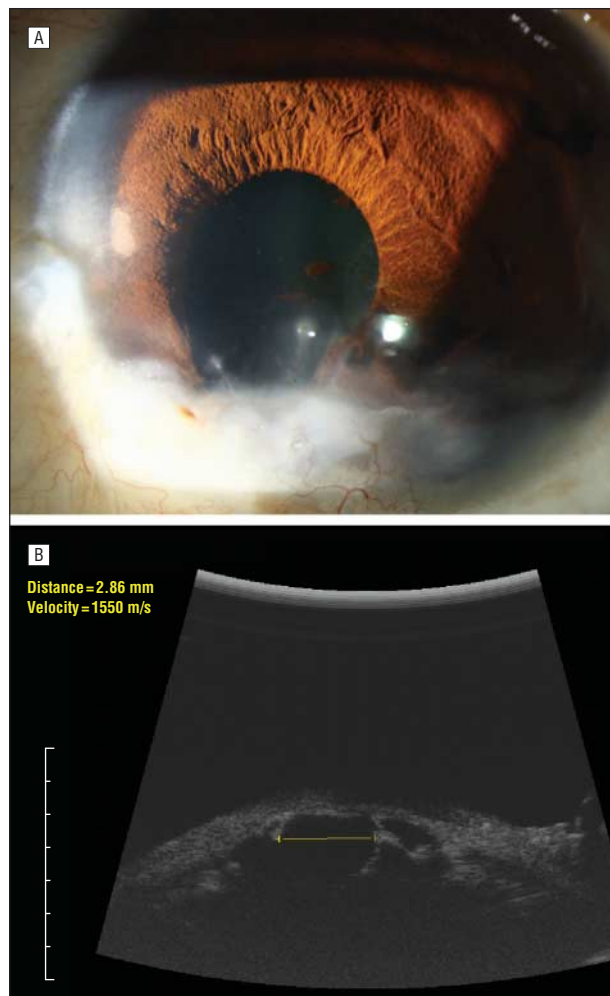


Figure 2. Slitlamp and B-scan ultrasonographic findings 22 months after the initial visit and 16 months after the repeated ethanol injection. A, Slitlamp photograph shows that the cyst is no longer visible. B, The cyst now measures 1.70×2.86 mm on B-scan ultrasonography.

8.69×3.62 mm. She was treated with 95% ethanol irrigation.

For the ethanol irrigation procedure, we used the technique described by Behrouzi and Khodadoust.¹ The procedure was performed under a retrobulbar block. A 25-gauge needle was used to enter the cyst 1.5 mm posterior to the limbus. Clear fluid (0.15 mL) was aspirated, and the same volume of 95% ethanol was injected into the cyst and removed after 1 minute. The patient was treated with prednisolone acetate and atropine sulfate eyedrops postoperatively.

The patient did well, with best-corrected visual acuity of 20/20 and intraocular pressure of 19 mm Hg at 2 months. However, the cyst recurred 6 months after the ethanol irrigation. The size was similar to the initial epithelial inclusion cyst. Therefore, she underwent a second treatment with ethanol.

We have followed the patient for 16 months after her re-treatment. Her visual acuity is 20/25 and her intraocular pressure is 21 mm Hg. No cyst is visible on slitlamp examination; however, B-scan ultrasonography shows a residual 1.70×2.86-mm cyst that has not grown based on findings from serial echography (**Figure 2**).

Comment. An epithelial inclusion cyst is a rare and serious complication of ocular penetration. Reported treatment options were reviewed by Behrouzi and Khodadoust.¹ They include excision,^{2,3} endodiathermy,⁴ photocoagulation, aspiration,⁵ and the injection of various agents including trichloroacetic acid, iodine, carbonic acid, and ethanol.¹ Behrouzi and Khodadoust reported a 94% rate of clinical resolution of cysts with intralesional alcohol, but their follow-up was very short (mean follow-up, 3.85 months) and serial B-scan ultrasonography was not performed. Surgical excision is an option, although potential adverse effects include infection, bleeding, cataract formation, and complications from cyst rupture.

The large size and location of our patient's cyst precluded surgical excision. We believe this case demonstrates that irrigation with 95% ethanol can be a safe and effective procedure, even for very large cysts for which other therapies are not possible. To our knowledge, there has been no report following these patients for an extended period with serial clinical examinations and imaging. It has been 22 months since our patient's initial treatment. She had 1 recurrence at 6 months. This was re-treated, and although there is a very small residual cyst visible only on ultrasonography, its size has remained stable for 16 months.

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1. Behrouzi Z, Khodadoust A. Epithelial iris cyst treatment with intracystic ethanol irrigation. *Ophthalmology*. 2003;110(8):1601-1605.
2. Naumann GO, Rummelt V. Block excision of cystic and diffuse epithelial ingrowth of the anterior chamber: report on 32 consecutive patients. *Arch Ophthalmol*. 1992;110(2):223-227.
3. Haller JA, Stark WJ, Azab A, Thomsen RW, Gottsch JD. Surgical management of anterior chamber epithelial cysts. *Am J Ophthalmol*. 2003;135(3):309-313.
4. Tsai JC, Arrindell EL, O'Day DM. Needle aspiration and endodiathermy treatment of epithelial inclusion cyst of the iris. *Am J Ophthalmol*. 2001;131(2):263-265.
5. Scholz RT, Kelley JS. Argon laser photocoagulation treatment of iris cysts following penetrating keratoplasty. *Arch Ophthalmol*. 1982;100(6):926-927.

Noncompaction Cardiomyopathy Manifesting as Retinal Artery Occlusion

Noncompaction cardiomyopathy is a rare cardiomyopathy that affects both children and adults.¹ It commonly manifests with heart failure, systemic embolism, and arrhythmia.^{1,2} We describe an adult patient with bilateral retinal embolism as the manifesting sign of noncompaction cardiomyopathy.

Report of a Case. A 62-year-old nonsmoking man had bilateral sudden painless loss of vision 13 hours prior