

Hydration with Cefuroxime—a method for sealing a small leaking corneal perforation

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Dear Sir,

I am Dr. Gilad Allon from the Department of Ophthalmology of the Rambam Health Care Campus, Haifa, Israel. I write to present a case report of corneal hydration with Cefuroxime in order to seal a traumatic corneal perforation.

In the case of a penetrating trauma limited to the cornea, the immediate objective of treatment is to seal the globe and avoid later intraocular infection. Sealing the globe can be achieved by suturing, glueing with tissue adhesives or applying a soft contact lens together with an aqueous suppressant. Suturing is mandatory for larger and irregular perforations, while glueing and a contact lens may be preferred in cases of small corneal perforations^[1-3]. In such cases often the sole antibiotic coverage includes a topical antibiotic^[4-6].

A healthy 29 year-old man was admitted to the emergency room with a small (1.5 mm long) central (1 mm off axis) linear perforation occurring 2h prior to admission. The anterior chamber was almost flat, and a constant leak noted. Visual acuity was finger counting from 3 meters. The trauma was caused by a metallic wire fence. No iris or lens damage was noted, and no intraocular foreign body was identified. Owing to the small and central location, it was decided not to suture the opening. A soft therapeutic contact lens was placed on the eye, deepening the chamber within an hour. The patient was hospitalized and placed on an aqueous suppressant, a topical wide-spectrum antibiotic as well as on a systemic antibiotic. Upon daily inspection the anterior chamber remained deep and relatively quiet, until 6d after admission, the contact lens was removed to check for any

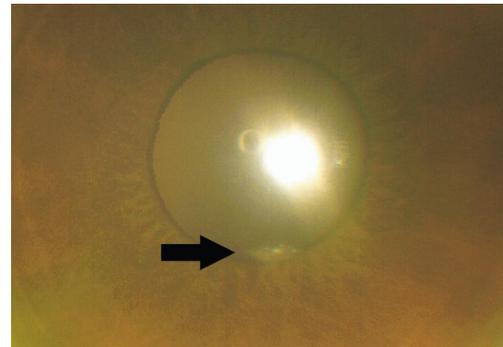


Figure 1 The perforation site before hydration.

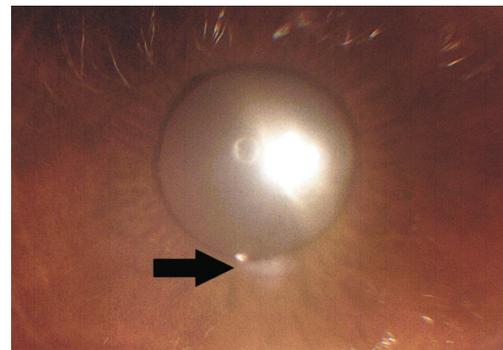


Figure 2 The perforation site after hydration.

remaining leak. Unfortunately a steady leak was present (Figure 1).

After considering the various options, stromal hydration was performed at the slit-lamp in a sterile fashion, after application of povidone iodine. The procedure was performed using a 27 G cannula on a 1 mL syringe filled with 0.3 mL Cefuroxime at a concentration of 1 mg/0.1 mL. The technique applied is identical to the approach used to seal leaking incisions at the end of cataract surgery. In addition, some of the antibiotic was intentionally squirted into the anterior chamber. Immediately following the stromal hydration the leak stopped and did not recur at any time following the procedure (Figure 2). A month following the injury visual acuity was 0.9 and the anterior segment was normal short of a small full-thickness linear corneal scar.

We described an unusual approach to sealing a small corneal perforation, using a method routinely used to seal small "perforations" inflicted on the eye during routine cataract surgery. Instead of balanced salt solution, we chose to use Cefuroxime, the antibiotic of choice we inject at the end of each cataract surgery performed at our institute^[6-8].

Cefuroxime injected into the corneal stroma was previously described as a treatment for infectious crystalline keratopathy^[9].

While we performed this procedure only 6d post-injury, on hind sight it would have been wiser to perform it much earlier, ideally when the patient was first seen. This could have led to closure of the leak, as well as delivered an antibiotic into the anterior chamber, soon after the suspected contamination, as opposed to 6d later.

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