



**Anesthetic Abuse Patient Associated With Corneal Ulcer, Hyphema And Lipid Keratopathy
Case report**

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Report of a Case:

A 47 year old male admitted to Cornea department complaining of tearing, light sensitivity, blepharospasm, foreign-body sensation and blurred vision. The complaints were present for more than 4 weeks. Past ocular history was remarkable for frequent usage of (as often as every 15 minutes) topical anesthetic (2% lidocaine) eye drops.

Introduction and background:

A commonly encountered and frequently unrecognized clinical problem is epithelial keratopathy caused by topical ocular medications. Topical anesthetics have repeatedly been shown to be toxic if used for prolonged periods and their cytotoxic results are dose-dependent. The toxic effect includes frank epithelial loss, stromal edema, infiltration and corneal opacities. Toxic reactions of the ocular surface can take different forms. Very mild toxicity can be presented as follicular conjunctivitis involving the upper and lower palpebral conjunctivae. In its mild to moderate form the toxic keratitis consists of punctate epithelial erosion often affecting the inferior cornea, associated with injection of the tarsal and bulbar conjunctiva and mild papillary reaction of superior tarsal conjunctiva. A diffuse punctate epitheliopathy, occasionally in a whorl pattern, can be observed in more severe cases. This pattern sometimes is called vortex keratopathy. The most severe cases may involve a corneal epithelial defect of the inferior or central cornea, stromal opacification and neovascularization. This type of epithelial disease can be seen in damage of limbal stem cells. We are presenting a case of anesthetic abuse associated with corneal ulcer, hyphema and lipid keratopathy.

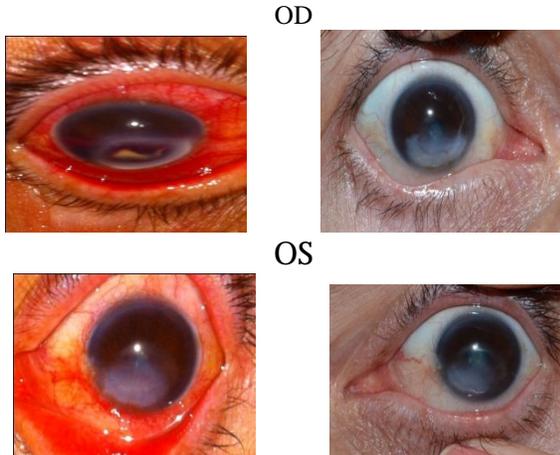
Objective data:

On slit lamp examination the patient had OU inferior p

aracentral corneal ulcers with epithelial defects, stromal suppuration and lipid deposition. There was inferior pannus with huge vessels entering the anterior chamber. There was hyphema present in both eyes about 2 mm, anterior chamber cells (2+), and granuloma-like looking stuff in anterior chamber. There was scant mucopurulent discharge present in both eyes. Initially the patient did not mention about anesthetic usage at all and was diagnosed with OU severe bacterial keratitis and started on Chloramphenicol and Tobramycin eye drops every hour and cycloplegic drops every 2 hours. The patient was told to be checked for TB, Sarcoidosis and Syphilis and corneal scrapings and cultures should be done, but he refused to get any test done. On his next visit he claimed about using lidocaine every 15 minutes so the diagnosis was changed to anesthetic abused keratopathy. The patient was told to stop lidocaine immediately, artificial tears were added to treatment regimen and oral Doxycycline 100mg twice a day, Bethametasone sub/tenon injection was performed, antibiotic drops were decreased to 4 times a day. Two weeks later patient was seen again with dramatic improvement. The hyphema and granuloma-looking like stuff was resolved on 50% and the epithelium was almost healed. The patient got second injection of Bethametasone and was advised to continue the same treatment. The patient was seen again after 2 weeks with great improvement, the hyphema and granuloma looking stuff and anterior chamber cells were resolved, the epithelium was totally healed and corneal anterior stromal scar was formed. The patient was advised to continue artificial tears 4 times a day and never use anesthetic eye drops.

Figures

Below are the photos of the eyes at presentation, and after 3 month.



3. Boljka M, Kolar G, Vidensek J; Toxic side effects of local anaesthetics on the human cornea, *Br J Ophthalmol.* 1994 May;78(5):386-9.
4. Rocha G, brunette I, Le Francois M; Severe toxic keratopathy secondary to topical anesthetic abuse, *Can J Ophthalmol.* 1995 Jun;30(4):198-202.

Conclusion:

Anesthetic abuse keratopathy has been described since 1990 by Kinter JC et al, in two patients associated with infectious crystalline keratopathy (1). Chen HT and co-authors have described a patient with SLE that developed toxic keratopathy from abuse of topically administered anesthetic even at a very low concentration, oxybuprocaine 0.05% (2). Boljka M and colleagues have investigated the cytotoxic effects of 0.5% amethocaine (tetracaine) on the human cornea by scanning electron microscopy. The ultrastructural examination of epithelial cells showed damage of the cell membrane, rarefaction and loss of microvilli, deposits of amethocaine on the corneal surface and accelerated desquamation of superficial epithelial cells (3). Rocha G and co-authors in 1995 have described 3 patients with abuse of 0.5% tetracaine and 0.5% proparacaine eye drops. Their patients had nonhealing epithelial defect, marked stromal edema, folds in Descemet's membrane and a typical stromal ring infiltrate. All three required a conjunctival flap, and two underwent penetrating keratoplasty (4). Our patient in contrast to all described cases in the literature had all findings typical to anesthetic abuse keratopathy plus hyphema, lipid keratopathy and anterior chamber granuloma looking-like picture which to our knowledge has not been described yet. Our patients responded to medical treatment and did not require any surgery.

References:

1. Kinter JC, Grossniklaus HE, Lass JH, Jacobs G. (Division of Ophthalmology, University Hospitals of Cleveland, Case Western Reserve University, Ohio) Infectious crystalline keratopathy associated with topical anesthetic abuse: a case report, *Cornea.* 9(1):77-80, 1990 Jan
2. Chen HT, Chen KH, Hsu WM; Toxic keratopathy associated with abuse of low-dose anesthetic: a case report, *Cornea.* 2004 Jul;23(5):527-9.



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