

Topical Anesthetic Abuse Keratitis Secondary to Floppy Eyelid Syndrome

Yakov Goldich, MD, David Zadok, MD, Isaac Avni, MD, and Morris Hartstein, MD

Purpose: To report the diagnosis and management of a patient with chronic ophthalmic topical anesthetic abuse and floppy eyelid syndrome.

Methods: We describe the case of a 47-year-old man suffering from persistent bilateral ocular irritation and chronic corneal erosions.

Results: The patient was hospitalized in our ophthalmology department and underwent thorough ophthalmic, systemic, and psychiatric evaluation. Chronic topical anesthetic abuse was discovered. Removal of abused drops and copious lubricating treatment lead to partial improvement further permitting diagnosis of floppy eyelid syndrome. Definitive surgical treatment by horizontal eyelid tightening combined with continuous lubrication resulted in remission of symptoms.

Conclusions: Uncommon conditions may coexist in 1 patient. In this case, floppy eyelid syndrome resulted in topical anesthetic abuse. Ophthalmologists should keep both these conditions in mind when treating patients with otherwise unexplained chronic persistent corneal erosions.

Key Words: topical anesthetic abuse, floppy eyelid syndrome

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Topical ophthalmic anesthetic abuse is an uncommon cause of persistent corneal erosions, which may be easily overlooked by the examining ophthalmologist. It is also vital to elucidate the underlying cause for such abuse to successfully treat the patient. We describe a case of bilateral chronic topical anesthetic abuse arising from ocular irritation secondary to floppy eyelid syndrome (FES). To our knowledge, this is the first report of the concurrence of these disorders in the same patient.

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From the Department of Ophthalmology, Assaf Harofeh Medical Center, Tel-Aviv University, Tel-Aviv, Israel.

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Reprints: Yakov Goldich, Department of Ophthalmology, Assaf Harofeh Medical Center, Tel-Aviv University, Beer Yaakov, Zerifin 70300, Tel-Aviv, Israel (e-mail: doctor.goldich@gmail.com).

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CASE REPORT

A 47-year-old white, mildly obese man was referred to our ophthalmology department with a 1-year history of decreased visual acuity and persistent redness of both eyes. The patient had a history of systemic hypertension and was a carrier of hepatitis C virus, without any systemic treatment. The patient had paid multiple visits to ophthalmologists, including inpatient hospitalizations over the previous year because of similar complaints. Among the different diagnoses and treatments, that the patient received were bacterial keratoconjunctivitis and allergic conjunctivitis. During this period, he received topical antibiotics, antiallergics, oral doxycycline, topical steroids, and artificial tears. None of these treatments were helpful in resolving his symptoms.

On examination, he was in significant pain with photophobia (Fig. 1). Best-corrected visual acuity was 6/120 in the right and left eyes. The eyelids were edematous and erythematous. Conjunctiva demonstrated significant injection. There was diffuse corneal haze with peripheral neovascularization, hyperemia, and large central corneal erosions (5.8 × 4.5 mm). No inflammatory response in the anterior chambers was seen. Tactile intraocular pressure was normal. The patient was hospitalized and started on intensive treatment with topical unpreserved lubricants and autologous serum. Microscopic evaluation and culture of corneal scrapings were negative for bacteria and fungi. Systemic workup to exclude possible underlying autoimmune disease with eye involvement was normal. Eventually, the patient admitted to continuous intensive use of topical oxybuprocaine hydrochloride 0.4% drops (Localin; Fisher Pharmaceutical Labs, Tel-Aviv, Israel) for the past year. The bottle was confiscated, psychiatric counseling was offered, and systemic analgesics were prescribed. Bilateral temporary tarsorrhaphies were performed, and the patient's corneas improved. However, the tarsorrhaphies were released several days later at the patient's insistence, and the patient was discharged. He was lost to follow-up for 2 months, but resurfaced and was hospitalized again with the same symptoms and the same clinical picture. Apparently, the patient had resumed topical anesthetic abuse while unsupervised at home. At this admission, physical examination of the patient's eyelids revealed easily everted lax upper eyelids, with a soft tarsus and papillary reaction of palpebral conjunctiva. The severe eyelid edema and tenderness, which improved after topical treatment seemed to have concealed this characteristic picture of FES (Fig. 2). Full-thickness horizontal shortening was performed and after a short period, postoperatively, during which topical treatment was continued, the patient's condition was remarkably improved (Fig. 3). Polysomnography study to rule out obstructive sleep apnea was normal.

DISCUSSION

Both topical anesthetic abuse and FES infrequently occur, thus making it difficult to diagnose this entity promptly and correctly. This may be especially true when both these conditions occur simultaneously in 1 patient.

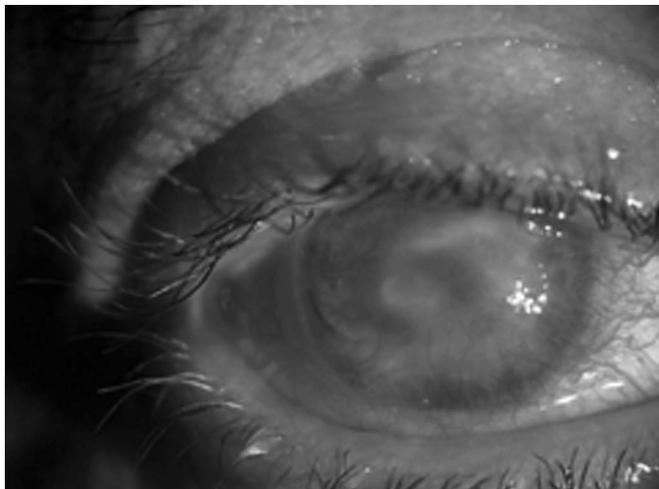


FIGURE 1. Slit-lamp photograph showing the eyelid edema, conjunctival injection, diffuse corneal haze with central corneal erosion, and peripheral neovascularization.

Cases of severe nonhealing corneal epithelial defects after abuse of topical anesthetics have been previously described.¹⁻³ Anesthetic abuse has usually been associated with psychiatric disease or psychoactive substance abuse⁴ and after corneal trauma or surgery.⁵ To our knowledge, this is the first description of FES-incited topical anesthetic abuse for pain relief. Obviously, this created a vicious cycle making the eye condition even worse.

Topical anesthesia has an adverse effect on corneal epithelial microvilli and corneal epithelial cell migration and on keratocytes and corneal endothelial cells.¹ The clinical picture of topical anesthetic abuse includes persistent corneal epithelial defects, stromal edema, corneal thinning, and even corneal perforation.⁵ When the eye is in such a “hot” condition, diffuse erythema and edema of the conjunctiva and eyelids are to be expected, thus concealing the underlying and primary cause for such abuse. In our case, after initial clinical improvement, we discovered the floppy state of the eyelids. Presumably, this was the underlying undiagnosed cause of the patient’s ocular irritation, which led him to seek treatments before admission to our hospital. Delay in diagnosis is not uncommon in FES; however, in this patient, it led him to topical anesthetic abuse.



FIGURE 2. Preoperative appearance. Marked laxity and ready eversion of upper eyelids.



FIGURE 3. Postoperative appearance after full-thickness horizontal eyelid shortening showing marked improvement in both eyes.

FES was first described by Culbertson and Ostler⁶ in 1981 and characteristically involves middle-aged overweight men who present with nonspecific chronic ocular irritation, papillary conjunctivitis, and easily everted, rubbery lax upper eyelids. Corneal diseases, such as punctate epithelial keratopathy, keratoconus, and prone sleeping position have been described with this syndrome.⁷ Whether the cause of FES is a primary abnormality of connective tissue,⁸ or it is a result of secondary degenerative tarsal changes after pressure-induced lid ischemia,⁷ remains unclear. Obstructive sleep apnea is strongly associated with FES, and polysomnography is advised for these patients.⁸

Treatment options for FES are multiple and include eye shield and lubrication, weight loss, and changing sleeping habits.⁹ When such conservative methods are unsuccessful, surgical treatment aimed at horizontal eyelid tightening may be considered,⁹ as performed in our case. Surgery combined with aggressive lubrication and avoidance of topical anesthetic yielded favorable results in our patient, resulting in stabilization of his corneas.

In summary, FES may cause chronic eye irritation and incite selected patients to turn to topical anesthetic abuse for relief; but unfortunately, this may further exacerbate the keratitis in a vicious cycle. Thus, a high level of suspicion is necessary to arrive at the correct diagnosis.

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