

Ayurvedic Topical Medication Induced Bilateral Toxic Endothelitis: A rare case report

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Abstract

Toxic endothelitis is endothelial dysfunction after topical, systemic or intraocular use of substances leading to corneal stromal edema, endothelial pigment deposits with anterior chamber reaction. Causative agents include topical Benzalkonium chloride, Chlorhexidine, Ultraviolet-A, oral amantidine and alcohol consumption. We report a rare case of 51 year old female patient with bilateral toxic endothelitis with inadvertent use of ayurvedic topical drug containing juice of *Allium cepa*-onion juice-1.68ml, juice of *Zingiber officinale*-ginger juice-1.66ml, juice of *Citrus aurantifolia*-lemon juice-1.66ml, honey-5.00ml, benzalkonium chloride (0.01%) and its successful management with short course of topical corticosteroids

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Toxic endothelitis (TE) is a form of endothelitis due to use of topical or systemic medications containing substances causing endothelial dysfunction. This may be caused by use of topical drops containing benzalkonium chloride as preservative,¹ after collagen cross linking with Riboflavin and Ultraviolet-A in keratoconus,² oral use of Amantidine,³⁻⁴ after binge alcohol consumption.⁵ Use of unprescribed ayurvedic topical medication is a common practice in India. Lack of awareness regarding the side effects of the same exists. We report a rare case of acute bilateral toxic endothelitis caused by topical ayurvedic medication.

Case

A 51 year old female presented with bilateral sudden onset painful diminution of vision associated with redness and watering. There was no significant systemic disease. There was no history suggestive of herpes simplex virus keratitis. On examination, best corrected visual acuity (Snellen's) was 6/60 in both eyes with slit lamp showing diffuse conjunctival congestion, intact epithelium, stromal edema, descemet folds and keratic precipitates (Figure 1a & 1b). Anterior chamber showed mild reaction and lens was clear. The intraocular pressure was 10 mm Hg in both eyes. On fundus examination, right eye had epiretinal membrane (ERM) and left eye was within normal limits. Specular microscopy of both eyes showed polymegathism and pleomorphism of endothelial cells. Pachymetry was 590 microns and 587 microns in right and left eye, respectively.

The patient gave history of use of ayurvedic eye drops since one week prior to onset of symptoms (each 10ml consisting of *Allium cepa*-onion juice-1.68ml, juice of *Zingiber officinale*-ginger juice-1.66ml, juice of *Citrus aurantifolia*-lemon juice-1.66ml, honey-5.00ml, preservative: Benzalkonium chloride solution 0.1% v/v).

Patient was diagnosed as drug induced acute toxic bilateral endothelitis and the causative drug was stopped. Topical steroid (Fluorometholone 0.1%) three times per day (weekly taper), antibiotic eye drop for 6 times per day, carboxymethylcellulose sodium (preservative free) for 4

times per day, sodium chloride 5% eye drops 4 times/day and sodium chloride 6% eye ointment once at night was prescribed. After first week of treatment, visual acuity improved to 6/12 in right eye and 6/9 in left eye. On two month follow up, vision improved to by 6/9 in right eye (in

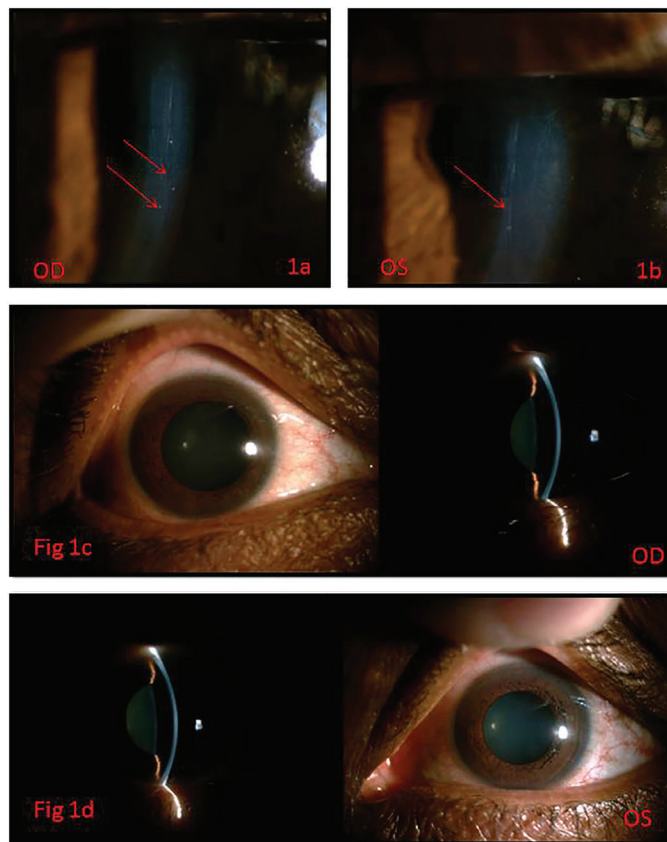


Figure 1: (a) Slit lamp photograph of right eye (RE) red arrow showing Descemet's folds and white arrow showing keratic precipitates; (b) Slit lamp photograph of left eye (LE) red arrow showing Descemet's folds; (c) Slit lamp photograph (diffuse and slit) of Right eye (RE) post treatment; (d) Slit lamp photograph (slit and diffuse) of Left eye (LE) post treatment

view of pre existing ERM confirmed by Optical coherence tomography) and 6/6 in the left eye with complete resolution of bilateral corneal edema (Figure 1c,1d).

Patient maintained her vision and had no recurrence of symptoms at one year of follow up.

Discussion

Use of over the counter, unprescribed ayurvedic topical medication is a common practice in India. The causes for corneal edema can be broadly classified based on mechanism: damage to corneal epithelium, raised intraocular pressure, endothelial dysfunction and idiopathic. There has been case report of idiopathic edema without epithelium compromise.⁶ In our case since there was no epithelial compromise, normal intraocular pressure and no other significant positive history contributing to clinical picture. Therefore we conclude endothelial dysfunction as the cause of corneal edema in our case. Corneal edema due to use of topical medications^{7,8} and toxins^{9,10} has been documented. We propose the acute corneal edema caused by use of the topical ayurvedic medication as the most viable etiology.

This case report highlights the side effect of non- prescribed ayurvedic drug, the need of urgent medical care and patient awareness for the same.

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