Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/mjafi

Case Report

Bilateral sterile perforated corneal ulcer in an HIV case

Col V.K. Baranwal^{a,*}, Lt Col Santosh Kumar^b, Lt Col Avinash Mishra^c,
Lt Col K. Satyabala^d, Maj Gen Ajay K. Dutta (Retd), vsm^e, Brig P.K. Murthy^f

^a Senior Advisor (Ophthalmology), Command Hospital (CC), Lucknow 02, India

^b Classified Specialist (Ophthalmology), Command Hospital (SC), Pune-40, India

^c Classified Specialist (Ophthalmology), Military Hospital Ahmedabad, India

^d Classified Specialist (Ophthalmology), Command Hospital (CC), Lucknow, India

^e Ex-Commandant, Command Hosp (CC), Lucknow, India

^f Deputy Commandant, Command Hospital (CC), Lucknow, India

ARTICLE INFO

Article history:

Received 9 August 2012

Accepted 12 November 2012

Available online 23 February 2013

Keywords:

HIV

Sterile corneal perforation

Fibrin glue

Amniotic membrane

blepharitis etc.^{3–5} We report an uncommon case of bilateral sterile corneal perforation in an HIV-infected patient.

Case report

A 35 years old male patient, on immunosurveillance with highly active antiretroviral therapy (HAART) for last four years, was referred to us for an ophthalmology consultation as he had developed redness in eyes and some eyelid lesions. Ocular examination revealed vision of 6/9 both eyes, matted eyelashes, vesicular lesions on lids, mucoid discharge, decreased tears (Schirmers 2 mm), dry and lusterless cornea in both the eyes. Rest of the ocular examination was normal. Corneal sensations were normal in both eyes. Tear film break up time test (TFBUT) was not done as the patient presented acutely with Perforation. CD-4 count was low. Hematological tests and investigations for collagen vascular diseases were negative.

A provisional diagnosis of dry eye with HIV was made. He was prescribed Genteal eye drops and Genteal gel tear substitutes. No topical acyclovir ointment was prescribed as it was difficult to say whether the vesicular lid lesions were herpetic in origin as they were already in healing stage when the patient first came to us.

After a period of one week, ocular examination of the right eye revealed a 2 mm central corneal perforation, anterior

Introduction

Ocular manifestations of human immunodeficiency virus (HIV) infection are common. Approximately 70–100% of HIV-infected patients will be treated for an HIV-associated eye disorder during the course of their illness.^{1,2} Anterior segment manifestations of HIV/AIDS have been noted in about 50% of HIV-infected individuals.

The anterior segment and external ocular lesions can be in the form of microvasculopathy, Kaposi's sarcoma, keratoconjunctivitis sicca, molluscum contagiosum, conjunctivitis,

* Corresponding author. Tel.: +91 (0) 9532170366 (mobile), army no. 6582 (O) 6184 (R).

E-mail address: mamtabar@rediffmail.com (V.K. Baranwal).

0377-1237/\$ – see front matter © 2012, Armed Forces Medical Services (AFMS). All rights reserved.

<http://dx.doi.org/10.1016/j.mjafi.2012.11.001>

Fig. 1 – Corneal perforation right eye.

chamber was shallow and the iris was incarcerated in the wound (Fig. 1). Cultures from the conjunctiva and cornea were sterile. The patient was taken to the operation theater immediately where the anterior chamber was reformed with viscoelastic, the iris was pushed back, fibrin glue was used to seal the perforation, a bandage contact lens was placed and the eye was patched (Fig. 2). On the next day, the perforation had sealed, topical treatment with tear substitutes and 0.3% ciprofloxacin eye drops was started. After 2 weeks the distant visual acuity in right eye was 6/18 and 6/9 in the left eye respectively. Subsequently after a week the patient developed a similar 2.5 mm paracentral perforation with iris prolapse in the left eye (Fig. 3). Cultures from the conjunctiva and cornea were again sterile. The same treatment was administered in the left eye along with sealing of perforation with fibrin glue. Corneal healing was slow in the left eye with delayed epithelisation. Multi-layered amniotic membrane was sutured to conjunctiva and limbus by 10/0 polyamide sutures thereby covering the perforation. However, it got extruded in 48 h

Fig. 2 – Fibrin glue application right eye.

Fig. 3 – Corneal perforation left eye.

(Fig. 4). Thereafter corneal epithelisation occurred with the formation of a pseudocornea over the next 10 days.

A final diagnosis of sterile perforated corneal ulcer both eyes with pseudocornea left eye was made. Presently, best corrected visual acuity in right is 6/12, eye is quiet, cornea is thinned out, anterior chamber is formed and the eye is dry. Best corrected visual acuity in left eye is 6/9, eye is quiet, pseudocornea is present and BCL is in place. He is on topical tear substitutes. Punctal occlusion has been contemplated after managing the acute stage of perforation. Topical cyclosporine which acts as a T-cell inhibitor is unlikely to have any beneficial effect in this case as the T-cell population is already diminished and hence was not prescribed.

Discussion

HIV commonly presents as a microvasculopathy, conjunctivitis, blepharitis, dry eyes, molluscum contagiosum and Kaposi's sarcoma.^{4–6} HIV is a risk factor for corneal ulceration due to immunodeficiency and keratoconjunctivitis sicca which causes colonization by bacteria. Peripheral corneal

Fig. 4 – Amniotic membrane graft application left eye.

thinning and silent corneal perforation has been reported earlier in an HIV seropositive case.⁷ Previously retinal lesions in the form of CMV retinitis, toxoplasmosis were reported more often, now, one has to be more vigilant about anterior segment involvement.⁸ Further studies are required to find the exact cause of increasing anterior segment involvement. However, it may be due to better management of these cases now days as compared to earlier.

Dry eyes should be specifically looked for in HIV patients as this can lead to corneal perforation. In our patient severe dry eye was followed by bilateral corneal perforation which was detected in time due to which the integrity of the globe could be maintained. The use of fibrin glue has been documented for sealing corneal perforations especially those of about 2 mm.⁹ In this case the right eye responded well to treatment but the left eye perforation increased in size for which fibrin glue along with amniotic membrane was used.¹⁰ Amniotic membrane supports epithelisation due to presence of growth factors. In conclusion one should specifically look for redness in eyes, discharge and dry eyes periodically in HIV patients so as to detect corneal perforations in time and to prevent its sequelae.

Conflicts of interest

All authors have none to declare.

REFERENCES

1. Lewallen S. HIV/AIDS: what is the impact on prevention of blindness programmes? *J Com Eye Health*. 2003;16:33–34.
2. Cunningham ET, Margolis TP. Ocular manifestations of HIV infection. *N Eng J Med*. 1998;339:236–244.
3. Shukla DS, Rathinam SR, Cunningham ET. Contribution of HIV/AIDS global blindness. *Int Ophthalmol Clin*. 2007;47:27–43.
4. Biswas J, Sudharshan S. Anterior segment manifestations of human immunodeficiency virus/acquired immune deficiency syndrome. *Indian J Ophthalmol*. 2008;56:363–375.
5. Jeng BH, Holland GN, Lowder CY, Deegan WF, Raizman MB, Meisler DM. Anterior segment and external ocular disorders associated with human immunodeficiency virus disease. *Surv Ophthalmol*. 2007;52:329–368.
6. Lucca JA, Farris RL, Bielory L, Caputo AR. Keratoconjunctivitis sicca in male patients infected with human immunodeficiency virus type 1. *Ophthalmology*. 1990;97:1008–1010.
7. Raina Usha K, Sharma Vivek, Jain Shailley, Arora Ritu, Mehta DK. Peripheral corneal thinning and silent corneal perforation in an HIV seropositive case. *Acta Ophthalmol Scand*. Apr 2004;82(2):246–247. April 20.
8. Sleasman JW, Goodenow MM. HIV-1 infection. *J Allergy Clin Immunol*. 2003;111:582–592.
9. Panda A, Kumar S, Kumar A, Bansal R, Bhartiya S. Fibrin glue in ophthalmology. *Indian J Ophthalmol*. 2009;57:371–379.
10. Hick S, Demers PE, Brunette I, La C, Mabon M, Duchesne B. Amniotic membrane transplantation and fibrin glue in the management of corneal ulcers and perforations: a review of 33 cases. *Cornea*. 2005;24:369–377.