



EXTERNAL OPHTHALMOMYIASIS: A CASE SERIES FROM HIMACHAL PRADESH

Ophthalmology

Dr Smriti Sharma* M S Ophthalmology, Department Of Ophthalmology, Civil Hospital Palampur, Kangra H.p. 176001.India.*Corresponding Author

Dr. Rajeev Tuli Professor and Head of Department of Ophthalmology Dr. Rpgmc Tanda Kangra H.P. 176001.India.

ABSTRACT

Ophthalmomyiasis is an infestation of the eye with larvae of most common sheep nasal botfly (*Oestrus ovis*). Infestation by *Oestrus ovis* commonly cause external ophthalmomyiasis, but sometimes larvae may penetrate the ocular globe and can cause internal ophthalmomyiasis. We describe here 4 cases of external ophthalmomyiasis who presented with history of foreign body sensation, redness, and discharge in eyes. In our case series, there was a peculiar history of dust storm following which the patients presented with such history. On examination larvae were seen in conjunctival sac. Following removal of larvae under local anaesthesia there was improvement in signs of inflammation in few hours. Patient was prescribed topical antibiotics. Such conditions usually mimic acute conjunctivitis, so thorough slit lamp examination necessitates proper diagnoses of rare parasitic infestation.

KEYWORDS

external ophthalmomyiasis, sheep nasal botfly, conjunctivitis, larvae.

INTRODUCTION

Ophthalmomyiasis is a rare parasitic eye infestation in humans occurring in <5 % of all cases of human myiasis. Ophthalmomyiasis externa is mainly caused by sheep botfly *Oestrus ovis*.¹

Ophthalmomyiasis is of 3 types; external where larvae deposited on the eyelid or ocular surface, internal type where larvae penetrate the globe and can be seen in the vitreous cavity or subretinal space. The most damaging species is orbital myiasis where larvae get their way into the orbital structures and cause serious damage.²

Cases of ophthalmomyiasis externa by sheep nasal botfly have been reported from various parts of the world including India.³ The present case series therefore highlights the awareness among ophthalmologist regarding timely diagnosis and management of this rare parasitic infestation.

Case 1

A 18 year female student presented to the ophthalmology department on 24/4/2018 with history of trauma to her right eye with a flying insect. Thereafter she complained of FB sensation right eye with redness and swelling of lid.

On examination her visual acuity was 6/6 both eyes. Pupillary reactions were normal. The eyelid of the affected eye was mildly swollen.

On slit lamp examination, translucent 1-2 mm worms with dark heads were seen crawling in the upper fornix and cornea (Fig1). Anterior segment and fundus examination was normal.



Fig 1. Larvae seen crawling over cornea.

Using topical anaesthesia, 4% xylocaine drops these worms were removed with forceps under microscope and were sent for microbiological examination.

About 20 such worms were removed. Pt was put on topical antibiotics. Repeat slit lamp examination on the next was found to be normal.

Case 2

A 34 year female patient presented to the ophthalmology department with history of trauma to her left eye with some flying insect. She had history of foreign body sensation, watering and redness of left eye. Her Visual acuity was 6/6 both eye.

On slit lamp examination, Mild conjunctival congestion of left eye was seen.

Tiny translucent crawling worms were seen in the upper and lower fornix in left eye (Fig 2). Similar worms were seen in her right eye also.



Fig 2. Larva seen in upper fornix.

Under 4 % topical xylocaine these worms were removed under microscope from her both eyes and were sent for microbiological examination. Pt was put on topical antibiotics.

Pt was reviewed on next day which showed 2 more such worms in her left eye lower fornix. These were removed under topical anaesthesia.

Case 3

A 51 year male patient presented to the ophthalmology department on 25/4/2018 with history of something falling into his right eye while cutting the crops.

Following which he had history of foreign body sensation and watering from his right eye.

On examination his Visual acuity was 6/6 both eyes. On slit lamp examination, tiny translucent worms with black heads were seen crawling over the cornea and some in the upper and lower fornix. Anterior segment was normal.

Under 4% xylocaine, topical anaesthesia these worms were grasped with forceps and sent for microbiological examination. About 15 such worms were removed.

Case 4

A 30 year female patient presented to the emergency department on 25/4/2018 with history of something falling into right eye while she was husking the wheat.

She had history of foreign body sensation and something crawling in her right eye. There was history of redness with watering of right eye.

On examination her Visual acuity was 6/6. Conjunctival congestion was present in her right eye.

There was mild discharge. Anterior segment examination was normal. On slit lamp examination, translucent tiny crawling worms were seen in the upper fornix and eyelid margin. (Fig 3).



Fig 3. Larvae seen on eyelid margin.

Under topical 4% xylocaine, 15 such worms were removed. Cornea showed punctuate staining pattern. She was given topical antibiotics.

Patient was reviewed in the morning in outpatient department and 2 such worms were removed from lower fornix.

On laboratory examination, the larvae were identified as of *Oestrus ovis*. They present a pair of sharp, dark brown oral hooks connected to the internal cephalopharyngeal skeleton and multiple spiny projections along with a spindle shaped skeleton (Fig 4).



Fig 4. Spindle shaped skeleton seen on laboratory examination.

DISCUSSION

Oestrus ovis is a member of oestridae family which is a large family of obligate parasites of animals in their larval stage causing myiasis. The sheep botfly *Oestrus ovis* is a typical parasite of small ruminants at larval stage.⁴ The natural cycle begins in summer, when the gravid female ejects first instar larvae around their host's nostril directly or by dropping the fertilised eggs during flight, from a height of 0.5m. The larvae migrate to paranasal sinus, where they mature by feeding on mucus detritus. Once their development has finished, the maggots return to nasal cavity, from where they are evacuated and fall to the ground, transforming into pupae.⁵ Humans are accidental hosts. However, the tiny larvae do not develop any further in human eye beyond the first larval instar.

In our case series, there was a peculiar history of dust storm a day back, following which these patients presented with history of foreign body sensation, redness.

Various species of flies causing ophthalmomyiasis are *Oestrus ovis*, latrine fly (*Fannia*), house fly, cattle botfly. Ophthalmomyiasis due to *Oestrus ovis* was described for the first time in 1947 by James.⁶

Many cases have been reported from various parts of India. This is common in rural and sheep rearing areas. Our case series is of external ophthalmomyiasis. In external type, patient may present with classic

conjunctivitis, pseudomembranous conjunctivitis, punctate keratitis or keratouveitis.⁷ Many patients report having had an insect buzzing around their face or striking them in eye immediately prior to the onset of symptoms.

Treatment consists of mechanical removal of larvae after an application of topical anaesthetic agent. Anaesthetic drops may be useful to immobilise the larvae during removal. Local antibiotics further prevent secondary bacterial infection and reduce inflammation.⁸ Follow up examination is advised to remove any additional larvae and rule out any complication.

REFERENCES:

1. Naima Fasih, Qaiser K N, Bokhari S A, Jamil B, Mohammad A S. Human ophthalmomyiasis externa caused by the sheep botfly *Oestrus ovis*: a case report from Karachi, Pakistan. *Asian Pac J Trop Biomed* 2014; 4(10):835-7
2. Mohammad A A, Fahad I, Saikhan A, Dahmash A S. External ophthalmomyiasis: A case report. *Saudi Journal of Ophthalmology* 2014(28):322-4
3. Laliha S, Swarna, Fathima, sankar P, Charles J. External ophthalmomyiasis-A case report. *Int J Med Health Sci*. July 2014(3);3
4. Sen M, Das A, Sharma M, Mittal v, Singh R. External Ophthalmomyiasis: Case Reports of Two Cases Associated With Agrarian Practices. *J Bacteriol Mycol Open Access* 2017; 5(4): 00145
5. Nithisha T. M, Vijay Kumar Srivastava, Nanda Shivkumar, Kerheho Kera, Sangeetha S. "A Case of External Ophthalmomyiasis in Semi Urban Area in Bangalore". *Journal of Evolution of Medical and Dental Sciences* 2014; 3(56): 12826-8.
6. Panday A, Madan M, Asthana A K, Das A, Kumar S, Jain k. External ophthalmomyiasis caused by *Oestrus ovis*: A rare case report from India. *Korean J Parasitology*. 2009;1(47): 57-9
7. Khurana S, Pandav S, Chatterjee S S. Ophthalmomyiasis: Three cases from north India. *Indian Journal of medical microbiology*. 2010; 3(3):257-61.
8. Nigwekar S. External ophthalmomyiasis: A case report. *Pravara Med Rev* 2009; 1(3):28-30.