

Ophthalmomyiasis Externa: An Underdiagnosed Condition Causing Red Eye

Snehal Mahadik, Vaibhavi Parate*, M.K. Rathore

Ophthalmomyiasis externa is a rare cause of red eye, which is often mistaken for conjunctivitis. The objective of this case report is to create awareness about this entity, which is caused by larvae and for which man is an accidental host. Here is a case report of a 45-year-old male patient who presented to the eye OPD in R.D. Gardi Medical College, Ujjain, with complaints of redness, watering, foreign body sensation, and photophobia in his left eye. Both eyes were thoroughly examined on a slit lamp. Three larvae were found in the left eye, which were manually removed under topical anaesthesia. The slide was prepared and sent to the laboratory and was found to be larvae of *Oestrus ovis*. Based on the symptoms and presence of *O. ovis* larvae, the diagnosis of Ophthalmomyiasis was made. The patient was successfully treated for the same. A follow-up was done on the subsequent day and then after 7 days. The patient got total relief without any ocular or systemic complications on follow-up. This case report depicts the importance of meticulous and thorough eye examination of each and every case, even if it seems trivial at first glance. If left untreated, it can cause vision-threatening complications. Thus, a meticulous examination should be done so that such kind of rare cases should not be missed.

Access this article online

Website:

www.cijmr.com

DOI:

10.58999/cijmr.v4i02.212

Keywords:

Conjunctivitis, Larvae
Manual, Extraction,
Oestrus ovis,
Ophthalmomyiasis.

Introduction

Ophthalmomyiasis, also known as ocular myiasis, is the term used to denote the larval infestation of the eye. The larval form may be of the Cyclohapid and Oestridae fly family. Ocular involvement accounts for less than 5% among all cases of human myiasis.¹ Human ophthalmomyiasis occurs in external, internal, and orbital forms. Ophthalmomyiasis external mainly involves external structures like the conjunctiva. In ophthalmomyiasis interna, larvae penetrate the globe and enter the vitreous cavity or subretinal space. While in orbital ophthalmomyiasis, larvae invade the orbital structures, causing serious damage.² External ophthalmomyiasis is caused by *Oestrus ovis*- the sheep nasal botfly's larva. It can manifest as different types of conjunctivitis, namely acute catarrhal conjunctivitis, classic conjunctivitis, pseudomembranous conjunctivitis, as well as other conditions like conjunctival hemorrhage, punctate keratitis, eyelid edema and erythema.³ The treatment involves the manual removal of the larvae under topical anesthesia, followed by the application of

topical drugs. The symptoms resolve immediately after the larvae are removed.

Case Report

A 45-year-old male farmer presented with complaints of redness, watering, foreign body sensation and swelling in both eyelids of the left eye for one day to the ophthalmology outpatient department at R.D. Gardi Medical College.

He reported a history of something falling into his eye while working in the field. There is no history of similar events in the past. Detailed examination shows unaided visual acuity of 6/18 and best-corrected visual acuity (BCVA) of 6/6 in both eyes. Examination of the left eye (affected eye) demonstrates edematous upper and lower eyelids and generalized bulbar and palpebral conjunctival congestion (Figure 1A).

On slit-lamp examination revealed the presence of three small, 1 to 2 mm white, motile larvae crawling over the upper and lower fornices of the conjunctiva (Figure 1B) was revealed. The organisms were freely motile, darting in the fornical spaces to avoid the light

Department of Ophthalmology, R D Gardi Medical College, Ujjain, Madhya Pradesh, India.

Correspondence to: Vaibhavi Parate, Department of Ophthalmology, R D Gardi Medical College, Ujjain, Madhya Pradesh, India. E-mail: vparate96@gmail.com

Submitted: 07/06/2025

Revision: 10/06/2025

Accepted: 14/06/2025

Published: 14/08/2025

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

How to cite this article: Mahadik S, Parate V, Rathore MK. Ophthalmomyiasis Externa: An Underdiagnosed Condition Causing Red Eye. Central India Journal of Medical Research. 2025;4(2):41-43.



Figure 1: (A) Shows a congested and chemosed LE (B) Shows a larva in the palpebral conjunctiva in the lower lid.

from the slit-lamp. After obtaining informed consent from the patient for removal and documentation, topical anaesthetic eye drops (proparacaine 0.5%) were instilled. The larvae were carefully removed using a fine pair of forceps. The organisms were placed in normal saline and sent to the laboratory for identification. These organisms were later identified and photographed. A fundus examination was performed and found to be normal, with no evidence of intraocular organisms.

Topical antibiotics (Tobramycin 0.3% with carboxymethyl cellulose 0.5%) were prescribed. A follow-up was scheduled for the next day, where the patient showed no further signs of the organisms. After seven days, the patient's symptoms completely resolved. The diagnosis was confirmed based on the identification of the organisms, which were found to be *O. ovis*.

Discussion

In this case, the organism identified was *O. ovis* larvae. Myiasis in humans is generally rare and occurs mostly in areas with poor hygiene and an abundance of flies. Cattle, rodents, sheep and deer are the natural hosts, while humans are accidental hosts.⁴ *O. ovis* larvae is a sheep nasal botfly that becomes a yellowish-grey fly, measuring 10 to 12 mm in length. *O. ovis* has the capability of hosting immediately after birth. The life cycle of *O. ovis* larvae begins when the adult female



Figure 2: Shows a microscopic view of larvae (*O. ovis*)

botfly lays eggs around the nostrils of sheep and goats. The eggs hatch, and the larvae migrate into the sinuses. After several weeks of growth, the larvae exit the host and pupate on the ground. Adult flies emerge from the pupae, with a lifespan of up to one month, and the cycle continues.⁵ Microscopy revealed a spindle-shaped skeleton with multiple segments and intersegmental spine bands. A pair of sharp, dark brown oral hooks was attached to the internal cephalopharyngeal skeleton, and tufts of numerous brown hooks were present on the margins of each body segment. These features led to the identification of the larvae as the first-stage larvae of *O. ovis*, the sheep nasal botfly.⁶ Ophthalmomyiasis is often misdiagnosed in ophthalmic patients who present with complaints of unilateral redness, most of whom come from areas near sheep or goat farms. Therefore, a thorough workup is essential, along with examining the patient from every possible aspect to arrive at a proper diagnosis. After the larvae were removed, the patient was prescribed topical Tobramycin 0.3% (1 drop every 2 hours) and topical carboxymethylcellulose 0.5% (1 drop six times a day). The treatment was effective, and the patient experienced significant relief of symptoms the very next day. A follow-up after 7 days showed that the symptoms had completely resolved.

The differential diagnosis includes follicular conjunctivitis, foreign body conjunctivitis, catarrhal conjunctivitis, and other infestations, such as those caused by tiny *Paederus* spp. beetles. The key criteria for diagnosing ophthalmomyiasis are as follows: a sudden sensation of a foreign body, occurring while the patient is in an endemic area during warmer months, with the patient not necessarily noticing any flies.

Conclusion

O. ovis ophthalmomyiasis does not appear to be widely recognized, and the diagnosis is often missed, as it mimics conjunctivitis. The condition is easily treatable,

but if there is a delay in treatment, it may lead to deep invasion into the eye or orbit, causing severe damage. Therefore, early detection with meticulous examination is mandatory to rule out ophthalmomyiasis and prevent its complications.

Conflict of Interest

There is no conflict of interest.

References

1. Gupta PC, Ram J, Faisal TT, Agarwal A, Khurana S, Prasad A. Ocular Myiasis. J Ophthalmic Vis Res. 2018 Jul-Sep;13(3):361-362. doi: 10.4103/2008-322X.158891. PMID: 30090197; PMCID: PMC6058547.
2. Bada, Gnana Jyothi C.; Apoorva, D; Gathinavar, Salman S.; Patil, Satish S.I. Case Series of Ocular Ophthalmomyiasis. TNOA Journal of Ophthalmic Science and Research 61(4):p 499-501, Oct-Dec 2023. | DOI: 10.4103/tjosr.tjosr_38_23
3. Sharma M, Sareen A, Negi SS Ophthalmomyiasis: A Case Report. DJO 2020;30:52-53
4. Sadananda RC, Ravindra R, G R. Ophthalmomyiasis Externa Presenting As Red Eye. J Clin Biomed Sci. 2020; 10(2): 69–71.
5. Althnayan YI, Alhadlaq OS. Ophthalmomyiasis Externa: A Case Report in a Tertiary Care Center in Riyadh, Saudi Arabia. Case Rep Ophthalmol. 2024;15(1):751–756.
6. Singh A, Rajwadkar V, Aggarwal I. External ophthalmomyiasis due to *Oestrus ovis*—a rare case series. Ophthalmology Journal. 2022;7:51–54.