

CASE REPORT

Ocular myiasis: Creepy crawlies in the eye

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**Abstract**

Ocular myiasis is an infestation of eye by larvae of flies from *Diptera* family. It is a chance infection in humans when they come in contact with the actual commensal of these organisms such as sheep and goats. Anterior segment is often involved and common presentation is conjunctivitis and requires high index of suspicion for diagnosis and subsequent treatment. We present a case of myiasis in a 25-year-old female who visited the emergency ophthalmic services with conjunctivitis; however, slit lamp examination revealed live larvae. The patient was given a thorough wash with normal saline followed by manual removal of all the larvae with forceps under topical anesthesia. The disease *per se* in its external form is not savage; however, it is imperative for the ophthalmologists to be aware of this entity so as to institute a timely, and thorough treatment.

Introduction

Infestation of the eye by the larvae of flies from the order *Diptera* is termed as ocular myiasis or ophthalmomyiasis.^[1] Larvae of the *Oestrus ovis* are one of the most common association seen with ocular myiasis.^[2] Known to be a commensal of the livestock especially sheep and goats, human infection is more of a chance occurrence and seen commonly in the rural population.^[3] The infestation is generally restricted to the anterior segment, known as the external variety, and essentially mimic conjunctivitis.^[1] A thorough clinical examination on slit lamp would elicit presence of these mobile larvae and help clinch the diagnosis in favor of myiasis. We describe a case of ocular myiasis presenting to our emergency services with conjunctivitis like features and discuss the management course of the disease.

Case Report

Written informed consent was taken from the patient for reporting the case.

A 25-year-old female patient, presented with chief complaints of irritation, mild redness, and watering in her right eye for half an hour before presentation.

She did not give any history of foreign body going into the eye, contact with any livestock or recent history of swimming in a pond. On ocular examination, her visual acuity was 6/6 in both eyes. Anterior segment examination of the right eye revealed presence of diffuse conjunctival bulbar and palpebral hyperemia with multiple, small, mobile translucent larvae in the upper fornix, and moving over the conjunctiva and cornea [Figure 1]. Cornea was clear, anterior chamber was quiet, and posterior segment was unremarkable. The anterior and posterior segment examination of left eye was essentially normal. The patient was given a thorough wash with normal saline followed by manual removal of all the larvae with Jeweller's forceps under slit lamp examination with topical anesthesia. The parasitological examination revealed the presence of *O. ovis* larvae from the family *Diptera* [Figure 2]. The patient was started on antibiotics, lubricants, and low potency topical steroids for 2 weeks, during which the patient showed complete recovery.

Discussion

Ophthalmomyiasis is a clinical condition caused due to infestation of the eye by the larvae of the order *Diptera* and

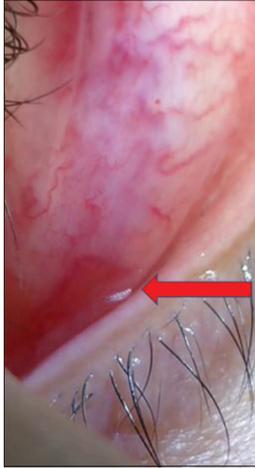


Figure 1: *Oestrus ovis* larva present on the conjunctiva



Figure 2: Microscopic picture of the larva of the *Oestrus ovis*

account for 5% of the entire human pythiosis.^[4] Various flies seen in association with ocular myiasis include Russian botfly *Rhinoestrus purpureus*, cattle botfly *Hypoderma bovis*, and ovine botfly *O. ovis*.^[1] The larva of *O. ovis*, the most common pathogen causing ocular myiasis, is a commensal parasite of the nasal cavity and the paranasal sinuses of the livestock, especially sheep and goats. Individuals residing in low socioeconomic conditions and rural areas are predisposed to myiasis.^[3] However, lately there has been an increased incidence of cases being reported from the more developed areas.

Humans get fortuitously infected when these larvae come in contact with the ocular surface and depending on the site of infestation it can be further segregated as orbital, external, and internal. The external variety involves presence of larvae superficially over the conjunctiva while internal implies intraocular infestation which can be potentially blinding. The involvement of the orbit presenting as orbital cellulitis is the most severe form of the disease, however, with the least frequent incidence.^[5,6] Humans get accidentally affected when the

larvae gain entry onto the ocular surface and usually presents with an external disease with conjunctivitis like picture. The closest differential is an allergic or viral conjunctivitis, however, unioocular involvement and a distinct history of something getting into the eyes usually clinches the diagnosis in the favor of external ocular myiasis. The external variety presents with conjunctival congestion, foreign body sensation, follicular reaction with or without lid edema, and in severe form there can be conjunctival hemorrhage, punctate keratitis or even pseudomembrane like picture.^[7] Since the larvae lack proteolytic enzymes, intraocular penetration is not possible; however, there have been rare reports of keratitis and keratouveitis secondary to ocular myiasis.^[8] Corneal involvement if present usually is seen in the perilimbal region as corneal infiltrates or gelatinous conjunctival swelling around the superior limbus with whitish plaques.^[7] Intraocular disease, although a very rare occurrence can have presentation with vitreous hemorrhage, retinal hemorrhage retinal detachments, /or endophthalmitis.^[3] Histopathology shows the presence of eosinophilic infiltration in the affected tissue and the larvae being distinctly surrounded by non-granulomatous infiltrates.^[9] The identification of larvae on the slit lamp examination and further confirmation of the genus by microscopic examination help to come to a definite diagnosis.

For the external variety of ocular myiasis, early and complete removal of the larvae is the cornerstone of management, along with supportive symptomatic treatment in the form of antibiotics and lubricants. The use of topical anesthetics would not just make the patients comfortable but also facilitate the complete removal of the larvae. The disease *per se* in its external form is not savage; however, it is imperative for the ophthalmologists to be aware of this entity so as to institute a timely, thorough, and early treatment.

Conclusion

Ocular myiasis is a chance infestation of human eye, that in its external form can mimic conjunctivitis and therefore requires awareness on the part of the treating ophthalmologists, for timely diagnostic and therapeutic interventions.

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