

# Unilateral External Ophthalmomyiasis due to *Oestrus ovis*: Two cases on two Consecutive days

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## Case Report

**Abstract:** Ophthalmomyiasis, fly larvae infestation, is a rare condition that can have variable presentation depending on the type of fly, the ocular structures involved, and the level of penetration. We present 2 cases with complaints of foreign body sensation, pain, redness and watering in one eye. Mechanical removal and good local treatment helped the patients; removed larvae were identified to be of *oestrus ovis* (sheep nasal botfly). Ophthalmomyiasis externa is mainly caused by sheep nasal botfly and is common in farming communities, the reported cases are also farmers by occupation. If not detected and treated early the external disease may get converted into internal ophthalmomyiasis leading to serious complications like vitreous haemorrhage and retinal detachment. The infestation is rare in India and very few cases are on records.

**Keywords:** Ophthalmomyiasis, *Oestrus ovis*, ocular parasite, ocular infestation.

### Introduction

Myiasis is defined as the invasion of living and/or dead animal tissue by dipterous fly larvae (maggots) and is common throughout the tropics.<sup>[1]</sup> Ocular involvement or Ophthalmomyiasis is seen to occur in 5% of all cases of myiasis<sup>[2]</sup>

There are 3 different forms of Ophthalmomyiasis based on the portion of eye involved:

Ophthalmomyiasis externa – results from infestation of conjunctiva, cornea by larvae.

Ophthalmomyiasis interna – when larvae penetrate the ocular globe and can be visualized in aqueous humor, subretinal space and vitreous cavity.

Orbital ophthalmomyiasis – least common condition due to invasion of the orbit, sometimes may lead to rapid destruction of globe<sup>[3]</sup>.

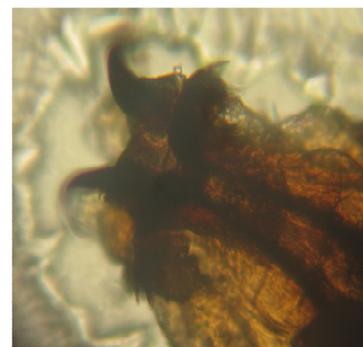
*Oestrus ovis*, the sheep nasal botfly, a parasite in nasal and paranasal cavities of goats and sheep is the most common cause of conjunctival ophthalmomyiasis.

### Case 1:

A 35 year old male patient, farmer, presented to ophthalmology OPD in late February, 2013 with complaints of foreign body sensation, pain, redness and watering of right eye for 2 days. He gave history of working in a sugarcane field 2 days back. He had visited a local doctor and had been prescribed antivirals for the same without any relief and hence had come to us.



**Clinical photograph 1:** larvae in fornices



**Clinical photograph 2:** microscopic larvae (2 horns seen)

His vision in both eyes was 6/6, N6. On slit lamp examination, the right eye showed lid swelling, bulbar and forniceal conjunctival congestion, initially, two to three 2mm \* 0.5 mm crawling larvae were seen in the lower bulbar conjunctiva, on further examination under topical anaesthesia, there were a total of 9 such larvae, which were removed mechanically with the help of a plain forceps. The cornea, anterior chamber and rest anterior and posterior segment findings of both eyes were within normal limits. Sac was patent and the complete blood count and random blood sugar was within normal limits. The larvae were preserved in formalin and sent for microbiological examination, they were identified to be the larvae of *Oestrus ovis*, with characteristic sharp dark brown oral hooks. Posterior spiracular plates were not seen as the larvae were

probably immature; the body was divided into 11 segments, each being covered by tufts of numerous brown hooks with spinose tips on the anterior margin. The patient was given topical anaesthetic (Proparacaine: to paralyse eggs if they have escaped examination) and antibiotic (Ofloxacin 0.3%) eye drops and ointment and was followed up after 24 hours, 1 week and 2 weeks. The dilated fundus was normal even on 2nd week follow-up. The patient was symptom free till then.

#### Case 2:

The very next day, 29 years old female, farm worker presented with complaints of watering, redness in right eye for two days, her husband told that he had seen and removed around 40 small crawling insect like things from her eye with the help of tiny stick, he could see them even on the present day. Visual acuity was 6/6, N6 in both eyes, on slit lamp examination larvae were seen, removed and subjected to microbiological examination and were identified as the larvae of *Oestrus ovis*, and she was treated on the same line of treatment as the first case and is asymptomatic till date. Fundus is normal and there is no decrease in vision.

#### Discussion

Ocular myiasis is generally caused by sheep botflies and fleshflies<sup>[3]</sup> The most commonly reported organism in literature is *oestrus ovis*, a sheep botfly highly prevalent in sheep herding and farming communities.<sup>[4]</sup> These flies typically lay their eggs on the decaying organic material and also in open mucopurulent human sores like, nasal cavity, lacrimal fistula and ulceration with slough in conjunctiva. Within 24 hours these eggs hatch and produce larvae which then feed on human tissue. These larvae have eleven body segments, each with hooks which allow them to maintain their hold on the host tissue while moving about by peristaltic constriction. A pair of enlarged oral hooked on the anterior end anchors the larvae firmly while it feeds on eye secretions and bits of damaged tissue. Other species such as human botfly (*Dermatobia Hominis*), screwworm fly (*Phaenicia lucilia* and *Chrysomya bezziana*, *Rhinoestrus purpureus*), cattle botfly (*hypodermabovis*) can also cause ophthalmomyiasis<sup>[5,6]</sup>. Sheep and goats are the main hosts for myiasis which is caused by *oestrus ovis* and humans are infested accidentally. Human myiasis mostly occurs in rural areas, where man lives in close contact with small ruminants<sup>[7]</sup>. Symptoms such as severe eye irritation, redness, foreign body sensation, pain, lacrimation and swelling of lids are present<sup>[8]</sup>. Clinical features sometimes include conjunctival haemorrhage, corneal abrasions and iritis<sup>[9]</sup>. In extreme cases larvae may penetrate the mucosal sinus: frontal, maxillary and ethmoidal causing swelling, pain, frontal headache and may invade the ocular globe leading to retinal necrosis and blindness. Internal ophthalmomyiasis can produce vitreous haemorrhage, retinal detachment,

endophthalmitis, hypopigmented linear and subretinal tracts. Treatment strategy depends upon the type of ocular involvement and the level of damage. In cases of external ophthalmomyiasis, manual forceps removal of larvae is ideal<sup>[3,4]</sup>. Ophthalmic antibiotic ointment can be used to block its respiratory pore and hence aid in manual removal. Topical administration of corticosteroids for symptomatic relief of irritation due to protein in larvae and antibiotics to prevent bacterial contamination have been recommended<sup>[10]</sup>. In conclusion, though ophthalmomyiasis is rare, early diagnosis and management is of utmost importance and should be prompt and urgent for preserving normal vision.

February end is the prime time for hatching eggs of *Oestrus ovis* and probably we got 2 cases on consecutive days.

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