

Case Report

Ophthalmomyiasis Masquerading as Acute Conjunctivitis

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ABSTRACT

Ophthalmomyiasis is a rare condition where the human eye is infested by a fly larva, most commonly *Oestrus ovis*, which is also called as sheep bot fly. External infestation occurs when the gravid fly deposits the larva into the conjunctival sac and if left untreated it may occasionally penetrate the globe or orbit causing severe ocular damage. Prompt diagnosis is needed to avoid potential complications. Usually considered an occupational disease among farmers and shepherds, it can rarely affect other individuals as well. We report a case of a young, healthy female with no predisposing factors for larva infestation who presented to ophthalmology clinic with acute redness, itching and watering in right eye for 3 days. On careful examination, three larvae of *Oestrus ovis* were removed from the conjunctival sac. Patient was advised topical steroid and antibiotics and was relieved of symptoms on the next day.

Keywords: *Oestrus ovis*; Sheep bot fly; Ophthalmomyiasis; Conjunctivitis; Larva.

Keymessage: Ophthalmomyiasis is a relatively rare condition which can present as acute conjunctivitis. A careful examination can help in prompt diagnosis to avoid complications. It is common in farmer and shepherds but can occasionally affect other individuals as well.

INTRODUCTION

The infestation of living or dead tissues by fly larvae (maggots) is called myiasis. Ocular infestation by fly larvae or ophthalmomyiasis is relatively rare which constitutes less than 5% of cases.¹ It is typically seen in people living in close contact with sheep and goats, though it may affect other individuals as well. When it occurs in people without any association to animals, the condition may become a diagnostic dilemma and a careful examination is needed to locate the minute larva. Ophthalmomyiasis externa which is the infestation of ocular surface like palpebral or bulbar conjunctiva is a self-limiting condition but if left untreated, the larva can penetrate the globe or orbit causing ophthalmomyiasis interna, which can lead to severe ocular damage.² Therefore, a prompt diagnosis of ophthalmomyiasis is needed to avoid serious complications. We present a case of ophthalmomyiasis externa caused by larva of *Oestrus ovis*, commonly known as sheep bot fly, in a young urban female who presented to a multidisciplinary government hospital in New Delhi, India.

CASE REPORT

A 30-year-old lady presented to ophthalmology clinic with complaints of redness, itching and watering in her right eye for the last 3 days. It started while she was sitting in a park and noticed foreign body sensation in the eye. She washed the eye repeatedly and also tried over the counter medications for 2 days but with no improvement in symptoms and then finally visited the hospital for the same.

On examination, her visual acuity was 6/6 both eyes. In the right eye, there was conjunctival congestion which was more defined in the inferior fornix with mild swelling of the lids. On retraction of the lower lid, three shining white, motile larvae were seen which tended to run away from light into the deeper areas of fornix (Figure 1). After instilling a drop of topical anesthetic, with the help of blunt tipped forceps, three motile larvae were taken out which lost their motility on the external surface. On microscopic examination, they were confirmed to be first instar larvae of *Oestrus ovis* (Figure 2). Posterior segment examination of the eye was normal. It was done to rule out globe penetra-

tion by the larva. The patient was advised topical antibiotic and steroid and was symptomatically relieved on the next day.

Figure 1. Clinical photograph of eye of the patient showing first instar larva of *Oestrusovis* in the inferior fornix. Note the segmented body and darkly pigmented anterior end



Figure 2. Photomicrograph of the larva of *Oestrusovis* removed from the eye of the patient. Note the oral hooks connected to internal skeleton. (x100).



DISCUSSION

Ophthalmomyiasis can be caused due to deposition of larvae of various flies. The most common pathogen is sheep bot fly (*Oestrusovis*); however, house fly (*Musca domestica*), cattle botfly (*Hypoderma*) and latrine fly (*Fannia*) can also cause a similar condition.^{3,4}

The sheep bot flies start their life cycle as fertilized eggs which are retained by the gravid female inside its body until they hatch to form first instar larvae. These larvae are ejected with a tiny mucus drop into the nostrils of sheep or goat. The larvae then migrate up the nasal cavity to enter the nasal sinus where they grow into second stage larvae. It may take nine to ten months for these larvae to mature inside the sinus until they are sneezed out. The larvae then pupate in the soil, which

may take another three to four weeks to grow into adult flies. The adult flies which eventually develop from the pupae have a life span of four weeks.⁵

Ophthalmomyiasis by *Oestrusovis*, in human beings, was first described by James in 1947.⁶ Over the years, there have been reports of similar cases from all over the world including America, Africa, Gulf region and Europe.^{7,8} There have been few case reports from various parts of India as well.^{9,10} Goat and sheep are the main hosts for *Oestrusovis* larva and transmission to humans is accidental. It is the first instar larva which is deposited in the conjunctival sac by the gravid fly and causes conjunctivitis like illness.

Male gender, pediatric age group, eye infection, eroded conjunctiva, physical debility and alcohol abuse predispose to ophthalmomyiasis.¹¹ However, our case had none of these predisposing factors and had no history of close association with animals.

Usually the patient presents with foreign body sensation, redness pain, lacrimation and swelling of eyelids. Sometimes patients may also have rhinorrhea as an allergic reaction to the larva.¹² Washing of the eyes or irrigation of conjunctival sac may not be helpful in removal of the larva as the organism firmly grabs the conjunctiva with its oral hooks.

Ophthalmomyiasis is generally considered as an occupational disease among farmers and shepherds but it can also be seen in urban population. Careful evaluation can help in prompt diagnosis and reduce potential complications. Removal of the larva may spontaneously relieve the symptoms.

CONFLICTS OF INTEREST

None.

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