

Unilateral External Ocular Myiasis Caused by Sheep Botfly - A Case Report

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Abstract

Ophthalmomyiasis or ocular myiasis is the infestation of the eye by fly larvae most commonly *Oestrus ovis* (sheep nasal botfly). Ophthalmomyiasis has been reported in various parts of the world but not in the UAE. Here we present a clinical case seen in our hospital (RAK Hospital) in a European lady who went to visit the mountains of Ras Al Khaimah. She presented with severe irritation, watering and pain few hours after being aware of a fly striking the eye. The larvae were observed in the bulbar conjunctiva, and following their removal, the symptoms recovered.

Keywords: *Ophthalmomyiasis; Oestrus ovis; Ras Al Khaimah*

Introduction

Ophthalmomyiasis or ocular myiasis is the infestation of the eye with dipterous larvae. *Oestrus ovis* (sheep nasal botfly) is one of the most common causes of human Ophthalmomyiasis. The normal hosts for the larvae are sheep and goats. Occasionally, humans are the intermediate hosts, with the eye as the site of infestation. The clinical picture is that of a viral or allergic conjunctivitis with tearing, foreign body sensation and itching of the eye. This is the first reported case of external ophthalmomyiasis in the UAE.

Case Report

A 31 year old female patient presented to our eye department one evening with complaints of irritation, discomfort, watering and foreign body sensation in the left eye since the previous night. She gave a history of visiting the mountains of Ras al khaimah and was also aware of a fly striking the eye and darting off. On torch examination the left eye showed mild lid edema, the conjunctiva was congested and the cornea showed mild keratitis. The right eye was normal. Her visual acuity in both eyes was 6/6 and both fundi were within normal limits. Slit lamp examination revealed, a single moving larva on the upper bulbar conjunctiva. The eye was anaesthetized with Tetracaine 0.5% eye drops and the larva was removed by the forceps. The patient was put on topical antibiotic drops and sent home. The patient reported the next day morning with similar complaints of irritation and moving foreign body sensation. Slit lamp examination revealed two more larvae crawling from the upper bulbar conjunctiva. This was missed in the earlier examination because it was deeply buried in the conjunctiva. Once again the eye was anaesthetized and the larvae were removed by forceps, one of the larvae was sent to the pathology lab.

Microscopic examination revealed it to be the larvae of sheep bot fly (*Oestrus ovis*). They were mounted, examined and photographed under a microscope. The larvae were identified as the first instars of *Oestrus ovis* (Diptera: Oestridae) which is a larviparous dipteran. The two most characteristic features were their spindle shape and a pair of sharply curved mouth-hooks. There was a complete row of denticles (spinules) on the third segment and a coarsely interrupted row on the fourth and fifth segments with 22 to 25 terminal hooks arranged in the pattern of two scallops.

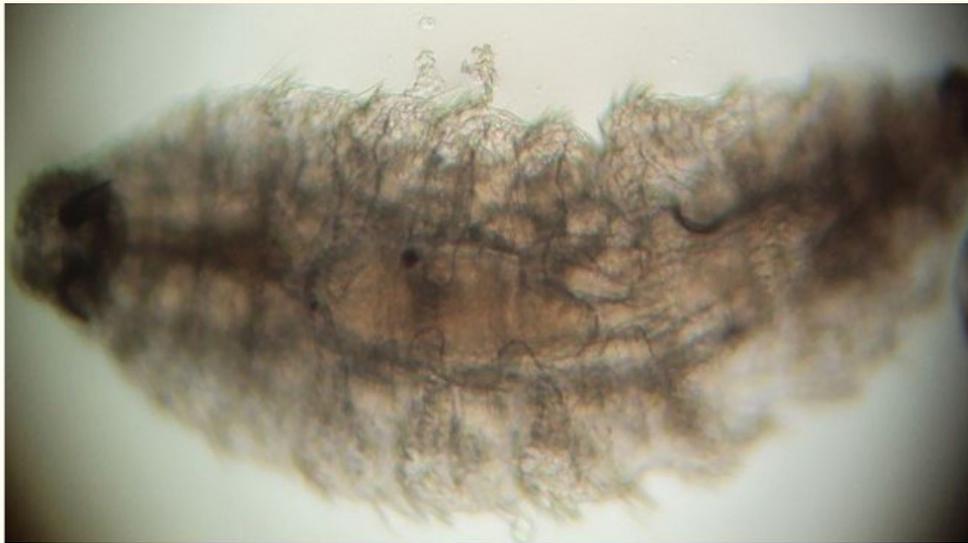


Figure: Microscopic photograph of larva of sheep Bot fly taken from the patient's eye.

Discussion

Ocular Myiasis is most commonly caused by the invasion of the eye by the larvae of Sheep nose bot fly (*Oestrus ovis*). There are two types of ophthalmomyiasis - External ophthalmomyiasis when the larvae attack the lids or conjunctiva and -Internal ophthalmomyiasis when they penetrate into the eyeball itself. External OM which is more common, can usually be easily treated; however, internal OM often results in severe complications including blindness due to retinal damage. OM is most commonly caused by larvae of the sheep nose bot fly (*Oestrus ovis*). Other species such as the human bot fly (*Dermatobia hominis*) may sometimes be involved in the causation.

External features and Life cycle - The sheep nose bot fly is a large, hairy, yellowish-brown fly which resembles a small honey bee. *Oestrus ovis* gives birth to live young (larvae) which have the capacity of infecting hosts immediately. The adult female fly usually deposits larvae around the nostrils of sheep and goats. Subsequently the larvae migrate into the sinuses where they mature by going through three progressively larger larval stages called instars. A few months later the fully mature third instar, pass out of the nostrils of the sheep and goats and pupate on the ground. The pupae mature 3 to 6 weeks later into adult flies, depending on the temperature. They have a life span of about a month.

Sometimes the sheep nose bot fly deposits larvae near the eyes of humans who live or work in close proximity to livestock. In humans the life cycle is slightly modified and the larvae generally do not mature past the first instar stage. Another interesting feature of *Oestrus ovis* is that it can deposit larvae while flying. The fly dashes near the eyes or nostrils and discharges a stream of larvae into the specified areas.

Geographic distribution of ocular myiasis - Human myiasis commonly occurs in the rural areas, where man lives in close contact with livestock. It is most common in the Africa and Central America. Scattered cases have been reported from Mediterranean area, like Italy, and also from Russia, India and the Middle East. Few cases occur in the United States mostly among military personnel who served in Iraq.

The most common presenting symptoms are similar to conjunctivitis causing pain, burning, itching, redness, and tearing in the affected eyes. Often the patients also complain of sensation of a moving foreign body in the eye. Many patients also do give a history of having had some insect flying around their face or striking them in the eye prior to the onset of symptoms. In some cases, the larvae may enter the mucosal sinus causing swelling, pain, and frontal headaches, or may even penetrate into the eye globe causing severe complications of retinal injury and subsequent blindness.

The larvae of the sheep nose bot fly are dirty white in color and measure about 1 mm to 2 mm long. They usually have 11-12 body segments. Each segment contains spines or hooks which permit them to latch onto the host tissue and move about by means of peristaltic contractions. The mouth contains a pair of big oral hooks which helps in anchoring the larva firmly while it feeds on broken tissue and secretions.

The treatment consists of administering anesthetic drops to immobilize the larvae and the eye, followed by mechanical removal of the larvae. Primary stage larvae can usually be carefully extracted from the eye with fine forceps. Topical antibiotics and/or antihistamine drops may also be used. Antibiotic ointments can be used to suffocate the larvae, thereby enabling its removal. Antibiotic ointments or drops can also help in preventing secondary bacterial infection. Topical steroids can be administered to reduce inflammation.

The patient should be advised to come for a follow-up examination in order to rule out complications or the presence of additional larvae [1-11].

Conclusion

Ocular Myiasis is essentially an occupational disease among people who work closely with animals. An awareness of the infestation and the symptoms produced by it will enable early diagnosis and prompt treatment. The use of safety goggles should be advocated which can help in prevention of the disease.

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