Unilateral acute conjunctivitis due to *Oestrus ovis* in a veterinary doctor

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Abstract

Myiasis is the infestation of tissues and organs of animals or man by fly larvae. We report a human case of external ophthalmomyiasis caused by the larvae of a sheep nasal botfly, *Oestrus ovis*, for the first time in a veterinary doctor. A 25-year-old veterinary doctor presented with severe symptoms of conjunctivitis. The larvae, 3 in number, were observed in the bulbar conjunctiva and the symptoms of the eye improved within a few hours of their removal. It is important for ophthalmologists to be aware of larval conjunctivitis as a significant possibility in the veterinary fraternity especially during the summer season.

Key words: *India, myiasis, Oestrus ovis, ophthalmomyiasis*

INTRODUCTION

The infection of tissues or organs of animals or man by larvae of a fly is called Myiasis. The most common sites are skin wounds followed by eyes, nose, nasal sinuses, throat, and urogenital tract.[1] The eye is involved in less than 5% of all cases of human myiasis.[2] Ophthalmomyiasis can be of two types: ophthalmomyiasis externa if the larvae are present on the conjunctiva, and ophthalmomyiasis interna when there is intraocular penetration of larvae.[3] Cases of ophthalmomyiasis externa have been reported from various parts of the world.[4,5] However, this condition is rare in India and there are only a few reported cases.[3,6,7] The present case therefore highlights the awareness among the ophthalmologists regarding larval conjunctivitis in the spring and summer seasons[8] and also looks for this cause in the veterinary fraternity.

CASE REPORT

A 25-year-old female veterinary doctor came to our outpatient department in April 2012 with a 2-day history of foreign body sensation, burning, and excessive watering from her left eye. She gave a history of something falling in her eye while she was working in her outpatient department. She was absolutely fine before that and had no significant ocular or medical history.

The visual acuity was 20/20 in both eyes. Eyelids of the affected right eye were absolutely normal. The conjunctiva was congested with profuse lacrimation. Extra-ocular movements were full and free in all directions of gaze. On slit lamp examination there was the presence of tiny translucent larvae, 1-2 mm in size with dark heads, crawling over the bulbar conjunctiva. The larvae were photosensitive and tended to move toward the fornix under slit lamp illumination. Cornea was not involved. Pupillary reaction was normal. After topical Lidocaine 4% drops about three larvae were removed with the help of cotton swab sticks and fine plane forceps. The organisms were placed in normal saline for identification. The anterior chamber was quiet. Direct and indirect ophthalmoscopy showed no evidence of intraocular organisms or inflammation. Examination of her left eye was normal. Topical moxifloxacin eye drops 0.5% for six times a day was prescribed. When the patient came for a follow-up 2 days later, she was completely relieved of her symptoms of foreign body sensation and excessive watering. Slit lamp examination of the anterior segment and fundus was normal. Her vision was 20/20 and she was asked to stop all medication. The larvae mounted on a microscopic slide were examined carefully and photographed under a microscope. They were segmented and had two large dark oral hooks, connected to a white cephalopharyngeal skeleton. The body was translucent [Figure 1].

DISCUSSION

There are three dipteran families, which can cause myiasis in livestock and humans. These families include Oestridae, Calliphoridae (blowflies), and Sarcophagidae (flesh flies).[9] *Oestrus ovis* (sheep nasal botfly) belongs to the class: Insecta, order: Diptera and family: Oestridae. The normal hosts of the larvae include sheep and goats. The sheep nose bot is a hairy, yellowish, bee-like fly. The adult female fly is active during summer and early spring. Eggs are retained in the body until they hatch. The gravid adult female fly swarms around the head of the animals and ejects the first-instar larvae, which have previously hatched from the eggs in the fly vagina, in a stream of milky fluid on to the nostrils of the host.[9] Direct contact between the fly and its host is not necessary for the infestation.[10] The *Oestrous ovis*, the common sheep bot fly, breeds in the nasal cavity and sinuses of sheep. The fly enters the nostrils and deposits its larvae. The larva crawls and reaches the brain cavities; they mature and fall on the ground and become adult.[11] Occasionally, man becomes the intermediate host, with the eye being the site of infestation.[10] *Oestrus ovis* larvae are unable to secrete proteolytic enzymes, because of lack of bite organisms.[10] The clinical features may be mistaken for periorbital cellulitis or acute conjunctivitis.[12] However, small conjunctival haemorrhages may be apparent at sites where the larva clings with its mouth claws.[10]

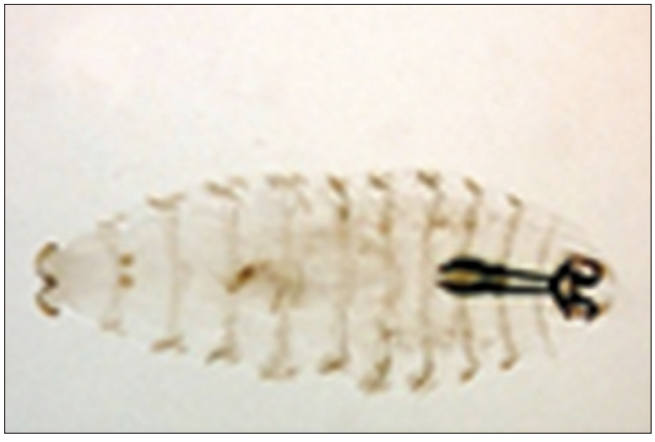

Figure 1: A spindle-shaped larvae of *Oestrus ovis* with a pair of sharply curved hooks

We could not immediately find specialists to help us preserving the species in a good way. We therefore identified the larva as *Oestrus ovis* based only on biomicroscopic appearance (translucent body, segmentation, large dark oral hooks connected to a white cephalopharyngeal skeleton) and extended study of the literature. The points strongly in favor of infestation with larvae of *Oestrus ovis* are the region of infestation, the season, clinical manifestation, and microscopic characteristics of the larvae. The present case also highlights the fact that only antibiotic drops are required to reduce the congestion and it is not mandatory to use local steroids as in other case reports from different parts of India.

If there is close contact between animals and man, and hygienic conditions are poor, then chances of human infestation are high. In man, the larvae cannot survive beyond 10 days and will die if is not removed.[9] In the human conjunctiva they can cause a great deal of irritation, lacrimation, pain, and inflammation, which should be differentiated from an allergic reaction or viral conjunctivitis.

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