

OPHTHALMOMYIASIS EXTERNA : A CASE REPORT

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ABSTRACT

Ophthalmomyiasis, fly larvae infestation of eye, is a rare condition that can have variable presentation depending on the type of fly, the ocular structures involved, and the level of penetration. A case of ophthalmomyiasis externa presented with foreign body sensation, itching and redness of eyes for 4 days is documented. Mechanical removal and good local treatment helped the patient. The larva isolated was that of Oestrus ovis (sheep nasal botfly). Ophthalmomyiasis externa is mainly caused by sheep botfly Oestrus ovis and it is more common in farming communities. Our patient was also a 35 years old male farmer and had history of contact with farm animals. This infestation is rare in India as very few cases are on records.

Key words : *Ophthalmomyiasis , Oestrus ovis, Ocular parasitic, Ocular infestation.*

Introduction

Myiasis is defined as the infestation of living animal tissue by fly larvae (Maggots). Ophthalmomyiasis^[1] or ocular myiasis refers specially to infestations that involve the eye and ocular adnexa. Less than 5% of human myiasis cases involve eye. There are 3 different forms of Ophthalmomyiasis based on the portion of the eye involved. 1-Ophthalmomyiasis externa- results from infestation of the conjunctiva by the larvae. If not recognized and managed promptly, it can lead to the fatal condition called Ophthalmomyiasis interna. 2-Ophthalmomyiasis interna – results when the larvae penetrates the ocular globe, and can be visualized in subretinal space and in the vitreous cavity^[1,2].

3-Orbital Ophthalmomyiasis- the least common of the three conditions, is due to invasion of the orbit. Sometimes this can lead to rapid destruction of globe^[3]. Case of Ophthalmomyiasis externa by sheep nasal botfly Oestrus ovis have been reported from various parts of world particularly in Mediterranean countries, Central America and South Africa^[4]. Oestrus

ovis, the nasal botfly is the most common cause of conjunctival ophthalmomyiasis. This botfly is a parasite in nasal and paranasal cavities of goats and sheep, thus named as sheep nasal botfly.

Case report

A 35 years old male farmer presented to outpatient department of Pravara Rural Hospital on 15th September 2008 with chief complaints of foreign body sensation, redness and excessive watering from both eyes since four days. Patient went to a local doctor to get the foreign body removed but he was told that there was no foreign body and so no treatment was given. However foreign body sensation, redness and watering did not improve over a period of four days so finally he came to eye OPD of Pravara Rural Hospital, Loni. Being a farmer he was in close contact with animals like sheep, goats and cows. There was no significant medical or surgical or family history. Ophthalmic examination revealed visual acuity 6/6 in both eyes. Conjunctiva was moderately congested with profuse lacrimation in both eyes. Pupils, extraocular movements and confrontation fields were normal. Lacrimal sac was clinically patent and digital ocular tension was normal in both eyes. Slit lamp evaluation revealed a very small, around 1 mm long, translucent organism with black head which was

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moving over the conjunctiva in superior temporal quadrant of conjunctiva in right eye(Fig.1).



Fig.1 Showing larva on bulbar conjunctiva.

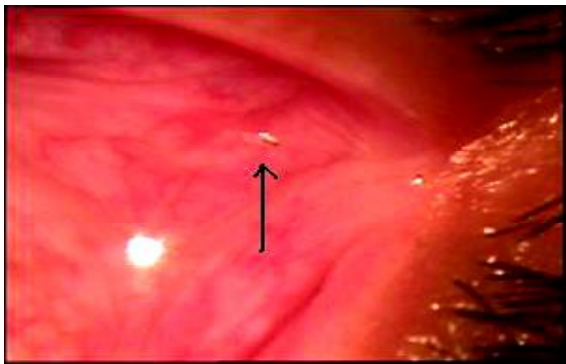


Fig.2 Showing larva in fornix.

Patient was told about the presence of possibility of larvae and advised detailed examination under microscope for which consent was taken. On examination a crawling larva was noticed in conjunctival sac about 5-6 mm away from limbus in upper temporal aspect of bulbar conjunctiva of right eye(Fig.1). This larva was moving freely over the bulbar and palpebral conjunctiva(Fig.2). The topical anaesthetic drops were avoided to record the movements of the larva. Larva was removed using a plain fine forceps and kept in saline and was sent to microbiology department for identification. Both eyes were examined in detail to rule out presence of any

other larva. The intraocular infestation was also ruled out in both eyes by direct and indirect ophthalmoscopy. Topical antibiotics in the form of eye drops and ointment were advised. A repeat examinations of anterior segment under microscope and fundus after 3 days and a week later were uneventful.

Microbiological Findings



Fig.3-Showing pair of sharp dark brown oral hooks.

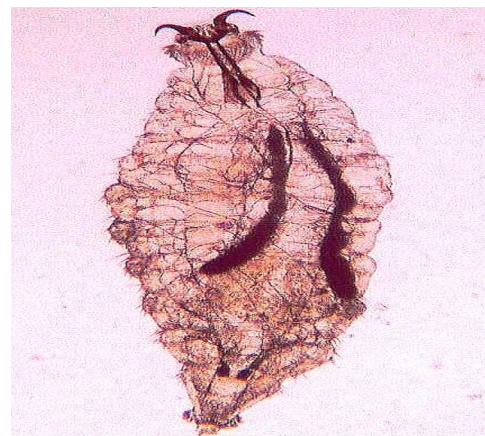


Fig.4-Showing eleven body segments with many brown hooks.

The organism on microscopic examination was identified as larva of *Oestrus ovis* (sheep nasal botfly), was characterised by a pair of sharp dark brown oral hooks connected to the large internal cephalopharyngeal skeleton and by tufts of numerous brown hooks on the anterior margins of each body segments.(Fig.3&4). Life cycle of *oestrus ovis*-Adult fly is a bee like and called

sheep botfly. This sprays the first instars immature larvae (sheep bot) in nostril of sheep/goat. These larvae get attached to mucous membrane of nose & penetrate sinuses. Here maturation of larvae occurs. These mature larvae fall from the nose on ground and pupate. After 3-6 weeks adult flies emerge from the pupae. These may live up to one month. This adult fly is about twelve mm. and blackish brown. Man is an accidental host. Female flies are capable of ejecting a jet of larvae while in close proximity to the eye^[4]. Thus fly can hit the eye or larvae can enter eye through the contacts of sheep.

Discussion

Ophthalmomyiasis is generally caused by sheep botflies and flesh flies^[2]. The most commonly reported organism in the literature is *Oestrus ovis*, a botfly highly prevalent in sheep herding and farming communities^[5]. These flies typically lay their eggs on the decaying organic material and also in open mucopurulent human sores like conjunctival sac. Within 24 hours these eggs hatch and produce larvae which then feed on human tissue. This larva has 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 hooks on the anterior end anchors the larva firmly while it feeds on eye secretion and bits of damaged tissue. Other species such as the human botfly (*Dermatobia hominis*), screw worm fly (*Phaenicia lucilia* & *Chrysomya bezziana*), *Rhinoestrus purpureus*, cattle botfly (*Hypodermabovis*) can also cause ophthalmomyiasis^[3,6]. Symptoms of ophthalmomyiasis characterised by symptoms similar to conjunctivitis like pain, burning, itching, redness, FB sensation and excessive watering. Many patients report having had an insect buzzing around their face or striking them in the eye immediately prior to the onset of symptoms. Clinical features sometimes include conjunctival hemorrhage, corneal abrasion, and iritis^[1,2]. In extreme cases the larvae may penetrate the mucosal sinus causing swelling, pain, frontal headache and may invade the ocular globe leading to retinal damage and blindness. Internal ophthalmomyiasis can produce vitreous hemorrhage, retinal detachment, endophthalmitis, hypo pigmented 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 the larvae is ideal^[2,6]. Anesthetic drops may be useful to immobilize the larvae during removal.

Ophthalmic Antibiotic ointment can be used to block the larval respiratory pore, thereby suffocating the organism to facilitate manual removal. Antibiotic ointment and drops as well as topical corticosteroids can prevent secondary bacterial infection and reduce inflammation respectively. Treatment strategies in cases of internal ophthalmomyiasis are case specific ranging from iridectomy, vitrectomy, retinotomy and laser photocoagulation^[6]. Follow-up examination is advisable to rule out complications or the existence of additional larvae. In conclusion, though ophthalmomyiasis externa is rare, early diagnosis and management is important in preventing complications.

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