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External ophthalmomyiasis by *Oestrus ovis*: A case report from Davangere

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Abstract:

External ophthalmomyiasis is an infestation of the eye with larvae of *Dermatobia hominis* or *Oestrus ovis* (sheep bot fly). We describe a case of ophthalmomyiasis in a 38-year-old male, who presented with ocular foreign body sensation, redness, pain, and watering of the eye. The causative larvae were removed and sent to the laboratory for identification. By studying morphological features, it was identified as the first instar larvae of *O. ovis*. The patient was put on topical and oral antibiotics but was lost to follow-up. This is probably the first report from this part of Karnataka.

Key words:

Conjunctivitis, *Oestrus ovis*, ophthalmomyiasis

Introduction

Myiasis is the invasion or infestation of dipterian fly larvae in humans or animals.^[1] It is known to occur at various anatomical sites including skin, eye, nose, paranasal sinuses, throat, intestine, and urogenital tract.^[2-4] Ophthalmomyiasis, which is the myiasis of the eye, can occur in three forms: External, internal, and orbital.^[5] Literature search reveals that only around ten case reports have been published across India.

Case Report

Here, we report a case of ophthalmomyiasis externa in a 38-year-old male. He presented to the outpatient department of ophthalmology with 1-day history of foreign body sensation, pain, redness, and excessive watering of the left eye. He recounted "dust" falling into his eyes while riding the previous day. He did not have any significant ocular history. Although a village dweller, he never came in contact with sheep or goats.

On examination, the visual acuity of the right eye was 6/12 with pinhole improving to 6/9 and visual acuity of the left eye was 6/12 and was not improving with pinhole. Eyelids of both eyes were normal. Conjunctiva was congested with profuse lacrimation. Extraocular movements were full. Slit lamp examination revealed multiple translucent larvae over the conjunctiva; macroscopic evaluation noted that they were 1–2 mm in length. Examination of fundus did not reveal any intraocular larva. The larvae were removed using cotton swabs under local anesthetic (proparacaine eye drops) and were mounted on a glass slide and sent to microbiology laboratory for identification. On microscopic examination, the specimens were identified as the first-stage larvae of *Oestrus ovis* (the sheep nasal botfly). It was characterized by the spindle shape, segmented body with intersegmental spine bands along with a pair of dark-brown, sharp, oral hooks at the anterior [Figure 1]. In all, four larvae were carefully removed. The patient was put on topical moxifloxacin and oral ciprofloxacin. He was lost to follow-up.

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Figure 1: Microscopic appearance of the larvae

Discussion

External ophthalmomyiasis is rare in humans. Besides *O. ovis*, other lesser common fly species involved in ophthalmomyiasis include *Calliphora*, *Lucilla*, *Sarcophaga*, *Gasterophilus*, *Hypoderma*, *Musca*, *Callitroga*, *Cuterebra*, *Dermatobia*, *Chrysomya*, *Wohlfahrtia*, *Oedemagena*, and *Cochliomyia*.^[6] Animals such as cattle, sheep, horse, deer, and rodents are the natural hosts of the fly *O. ovis* and human is an accidental host. The gravid female flies dart near the eyes or nostrils of the animal host and eject a stream of first-instar larvae, which mature in the mucus membrane. Subsequently, they are sneezed out and pupate in soil.^[7] In human hosts, they hold on to mucus membrane through their pointed hooks but do not penetrate any deeper and remain confined to the conjunctiva. However, readers must also be aware of orbital myiasis due to *O. ovis* that was reported from India.^[8] In general, *O. ovis* larvae do not survive beyond 10 days in human host and die off.

The symptoms of external ophthalmomyiasis are characterized by pain, burning, itching, redness, and tearing in the affected eyes along with the sensation of a moving body. It may not be possible for the patients to recollect insects buzzing around their faces. The clinical symptoms depend on the extent of tissue invasion, which may vary from conjunctivitis to hemorrhage or ulceration. Ophthalmomyiasis should be considered in cases of unilateral conjunctivitis. Since *Hypoderma bovis*, *Dermatobia hominis*, and rarely *O. ovis* can penetrate into the eye, prompt removal and identification is warranted.^[9] Saline irrigation of the conjunctival sac is unhelpful in getting rid of the larvae as they hold on to the tissue with their hooks. The larvae may be collected using a cotton swab or forceps under local anesthesia, taking care not

to induce any laceration. Treatment revolves around physical removal of larvae and application of topical antibiotics and steroids. A follow-up visit may be useful to detect if any larva has migrated internally.

Similar cases have been reported from the neighboring areas such as Hubli, Bengaluru, and Mangalore.^[8,10,11] The electronic literature search suggests this is probably the first report of external ophthalmomyiasis from Davangere.

Conclusion

External ophthalmomyiasis continues to be rarely reported from Karnataka and this report would alert the ophthalmologists of the area to suspect ocular myiasis, especially in patients presenting with unilateral conjunctivitis and a sensation of moving body.

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Conflicts of interest

There are no conflicts of interest.

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