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Case Report

Ophthalmomyiasis: A rare case report

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ABSTRACT

Ophthalmomyiasis is infestation of eye and ocular adnexa by larva of flies. Most common causative agent is *Oestrus ovis*. A 10 year male child of a farmer presented to ophthalmology OPD with acute onset of redness of eye since 2 days. Ophthalmological examination revealed conjunctival congestion and lacrimation. Examination of bulbar conjunctiva showed small translucent organisms with dark head seen to crawl over bulbar conjunctiva. Slit lamp examination and internal ophthalmoscopy reports were normal. The organisms were removed with the help of fine forceps after applying 4% of lignocaine topically. Following fixation with formalin, a DPX mount was made and the organism was identified as *Oestrus Ovis*. Local antibiotics were prescribed to the patient for a week and the patient was cured.

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1. Introduction

Myiasis is infestation of human and animals with larva (maggots) of certain flies.¹ Skin is the most common organ of infestation, but maggots have been reported to have been removed from eyes, ears, nose, intestine and urogenital tract.² Ophthalmomyiasis was first reported by Keyt in the year 1910.¹ In India it was first described by Elliot as quoted by Subramanyam et al. Very few cases have been documented in Odisha. We here in report a case of ophthalmomyiasis reported in southern Odisha (Berhampur) in a 10yr old child.

2. Case History

A 10 year old male child of a farmer presented to Ophthalmology OPD with acute onset of redness of right eye associated with profuse watery discharge, irritation

and foreign body sensation and photophobia. There was no history of trauma to the right eye nor any medical history of any allergic conditions that was elicited. There was no history of sheep rearing. Ophthalmological examination revealed conjunctival erythema, chemosis and haemorrhage. Examination of bulbar conjunctiva showed multiple small translucent organisms with dark head were found to crawl over the bulbar conjunctiva. It avoided the light beam in slit lamp examination. The ocular position was normal and movements were full. The cornea, anterior chamber, nostrils and ears were normal. Internal ophthalmoscopy was normal without any inflammation. Management started with profuse saline irrigation of right eye. Lachrymal swab was send to our lab for cytological study. After applying 4% lignocaine to paralyse them 6 flies were removed in total from the bulbar conjunctiva. They were fixed with formalin, dehydrated with alcohol, cleared with xylene to make a DPX mount. Microscopy revealed larvae ranging from 0.5 to 1.5 mm size with a spindle shaped segmented

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cephalopharyngeal skeleton, one pair of oral hooks and tuft of brown hooks arising from each body segment. Laryngeal swab cytology revealed few benign mature squamous cells and sparse inflammatory cells. Topical antibiotics and antihistaminics were advocated and follow up was done. He was relieved of his symptoms. Based on clinical findings and microscopic identification of sheep botfly larva (*Oestus ovis*) a diagnosis of ophthalmomyiasis externa was rendered.

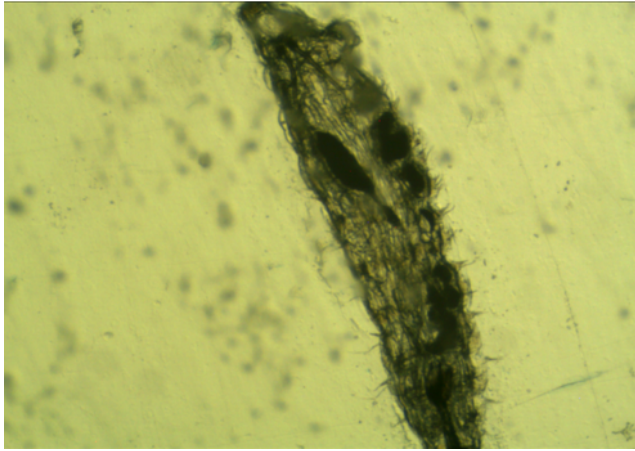


Fig. 1: Whole body Mount of the larva.

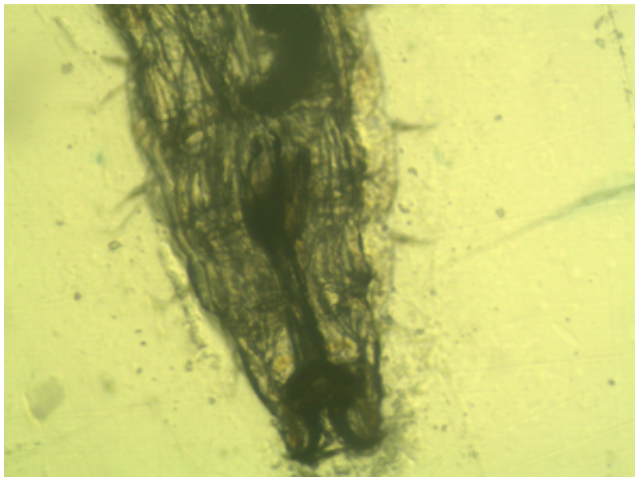


Fig. 2: Caudal segment larvae.

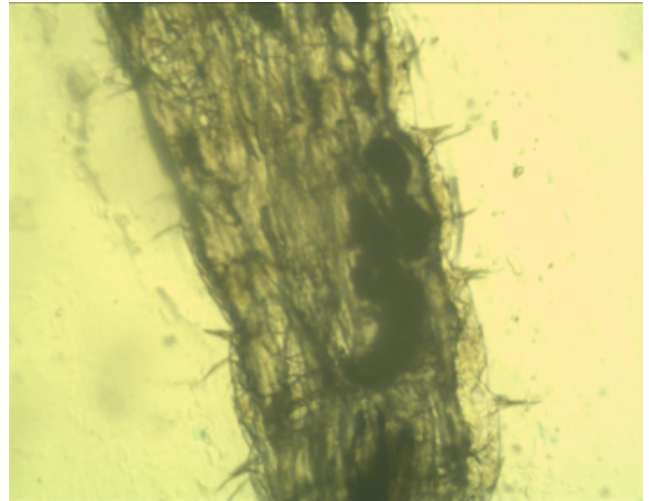


Fig. 3: Body segment with tuft of hair.

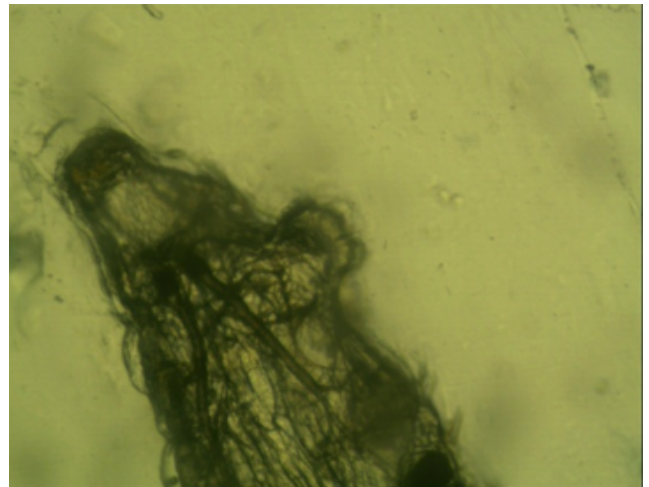


Fig. 4: Cephalic segment with a pair of oral hooklets.

3. Discussion

Myiasis is an infestation of human by dipterous fly larva.¹ Ophthalmomyiasis accounts for less than 5% of total myiasis cases^{3,4}. Most common myiatic flies are botfly, blowfly and screwfly. Ocular myiasis is generally caused by 3 species- Oestridae, calliphoridae and sarcophagidae. It is classified accordingly to part of host involved as dermal,

subdermal, nasopharyngeal, ocular, auricular, intestinal and urogenital.^{2,4,5} Invasion through skin is the most common route.⁴

The sheep botfly larva is an obligate parasite of sheep and cattle. Man becomes an accidental host when the fly discharges a stream of larva near the conjunctiva,^{4,5} that is similar in our case. Larva cannot survive in human eye for more than 10 days, hence the condition is self limiting.⁶ Depending on the severity and site of infestation myiasis can be categorised into externa, interna and orbital involving conjunctiva, globe and orbit respectively.⁴ External ocular Myiasis refers to the superficial infestation of the ocular tissues including conjunctiva. Most common clinical symptoms includes redness of eye, excessive lacrimation, photobia, itching and foreign body sensation. Conjunctival myiasis if neglected leads to destructive myiasis with penetration of larvae into sclera and subretinal space

resulting in iridocyclitis, endophthalmitis (Ophthalmomyiasis interna), invasion of orbit sometimes even leading to blindness.^{3,6} Ophthalmomyiasis normally occurs in the spring and summer seasons of the year. Our case was also detected this year March 2022. Khurana et al stated that ulcerated, diseased and immunocompromised hosts are more prone to the disease.³ Other Predisposing factors include diabetes mellitus, leprosy, open wounds and psychiatric illness.

Myiasis is often underdiagnosed due to its rare occurrence and similarity of clinical presentation as that of allergic and viral conjunctivitis⁵ which is one the closest differential of red eye. Larvae may be at times missed during slit lamp examination, hence double eversion of eyelid is essential to locate them in fornices.³ Larva is also not found in lachrymal secretions as it anchors with conjunctiva by means of body hooks. Sometimes profuse irrigation with normal saline may fail to dislodge the larvae.⁴ The key diagnostic feature thus rests on manual removal of larva and positive identification of larva by microscopic examination. Care must be taken to prevent laceration of larvae as left out portion may evoke an inflammatory response or secondary bacterial infection.³ Topical application of antibiotics needs to be given. Anti parasitic drugs like ivermectin seems promising in the treatment aspect and may be used in the dosage of 200µg/kg. Besides manual removal and surgical debridement other treatment options described in literatures includes the use of turpentine oil, liquid paraffin and betadine for removal of maggots.⁷ Follow up examination is prudent to ensure total clearance of the larvae. Our patient is asymptomatic as of now and is on follow up since past two months.

4. Conclusion

We report this case to draw attention that larval conjunctivitis may be a cause of red eye in spring and summer season and should be included in differential diagnosis of allergic conjunctivitis. Practise of improved sanitation, hand hygiene preventive measure may be emphasised for people involved in sheep rearing as suggested by Seema Bose.⁶ An early prompt diagnosis by taking proper history, examination and immediate management thus reduces the duration of discomfort,

morbidity and potential complications like endophthalmitis and orbital Ophthalmomyiasis.

5. Conflict of Interest

The authors declare no relevant conflicts of interest.

6. Source of Funding

None.

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