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Research Paper

Human Ophthalmomyiasis Externa Caused By The Sheep Botfly Oestrus Ovis: A Case Report From Visakhapatnam

Medical Science

KEYWORDS : Oestrus ovis, larvae, conjunctiva, Ophthalmomyasis

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ABSTRACT

A 32 year old male patient presented with complaints of redness, swelling of the eyelids, watering, and irritation in the right eye with a history of spillage of dust in the eye while plucking the flowers from a tree. On examination with slit lamp there is conjunctival congestion with chemosis. Cornea is clear, anterior chamber is normal, Pupil is normal in size and briskly reacting to light. Under high power magnification, larvae were found crawling on the globe. Under topical anaesthesia (xylocaine4%) larvae were removed with hoskin's forceps from the region of bulbar conjunctiva and inferior fornix. A total of 15 larvae were removed and sent to Microbiology Department . The larvae sensation, ophthalmomyasis were identified as Oestrus ovis. Though ophthalmomyasis is uncommon, any case presenting with conjunctivitis with foreign body sensation should be thought off as one of the differential diagnosis.

INTRODUCTION:

German entomologist Fritz Zumpt describes myiasis as "the infestation of live human and vertebrate animals with dipterous larvae, which at least for a period, feed on the host's dead or living tissue, liquid body substances can be dermal, subdermal, cutaneous, nasopharyngeal , ophthalmic or ocular, auricular, gastric, rectal, or intestinal/enteric for the appropriate part of the digestive and urogenital systems. Ophthalmomyiasis externa in humans have been reported to be caused by many types of Dipterous flies, the most common being the sheep nasal botfly, *Oestrus ovis.* Cases of Ophthalmomyiasis externa by sheep botfly have been documented from different parts of the world. [1,2,3,4] We report a human case of external ophthalmomyiasis caused by the larva of a sheep botfly Oestrus ovis for the first time from Visakhapatnam of Andhra Pradesh, India without any association directly with sheep. The fly might be on the tree where the patient plucked the flowers might have been hit and dropped the larvae in the eye and he might have thought it as dust. So, any case presenting with conjunctivitis with foreign body sensation, ophthalmomyasis should be thought off as one of the differential diagnosis. There were 2000 sps. described, but sheep nasal botfly, *Oestrus ovis* only causes Ophthalmomyiasis externa in humans.[5] But *Dermatobia hominis*, the **human bot fly,** is a serious pest of livestock in tropical and subtropical regions of **Central and South** America (from the Mexican Gulf Coast down to tropical Argentina, but not in Chile). Not the adult flies, but the **maggots** are parasitic and cause so-called cutaneous furuncular **myiasis.** It is particularly harmful for **cattle**, but can infect also **sheep, goats, horses, dogs, cats,** other wild mammals and also **humans.[6]**

CASE REPORT:

A 32 year old male patient presented in our out patient department with the complaint of redness, foreign body sensation, lacrimation for the past 2hours with a history of accidental spillage of dust into his right eye while he was plucking the flowers from a tree which might be the hit of the gravid female fly and ejected the first-instar larvae which he might be thought as dust. On examination with slit lamp there is conjunctival congestion with chemosis. Cornea was clear, anterior chamber was normal, Pupil was normal in size and briskly reacting to light. Under high power magnification larvae were found crawling on the globe. Under topical anaesthesia (xylocaine4%) larvae were removed with hoskin's forceps from the region of bulbar conjunctiva and inferior fornix. Upper lid was double everted and 5 more larvae were removed. A total of 15 larvae were removed and sent to microbiology department. for further identification and diagnosis. The larvae were mounted on a microscopic slide and examined under a microscope at 100x and 400 × magnification. They were identified as the first instar larvae of *O. ovis.* As they present a pair of sharp, dark brown oral hooks connected to the internal cephalo pharyngeal skeleton and multiple spiny projections along with a spindle shaped skeleton (Figure 1&2). The posterior spiracle consists of two lobes with approximately 9–10 chitin-like spines on each lobe. (Figure 3). Vision-Right Eye -20/25, Left Eye -20/20, Fundus-Both Eyes - Media clear, optic disc-size (Normal), shape (Normal), contour (Normal), color (Normal), Margins distinct, Cup-Disc Ratio -0.3, Foveal reflex (Normal), Blood vessels (Normal), B-scan revealed normal vitreous,&normal retino- choroidal complex. Patient was started on antibiotic-steroid(Gatifloxacin -dexamethasone) drops 4 times/day and reviewed after 3days. As ocular symptoms persisted, patient was started ivermectin 12mg as a single dose and the patient had remarkable relief.

DISCUSSION:

Oestrus ovis is a member of the Oestridae family which is a large family of obligate parasites of animals in their larval stage causing myiasis. The sheep botfly *O. ovis* was a typical parasite of small ruminants at larval stages. The natural cycle begins in summer, when the gravid female fly ejects first-instar larvae around their hosts' nostrils directly or by dropping the fertilized eggs during flight, from a height of 0.5 m. The larvae migrate to the paranasal sinuses, where they mature by feeding on mucous detritus. Once their development has finished, the maggots return to the nasal cavity, from where they were evacuated and fall to the ground, transforming into pupae.[7] Humans were accidental hosts. However, the tiny larvae do not develop any further in human eye beyond the first larval instar.[7,8]

A case series from India, reported that all the patients were farmers living in rural areas and worked in close contact with sheep and goats.[9] Males are mostly affected by this parasite. Eleven cases from Tunisia were reported in males.[10] In India, eight out of ten were male.[9] Like the present case, classic history includes a fly colliding with the eye, followed immediately by pain, burning, lacrimation, foreign body sensation and subsequent development of oedema.[11] Ophthalmomyasis externa caused by Oestrus ovis normally cause conjunctivitis and sometimes corneal abrasion due to its crawling movements.Though prognosis is good, sight threatening complications with retinal detachment and panuveitis have been reported.[12] These may be

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avoided through prompt diagnosis and early treatment, which was possible only if proper slit lamp examination was performed. It is also recommended that to control human infestations, there is an urgent need of evaluation of distribution and epidemiology of this parasitic infestation . The untreated larvae normally die with in 10 days and form nodules in conjunctiva. Sometimes it may mimic a chalazion

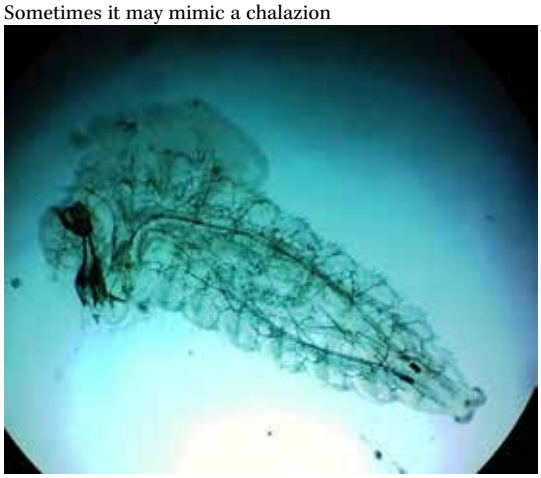

Fig.1 Larva of Oestrus ovis (100x)

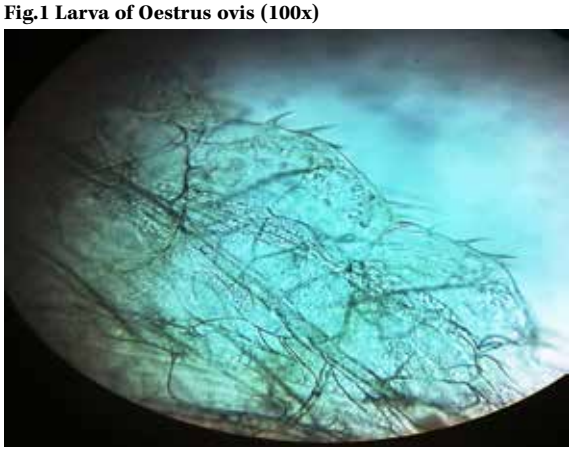

Fig.2 Larva of Oestrus ovis with surface spines (400x)

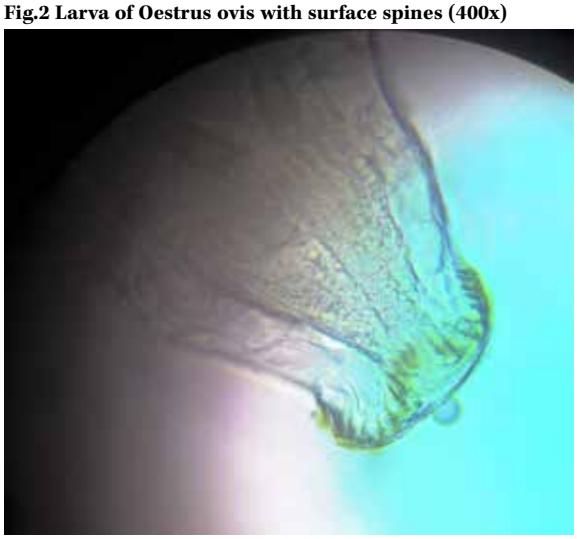

Fig.3. Posterior end of Oestrus ovis with chitin-like spines (400x)

REFERENCES:

1. Stevens D, McCartney A C, Howes R. Oestrus ovis ophthalmomyiasis acquired in the UK: case report and scanning electron microscopic study. Br J Ophthalmol 1991; 75(11): 702–703. [PUBMED]
2. Grammer J, Erb C, Kamin G, Wild M, Riedinger C, Kosmidis P, *et al.* Ophthalmomyiasis externa due to the sheep botfly *Oestrus ovis* (Diptera: Oestridae) in southwest Germany. Ger J Ophthalmol 1995;4:188-95. [PUBMED]
3. Harvey JT. Sheep botfly: ophthalmomyiasis externa. *Canadian Journal of Ophthalmology* 1986;21(3):92–95. [PubMed]
4. Chandrasekhar Gujjula, Sudha Regalla, Praneeth Putti, Mahaboob V Shaik. External ophthalmomyiasis caused by sheep botfly *Oestrus ovis* Larva in South of Andhra Pradesh. Sudanese j. of ophthalmology 2015; 7(1):13-15.
5. *Available at:http://eol.org/pages/728418/hierarchy_entries/51949245/overview*
6. Available at: http://parasitipedia.net/index.php?option=com_content&view=article&id=2574&Itemid=2834
7. G Tabouret, P Jacquiet, P Scholl, P Dorchies. *Oestrus ovis* in sheep: relative third-instar populations, risks of infection and parasitic control. Vet Res 2001; 32 (6) : 525–531.
8. Naima Fasih, Kanza Noor Qaiser, Syeda Aisha Bokhari, Bushra Jamil. Human ophthalmomyiasis externa caused by the sheep botfly*Oestrus ovis*: a case report from Karachi, Pakistan. Asian Pacific Journal of Tropical Biomedicine (2014); 4(10): 835-37. Available at: http://www.sciencedirect.com/science/article/pii/S2221169115300265.
9. Sucilathangam G, Meenakshisundaram A, Hariramasubramanian S, Anandhi D, Palaniappan N, Anna T. External ophthalmomyiasis which was caused by sheep botfly (*Oestrus ovis*) larva: a report of 10 cases.J Clin Diagn Res 2013; 7 (3) :539–542.
10. Anane S, Hssine LB. Conjonctival human myiasis by *Oestrus ovis* in southern Tunisia. Bull Soc Pathol Exot 2010;103 (5) : 299–304.
11. Akdemir MO, Ozen S .External ophthalmomyiasis caused by *Oestru ovis* misdiagnosed as bacterial conjunctivitis. Trop Doct 2013; 43 (3) : 120–123.
12. Khoumiri R, Gaboune L, Sayouti A, Benfdil N, Ouaggag B, Jellab B, *et al.* Ophthalmomyiasis interna: two case studies. J Fr Ophtalmol 2008; 31 (3) : 299–302.