Case report

Thelaziasis: an emerging ocular parasite in Northeast of India

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Introduction

Thelazia callipaeda is a parasitic nematode and the most common cause of “thelaziasis” (oriental eye worm infestation) in humans, dogs and cats. It was first discovered in the eyes of a dog in China in 1910. Infection in man is considered zoonosis. Transmission to humans occurs via the face fly (Musca autumnalis) in T. callipaeda and Fannia canalicularis in T. californiensis. The eye worm commonly parasitizes the tear ducts and conjunctival sacs of the host although intraocular infestations have been reported. Here, we report a case of thelaziasis in a 36-year-old male, from Majuli, Assam. He had a complaint of ‘something’ inside the left eye since one month. Method: The patient was admitted in the Inpatient Department of Ophthalmology and after thorough observation a mild congestion was noticed in the bulbar conjunctiva of left eye. After two days of exploration a small whitish appearing point was seen in deep upper conjunctival cul-de-sac of left eye which was grasped with a forcep and pulled outwards. On further exploration another worm was noticed inside left upper lid in the sub conjunctival space. Results: In total, three worms were received in the Department of Microbiology which after thorough observation were Thelazia callipaeda. Conclusion: This study highlights the importance of “thelaziasis” and it required further research to minimize the morbidity and sequelae caused by the worm by its presence in the human eye.

Keywords:
Thelazia callipaeda
Northeast India
Eye worm
Cul-de-sac

Aims: Thelazia spp. is a parasitic nematode and the most common cause of “thelaziasis” (oriental eye worm infestation) in humans, dogs and cats. It was first discovered in the eyes of a dog in China in 1910. Infection in man is considered zoonosis. Transmission to humans occurs via the face fly (Musca autumnalis) in T. callipaeda and Fannia canalicularis in T. californiensis. The eye worm commonly parasitizes the tear ducts and conjunctival sacs of the host although intraocular infestations have been reported. Here, we report a case of thelaziasis in a 36-year-old male, from Majuli, Assam. He had a complaint of ‘something’ inside the left eye since one month. Method: The patient was admitted in the Inpatient Department of Ophthalmology and after thorough observation a mild congestion was noticed in the bulbar conjunctiva of left eye. After two days of exploration a small whitish appearing point was seen in deep upper conjunctival cul-de-sac of left eye which was grasped with a forcep and pulled outwards. On further exploration another worm was noticed inside left upper lid in the sub conjunctival space. Results: In total, three worms were received in the Department of Microbiology which after thorough observation were Thelazia callipaeda. Conclusion: This study highlights the importance of “thelaziasis” and it required further research to minimize the morbidity and sequelae caused by the worm by its presence in the human eye.

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Review of literature indicate that of the reports [3,7,8,9,10,11,13] available from India on human thelaziasis, three are from the Northeast of India [8,9,11,13]. This is the fourth report from the
Northeast in a patient hailing from the plains of a riverine island clearly indicating an apparently increasing trend of the zoonosis in this part of the tropic irrespective of being limited only to hilly and foothill terrains [12].

Case Report:

A 36-year-old male from Majuli, Asia's largest riverine island in Jorhat, Assam attended the Ophthalmology Out Patient Department of a tertiary care hospital with complaint of 'something' inside the left eye since last one month. He also brought a specimen of a foreign body he claimed to have come out of the eye. The patient was apparently healthy, of moderate hygiene and an agriculturist by occupation. He gave a history of some insect entering the eyes while cycling back home from fields in the evening. He also had pet dog and cat at home.

On examination, the visual acuity of the right eye and left eye were 6/6 and 6/9 respectively. Pin hole revealed 6/6 in both the eyes. Near vision was N8. Lids, cornea, anterior chamber, iris, pupils and lens were all normal. Mild congestion was noticed in the bulbar conjunctiva of left eye. Dilated fundoscopic examination revealed a normal retina with normal appearing optic disc, foveal reflex, macula. Peripheral retina also appeared normal. There were no rashes or swelling in the skin.

Haemogram, other parameters, diurnal and nocturnal peripheral blood films were within normal limits. Stool examination revealed no ova. C reactive protein was elevated, ultra sonogram of the left eye revealed a moving structure that could be captured with great difficulty. CT scan (contrast) orbit and brain were within normal limits. The patient was admitted for observation. In subsequent days he complained of 'something' wriggling in his left eye but even after thorough examination several times in the day nothing could be revealed. After two days exploration was done under local anaesthesia. The right eye revealed no abnormalities. A small whitish appearing point was seen in deep upper conjunctival cul-de-sac of left eye which was grasped with a forceps and pulled outwards. A 10 mm size worm was extracted out. At first it was stationary perhaps due to the effect of anaesthetic but slowly it became active. On further exploration after making the lids intermittently avascular by putting chalazion clamps to improve contrast another worm was noticed inside left upper lid in the subconjunctival space. A cataract surgical knife was used to slightly dissect the area where the worm was noticed and forceps was used to grasp and take it out. Thereafter, lacrimal syringing with anaesthetic was done but to no avail. All the worms were sent to the Department of Microbiology for identification. Meanwhile, the patient was put on Albendazole 400 mg and Prednisolone 30 mg to counteract any hypersensitivity reactions. Treatment continued for 7 days. He was discharged after four days when there were no more complaints of foreign body sensation. The patient was prescribed reading glasses to correct his near vision of Presbyopia.

Identification:

All the three worms received were intact, slender, thread-like and creamy white. Two of these were 20 mm and the third was 10 mm in length (Figure 1). The maximum breadth was up to 0.25 mm. The entire bodies of the worms were covered by dense transverse cuticular striation. The smaller worm had a tapered anterior end with conspicuous, trapezoid buccal capsule (Figure 2) with no lips or teeth like structures and ventrally curved posterior end (Figure 3a). The spiral coiling of the posterior end limited the observation of the preanal and post anal papillae. In the female worms the vulva was anterior to the esophageo-intestinal junction (Figure 4) and numerous encysted larva were seen in the uterus (Figure 5). The posterior end was rounded (Figure 3b). We tried to irrigate the conjunctiva with 0.85% sterile normal saline to look for eggs and larva in the conjunctival fluid for three consecutive days but to no avail. Based on the site of recovery, gross appearance and microscopical findings, the worms were identified to be Thelazia callipaeda.

Discussion:

Reports on human thelaziasis are available from several Southeast Asian countries, including India. Literature review from India suggests the first report to be from Salem district in 1948. Two more cases were reported from the North eastern state of Manipur in 1993. Subsequently, Mukherjee et al in 1978 described an intraocular infestation, Mahanta et. al in 1996 from Assam, Sharma et. al in 2006 from Himachal Pradesh and Nath et. al in 2008 and Handique et al in 2014 again from Assam came across few cases over a span of three decades. The present report is supposed to be the eight in the country and fourth from the northeast clearly indicating emergence of the parasite in this region or under reporting from elsewhere. This report also intends to highlight that geographical topography of mountains and foothills may not just favour the occurrence of thelaziasis as speculated **. The patient in this report hailed from the riverine island and had no history of visit to any mountainous region. Therefore, to restrict or to overlook the epidemiology of human thelaziasis in terms of terrains would be short sightedness from strategic preventon and public health point of view.

Conclusion:

The authors are in view that a thorough investigation of the carnivores especially pet dogs and cats which are in close contact with humans and the vectors is a must in the region that shows increasing prevalence of this parasite. Amalgamation of medical microbiologists, veterinarians and entomologists could be a welcome gesture in the venture to minimize the morbidity conditions and sequelae caused by the worm by its presence in the human eye.

References