

Ocular Infestation of *Thelazia callipaeda* presenting As Eyelid Dermatitis

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Abstract: Ocular parasitosis can occur by various helminths. It is more encountered in tropical regions with poor sanitary conditions. Thelaziosis is a zoonotic disease caused by a nematode popularly known as eye worm. We describe a case of infestation of conjunctival sac by *Thelaziacallipaeda* in a 48 year female presenting as eyelid dermatitis.

Keywords: *Thelazia*, ocular, parasite

INTRODUCTION

Thelazia are nematodes which can infest human and animals' ocular apparatus and hence are popularly known as eye worm. They usually occur on anterior chamber but have been reported occasionally in posterior part of eye existing as ectoparasite and endoparasite respectively [1]. It is a cosmopolitan parasite of domestic, wild animals and occasionally humans. There are not more than 300 human cases reported till date [2]. Poor sanitary conditions favour transmission from animals to humans.

CASE REPORT

A-48 year female, farmer by profession and a resident of Shimla district in Himachal Pradesh, India presented in dermatology department in the month of May with itching and redness below right eye. On examination dermatitic lesions were seen over right lower eyelid along with increased lacrimation.

Patient was referred to eye OPD. She was complaining of increased lacrimation, foreign body sensation and photophobia since 15 days. Patient had right eye lid edema with conjunctival congestion with mild corneal edema. On eversion of right upper lid small white thread like worms were observed moving (Fig-1). After instilling local anaesthesia the conjunctival fornices were examined. Worms were identified and removed with forceps (Fig-2) there were six worms in subconjunctival space which were removed. Only one worm was extracted intact which was kept in ethanol and sent for microbiological examination. It was identified as *Thelaziacallipaeda* (Fig-3). She was prescribed topical moxifloxacin and carboxymethyl cellulose to prevent superadded bacterial infection and dryness of eyes. The patient was relieved of her symptoms on follow up after 3 days. Patient gave a history that she goes to the fields daily and has a lot of mosquitoes, flies and insects at their place of work. They also had two dogs which were wild but usually used to stay in their close proximity.



Fig-1: *Thelazia* in subconjunctival space



Fig-2: Removal of worm by forceps



Fig-3: Thelaziacallipaeda seen under microscope

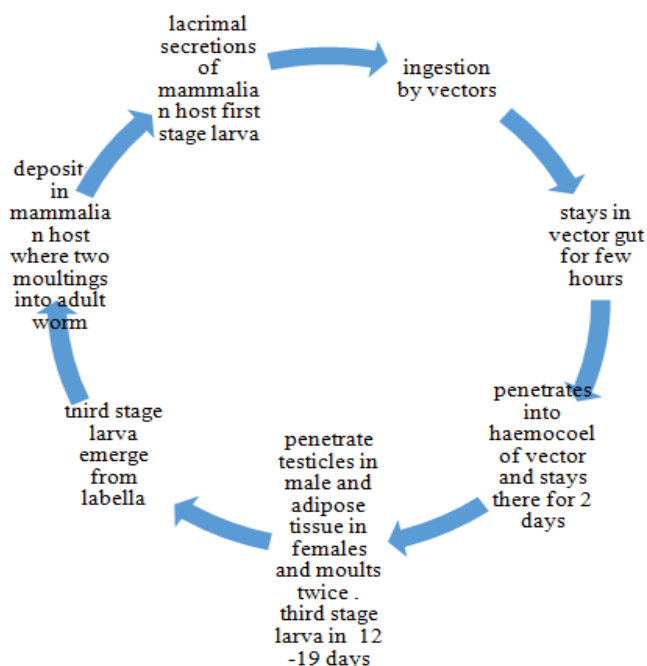
DISCUSSION

Ocular parasitosis can occur due to various round worms e.g., Angiostrongylus, Bancroftian and BrugianFilaria, Baylisascaris, Dirofilaria, Onchocercia, Loa loa, Toxocara, Trichenella and Thelazia [3]. Ocular parasitosis depends on geographic distribution of the parasite, the socio-economic and immune status of the patient. These can be transmitted by direct contact, hematogenous, transplacental,gastrointestinal route or through vectors. Vector borne ocular parasitoses are onchocerciasis, dirofilariasis and thelaziasis. Ocular

parasitosisnormally is more common in tropical regions.

Thelazia is a genus which is cosmopolitan and infests eyes of dogs, cats, foxes, wolves and rabbits and is transmitted by non biting flies. Poor sanitary conditions and close proximity with the animal host causes disease in humans also. There are two species known to cause human thelaziasis*T. callipaeda*and *T. californiensis*.*T. callipaeda*was first described by Railliet and Henry in 1910. The first human case of Thelaziasis was reported from Peiping, China by Stucky in 1917, who extracted four worms from the eye of a coolie [4]. This type also known as oriental eye worm as it is found in Soviet Union, China, South Korea, Japan, Indonesia, Thailand Taiwan, and India [5,6].

The first stage larva ofThelazia is very short-lived in the lachrymal secretions, only surviving a few hours. Non biting Diptera is the common vector. Life cycle of Thelazia is as shown in (fig-4) as transmission is vector dependent so there is seasonal variation of the disease (June to August). Dipteran family Drosophilidae (fruit flies, subfamily Steganinae) *Amiota variegata*, *A. okadai*, *Phortica* spp. and have been incriminated as vectors [7]. These flies are found in daytime only and are secretophagous so there is no role of using mosquito nets at night time [8].



Both the adult worm and the larval stages can cause eye symptoms. Normally male thelazia inhabitation is asymptomatic,it is the female gravid worm which causes symptoms [9]. Patient may present as increased watering from eyes, foreign body sensation, red eyes, itching, tearing sensation due to

inflammation of conjunctiva or cornea. Increased lacrimation may lead to eyelid dermatitis, swelling of lids [10]. Corneal edema may lead to keratitis, photophobia and corneal erosions. Rarely paralytic ectropion can occur [11, 12]. There is a single report of Thelazia involving posterior chamber [1]. Thelazia has

serrated cuticle which causes mechanical damage to the conjunctival and corneal epithelium. Allergic and bacterial conjunctivitis have a similar presentation. The seasonal predominance may be seen in allergic conjunctivitis [13]. Identification of the worm or its larval stages may help in confirming diagnosis. Because of asymptomatic nature in some patients and it mimicking common ocular affections the disease is under reported.

Male adult worm is shorter than female measuring 4.5-13 mm in length and 0.25 to 0.75 mm in diameter and 6.2 to 17 mm and from 0.3 to 0.85 mm in diameter respectively. The larva is still smaller in size.

Treatment of this condition is removal of the worm with saline lavage. Some studies advice giving subconjunctival levamisole. Oral ivermectin and oral levamisole have been suggested by few studies as a supplementary therapy.

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