

# Case Report

## Ocular Thelaziasis in a 4 Months old Girl Child

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### Abstract

**Background:** Worm infestations of the eye are rare situations. Among those, ocular Thelaziasis is very uncommon.

**Case characteristics:** 4 months old-girl presented with redness, watering and irritation in the left eye for 2weeks. The Thelazia were present in the conjunctival sac. **Intervention/outcome:** All worms were removed; Framycetin ointment was applied. The child was asymptomatic within 10 days. **Message:** Awareness and early detection prevents complications.

**Key Words:** Ocular thelaziasis, Conjunctival sac, Animal host.

Chettinad Health City Medical Journal 2014; 3(1): 15 - 17

### Introduction

Worm infestations of the eye are rare. The commonest infestation mentioned in the literature is Ocular Filariasis, caused by *Loa loa*. Other worms may also inhabitate the eye, eg. Thelazia, which usually produces conjunctival infestation. Thelazia is a genus of nematode worms which are inhabitants of the eyes of dogs, cats, rabbits, camels and rarely, humans<sup>1</sup>. They are often called "oriental eyeworms," as they are seen in countries of Asia. Infestation with Thelazia species is called as "Thelaziasis". In the hosts they are found in the eyelids, tear glands, conjunctiva and vitreous cavity of the eyeball<sup>1</sup>. If this is not diagnosed early and treated it may lead to chronic conjunctivitis, scarring, keratitis, corneal ulcer and rarely intraocular problems<sup>2</sup>. This report is published because of its rarity and also to spread awareness among practitioners.

### Case report

At the foothills of Adalur( near Oddanchatram), a 4 month old-girl was brought to our clinic by her mother with the history of itching, redness, watering and mucoid discharge from the left eye for 2weeks. There was no history of fever.

Child was exclusively breast fed and was weighing 5 kg. Left eye examination revealed mucous discharge and lacrimation with redness all over the conjunctiva indicating conjunctivitis. On careful examination, four tiny thread like glistening worms were seen [fig 1]. All the worms were seen moving very fast over the conjunctiva. On eversion of the upper eye lid, two motile worms were seen in the upper part of the fornix. Right eye examination did not reveal any worms and was normal. There was a history of street dogs visiting this family for food. Systemic examination was normal. Blood counts were normal.



Fig 1 - Thelazia worms in the eye

With the help of the ophthalmologist, 4% Xylocaine drops were instilled. The upper eyelid was double everted with a lid retractor; all the six worms were removed with suture tying forceps [fig2].



Fig 2 - Thelazia after removal

Extracted worms were preserved. Apart from conjunctivitis there was no ulceration in the conjunctiva. Intraocular structures and fundus were normal. Framycetin ointment was applied. Promethazine syrup was given. Antinematodal drugs are not indicated for local infestations hence not used. At one month follow up, the child had recovered.

The extracted worms were sent to the regional parasitology laboratory and their study revealed that the worms were white thread like structures, measuring 12-13 mm in length and 0.4-0.5 mm in width and had transverse striations [fig 2]. The head bore four pairs of papillae. The posterior end of the worm carried many pairs of papillae and spicules and was therefore reported under genus- Thelaziidae.

## Discussion

Thelazia are not human parasites. They are transmitted from animals to humans through intermediate hosts, mainly Dipteran flies (*Musca autumnalis*, *Musca domestica*, *Fannia species*, etc). The sheathed larvae released by the female worms reach the tears of the infected animal host and are ingested by the flies that feed on the tears. Inside the flies, these hatch, cross the gut wall and migrate to various tissues and develop into infectious larvae and migrate to mouth parts of flies. When these flies feed on tears of humans, they transmit the larvae into the conjunctival sac and become adult worms in 3 to 9 weeks, which may live for 1 year or longer<sup>2</sup>.

Though travel to mountainous region has been implicated as a risk factor in some of the reports, cases have been reported in which this history was not found. Therefore it seems that vector and reservoir may be present in plains itself. This relation of vector and reservoir in plains needs further epidemiological study<sup>3</sup>.

## Thelaziasis in Indian States

There are a few cases of Thelazia infestation among humans reported from India<sup>3</sup>. Probably, the first case of *Thelazia callipaeda* infection was reported from Salem District, India, in 1948<sup>3</sup>. Subsequently, four cases were reported by various authors from Manipur, Assam, and Himachal Pradesh<sup>3</sup>. All these reports are of *Thelazia callipaeda* infestation except the report by Mahanta et al, 2000, in a 13 year old girl, where the case was reported as Thelazia species but the worm isolated was an immature male for which species differentiation could not be done<sup>3</sup>. Therefore, it may be speculated that more cases of Thelazia infestation may be present in Assam, particularly in Dibrugarh district, which may not have been recorded. On many occasions, the patients do not seek medical treatment because of the spontaneous exit of the worm and cure without specific treatment<sup>3</sup>. Not only India but other countries too have reported cases of infestation by Thelazia. Several studies found that up to 30-50% of cattle can be affected by Thelazia species in UK, Italy, Canada and parts of USA. Dogs showed similar infection rates in several Southern European countries<sup>2</sup>. In 2007, there was an interesting case report of vitreous infestation and retinal detachment in Canada<sup>4</sup>.

Thelazia damages the tissues of the eye, especially the conjunctiva which becomes scarified, fibrous and provoke excessive secretion of lacrimal fluid<sup>5</sup>. Some hosts experience very severe pain due to active movement of the worms within the eye. In the same eye both adult male and female worms were found previously. This suggests that Thelazia can complete their life cycle in man, the accidental host, as well<sup>5</sup>.

Out of ten known species of Thelazia, there are nearly 15 reports of the incidence of *T.callipaeda* in man and less than a dozen reports about *T.californiensis*, a closely allied species<sup>6</sup>. It is more common in animals hence it is definitely a zoonotic disease and man becomes the occasional host. Ocular Thelaziasis was reported in a chronic bedridden, mentally ill, diabetic patient and in a patient with senile dementia<sup>6</sup>. As per Y. Koyama, A.Ohira, T.Kono, T.Yoneyama, and K.Shiwaku, two to five thelazial worms were removed from the conjunctival sac per patient<sup>6</sup>. In our case, we removed six worms from the conjunctival sac.

According to the study by Otranto, D. and M. Dutto (2008), only unilateral ocular thelazial infestation were noted in their cases<sup>7</sup>. We observed the same in our case. A follow up after six months revealed that both eyes were normal.

## Key message/Inference

This interesting case was diagnosed early and treated. Full recovery was attained in a short period. But Thelaziasis is a rarely diagnosed disease. In some places of rural India where there is a high infestation rate among animals, awareness has to be raised among paediatricians and general practitioners for early diagnosis. If not treated early, it can lead to scarring and further complications of the eye. Hygienic techniques like hand washing and various fly control measures can help in preventing the disease.

## References

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#### **Killer Diet!**

Low-carb diets like Atkins' have emphasized high intake of animal protein and fat. While they lead to successful weight reduction, they also increase serum cholesterol, thus increasing the risk of heart disease. Now a study published in *BMJOpen* (Jenkins DJA et al, *BMJOpen* 2014;4:e003505) claims that a low-carb vegan diet overcomes known drawbacks of those earlier diets. Dubbed "Eco-Atkins" diet, it helps not only in reducing your bulk but also in reducing the risk of heart disease by 10% over a period of 10 years. Principal investigator Jenkins claims that "they killed two birds with one stone — or, rather, with one diet". It combines the cholesterol reducing effect of vegan diet with weight reducing effect of low-carb diet.

**- Dr. K. Ramesh Rao**