

SHORT COMMUNICATION

# Removal of *Thelazia callipaeda* from the subconjunctival space

T. YAGI<sup>1</sup>, M. SASOH<sup>1</sup>, T. KAWANO<sup>1</sup>, K. ITO<sup>1</sup>, Y. UJI<sup>1</sup>, K. ANDO<sup>2</sup>

<sup>1</sup>Department of Ophthalmology

<sup>2</sup>Department of Medical Zoology, Mie University School of Medicine, Mie - Japan

**PURPOSE.** To report the finding of *Thelazia callipaeda* within the human subconjunctival space.

**METHODS.** An 81-year-old man with a history of traumatic conjunctival laceration that occurred 2 years previously had white worms in the subconjunctival space of his right eye.

**RESULTS.** Five worms were removed from the subconjunctival space via a local peritomy, since there was no conjunctival laceration noted during the examination. These worms were identified as *T callipaeda*.

**CONCLUSIONS.** *T callipaeda* cannot dig holes in the ocular wall due to the lack of hooks or sharp spines within the mouth. Therefore, the authors speculate that these worms entered the subconjunctival space through a conjunctival laceration that had occurred 2 years previously. (*Eur J Ophthalmol* 2007; 17: 266-8)

**KEY WORDS.** Nematode, Subconjunctival space, *Thelazia callipaeda*, Trauma

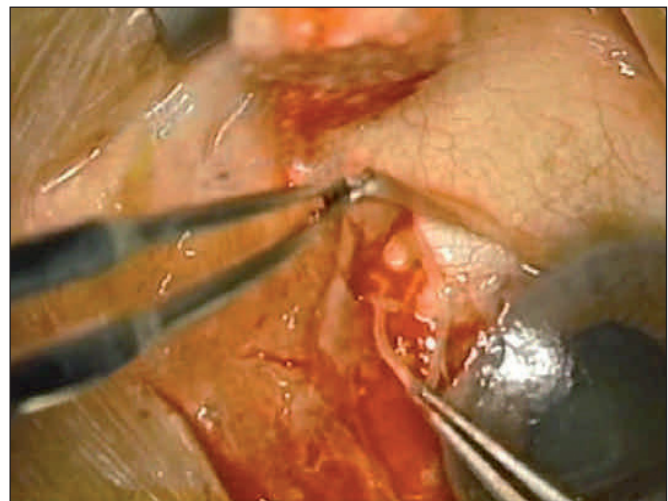
Accepted: November 27, 2006

## INTRODUCTION

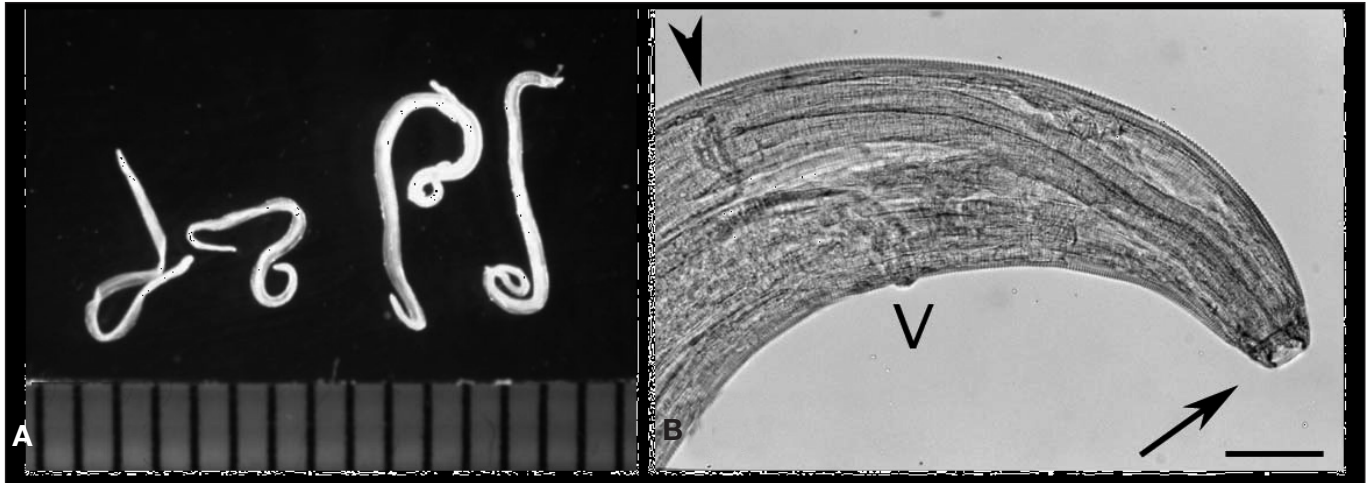
*Thelazia callipaeda* is a spiruroid nematode that is the causative organism of human thelaziasis. The worm affects the conjunctival sac in general (1), and it causes lacrimation and irritation. In rare cases, it has been reported that *T callipaeda* has been detected in the anterior chamber (2) and in the vitreous cavity (3). However, we are unaware of any previous reports that have detected *T callipaeda* in the subconjunctival space. In this report, we present a rare case of five *T callipaeda* that were removed from the subconjunctival space.

### Case report

An 81-year-old man from Nabari City in Mie prefecture, which is located in the middle part of Japan, was presented with a history of conjunctival laceration of the right eye



**Fig. 1** - Intraoperative findings. A local peritomy was gently done to expose the wriggling worms, which were then removed using forceps.



**Fig. 2** - Example of *Thelazia callipaeda* removed from the patient in the present case. **(A)** The four worms were slender and of a white cream color (scale in mm). **(B)** Anterior portion showing the characteristic rectangular buccal cavity (arrow). The vulva (V) was located anterior to the junction of the esophagus and intestine (arrowhead). Bar = 100  $\mu$ m.

that had been caused by the branch of a tree 2 years previously. At the time of his initial injury, a conjunctival suture was not performed. At the time of his latest visit, he had irritation and discharge of his right eye due to a blunt injury to the eye 3 days prior to being seen. He had no visual complaints at the time of presentation and upon examination was found to have a best-corrected visual acuity of 20/20 in both eyes. The conjunctiva of the right eye was congested, but exhibited neither laceration nor disinsertion. Slit lamp examination revealed some small, white, creamy-colored parasites wriggling in the nasal subconjunctival space. There were no abnormal findings for either the anterior segment or the fundus of both eyes. Under local anesthesia, a local peritomy was gently done at the 3 o'clock limbus, with the conjunctival flap retracted to expose the wriggling worms. Five worms were removed using forceps (Fig. 1). The patient was put on a short course of topical antibiotics, and has had no further complaints following the surgery.

One worm was inadvertently destroyed, but we were able to examine the four other worms in detail. These worms were of a semilucid white cream color and measured 8.1 to 14.1 mm in length and 270 to 360  $\mu$ m in width (Fig. 2). The anterior portion of these worms showed a characteristic rectangular buccal cavity, and the vulva was located anterior to the junction of the esophagus and intestine in two of the worms (Fig. 2). In addition, the posterior portion of the other two worms showed spicules. Based on these findings, we identified the worms as *T callipaeda*, of which two were female and two were male.

## DISCUSSION

At the time of the examination, the patient had no laceration of the conjunctiva of his right eye. *T callipaeda* has no hooks or sharp spines in the mouth or elsewhere on the body (3), and thus, this raises the question of how the worms were able to enter the subconjunctival space. There are two possible explanations. First, the conjunctiva may have been lacerated by the blunt injury that occurred 3 days prior to the patient's presentation. It is possible that the mature worms in the conjunctival sac entered the subconjunctival space through this laceration, with the laceration then closing within a 3-day period. However, it is doubtful that the conjunctival laceration could have closed within 3 days without any sign or scar being visible. Moreover, the patient exhibited no ocular symptoms including ocular irritation or discharge before the blunt injury. Thus, there is a slight possibility that the five mature worms were within the conjunctival sac prior to the last injury. Second, since the patient's conjunctiva was lacerated 2 years ago and at the time was not sutured, it is possible that there may have been an opening in the conjunctiva for a certain time during this period. The larvae of the worms may have entered into the subconjunctival space through this opening, and then grown and matured during the time when the opening closed. However, it is unknown as to when the worms might have gained access to the subconjunctival space, and if so, when the conjunctival opening closed. It has been experimentally demonstrated that *T callipaeda* survives at least 9 months

in definitive hosts (4), although it is unknown as to how long *T callipaeda* is able to survive in field conditions. Overall, the latter explanation is more likely, and the presence of *T callipaeda* within the subconjunctival space may cause little ocular irritation or discharge.

*The authors have no proprietary interest in any of the materials used in this study.*

Reprint requests to:  
Mikio Sasoh, MD  
Department of Ophthalmology  
Mie University School of Medicine  
2-174 Edobashi, Tsu  
Mie 514-8507, Japan  
sasoh@clin.medic.mie-u.ac.jp

---

## REFERENCES

1. Koyama Y, Ohira A, Kono T, Yoneyama T, Shiwaku K. Five cases of thelaziasis. *Br J Ophthalmol* 2000; 84: 441.
2. Yuguchi M, Majima A, Taki M, Sato S. Three cases of thelaziasis in the anterior chamber. *Folia Ophthalmol Jpn* 1982; 33: 1117-22.
3. Zakir R, Zhong-Xia Z, Chioldini P, Canning CR. Intraocular infestation with the worm, *Thelazia callipaeda*. *Br J Ophthalmol* 1999; 83: 1194-5.
4. Otranto D, Lia RP, Buono V, Traversa D, Giangaspero A. Biology of *Thelazia callipaeda* (Spirurida, Thelaziidae) eyeworms in naturally infected definitive hosts. *Parasitology* 2004; 129: 627-33.