

## CASE REPORT

### PARAFILARIA BOVICOLA TUBANGUI 1934 FROM A HUMAN EYE IN THAILAND

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**Abstract.** A 72 year old Thai male; a resident of Kapoe district, Ranong Province, Southern Thailand presented with conjunctivitis of the left eye. A filariid nematode was recovered from under the medial side of ocular conjunctiva of the left eye. The filariid nematode was identified as a young adult female *Parafilaria bovicola*, based on the following characteristics: no alteration of the transverse striations on the anterior end of the body, the terminal anus and the vulva opening is just posterior to the mouth. This is a first case report in Thailand of *P. bovicola* causing human disease. *P. bovicola* has caused damage to the meat industry in many countries and has caused disease in humans. Further study of the life cycle, occurrence among cattle, and transmission of the disease between its natural host and humans is necessary.

Since being described by Yorke and Maplestone in 1926, four valid species of the genus *Parafilaria* have been reported, namely *Parafilaria multipapillosa* (Syn. *Filaria haemorrhagica*) (Condamine and Drouilly, 1878), *Parafilaria bovicola* Tubangui 1934, *Parafilaria antipini* Ruchiadev 1947 and *Parafilaria bassoni* Ortlepp 1962. *P. multipapillosa* was found in the subcutaneous and intramuscular connective tissues of Equidae in Eastern and Southern Europe, North Africa, Asia and South America (Soulsby *et al*, 1965). *P. bovicola* was found in Bovidae in Asia (Philippines, India, and Japan), Africa and Europe (Romania, France, and Sweden) and *P. antipini* was found in the hypodermic tissue of Cervidae in Europe and Asia, whereas *P. bassoni* was found in the eyes of *Antidorcus marsupialis* and *Syncerus caffer* in Namibia and South Africa (Gibbons *et al*, 2000). None of these *Parafilariid* nematodes had ever been found in a human eye. This is the first case report of a *Parafilariid* nematode being recovered from a human eye.

A 72 year old Thai male came to Kapoe Hospital, Kapoe district, Ranong Province, Southern Thailand with the chief complaint of suffering from conjunctivitis in his left eye for 4-5 days. On examination by the third author, the left eye showed signs of conjunctivitis, of both the ocular and bulbar conjunctivae. A curly, moving thread-like object was observed under the medial side of the ocular conjunctiva and was removed using the tip of a surgical blade. The thread-like object was then fixed in 70% alcohol and delivered to the Department of Parasitology, Faculty of Medicine at Siriraj Hospital, Mahidol University, for identification. Ophthalmic antibiotic solution and ointment were prescribed for the patient. Two months later, the patient was re-examined. Both bulbar and ocular conjunctivae of the left and right eyes were normal. No subcutaneous nodules were detected elsewhere on the face, body or limbs. The patient is a native of North-eastern Thailand, Ubon Ratchathani Province, and had moved to Kapoe district 5 years ago. He owned a small coffee plantation at Kapoe district and kept a few chickens, pigs, cattles, and dogs around his house. He had never been out of the country.

The specimen was examined under dissecting and compound microscopes. Glycerine was

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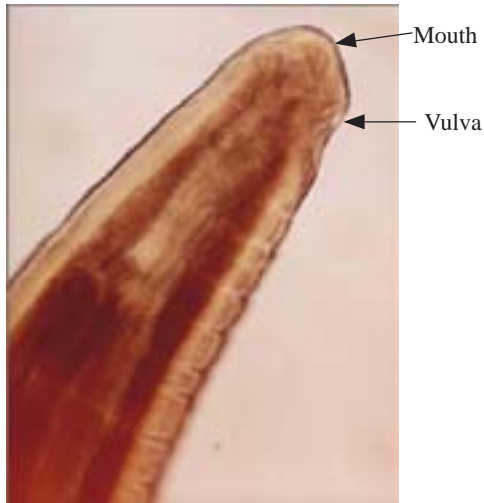


Fig 1—Vulva opening at anterior end close to the mouth (x 150).

used as a clearing agent for determining the internal organs.

This revealed that the thread-like object recovered from the eye was a female filariid nematode which was cut approximately in the middle into two pieces. The body was covered with fine transverse striations. There was no alteration of the transverse striations observed on the anterior extremity. The filariid nematode measured 65 mm long and 0.47 mm wide at the level of the posterior end of the esophagus. The filariform esophagus measured 0.25 mm long. The simple intestine ended in a terminal anus (Fig 1). A pair of papilla were seen on the lateral aspects of the anus. The uterus was filled with oval granules, which were possibly developing ova. The vulva opening was situated close to the mouth (Fig 2).

From the above description, the filariid nematode obtained from the human eye was identified as a young adult female *Parafilaria bovicola*.

A female *P. bovicola* was first reported as a new species parasitized in the skin nodules of native cattle from Luzon, the Philippines (Tubangui, 1934). It was later recovered in many countries of the world, only from the skin nodules of cattle. This report is the first case report of *P. bovicola* ever recovered from a human eye.

In Sweden, the life history of *P. bovicola* was studied, and it was found that *Musca autumnalis*,

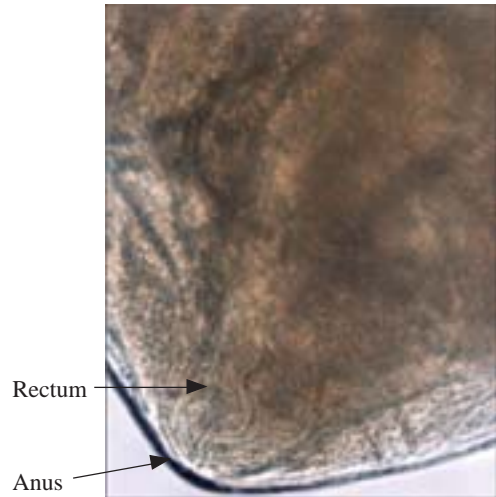


Fig 2—Terminal anus of the female (x 450).

face flies, served as both natural and experimental intermediate hosts (Beck-Nielson *et al*, 1982). In South Africa, face flies namely *Musca lusoria*, *Musca xanthomelas* and *Musca nevillei* have been known to serve as vectors for *P. bovicola* (Nevil, 1975). The face flies acquired the microfilariae while feeding on the exudate oozing from the dermal and subcutaneous nodules of the infected animals. The microfilariae then developed in the hemocoel of the flies and became infected larvae, which eventually reached the mouth part of the flies. The cattle developed infection while the female face flies fed on their eye secretions. The prepatent period ranged from 7 to 10 months (Nevil and Sutherland, 1987).

The patient reported here, possibly developed infection while face flies fed on his lacrimal secretions. *P. bovicola* was notoriously known to cause haemorrhagic bovine filariasis, or the green muscle disease of the cattle. It has been reported that this filariid nematode has caused notable cattle loss in South Africa, Northern Africa, Sweden, France, Rumania, India and the Philippines (Krafsur and Moon, 1997). Considering the recovery of the young adult female *P. bovicola* from the eye of a patient who had never been out of Thailand, this reveals that this filariid nematode exists in this country. The life cycle should be completed as well. As mentioned earlier, *P. bovicola* has been found to cause disease in humans in Thailand, in addition to cause disease in

livestock. Further investigations into the occurrence this disease in human and livestock, its life cycle, and epidemiology, are necessary.

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