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□ **Brief Communication** □

A Human Case of *Thelazia callipaeda* Infection with Reference to Its Internal Structures

Sung-Tae Hong, Soon-Hyung Lee and Sook-Il Kim*

Department of Parasitology and Institute of Endemic Diseases, College of Medicine, Seoul National University, Seoul, 110-460, and Korea Association of Health, Kyonggi-do Branch, Suwon, 440-300, Korea*

Abstract: Female and male nematodes isolated from an eye of a 36-year old Korean man in August 1987 were identified as *Thelazia callipaeda*. This is the 17th record of human thelaziasis in Korea. The internal structures of both female and male were described.

Key words: *Thelazia callipaeda*, thelaziasis, man, internal structures

Total 16 cases of human thelaziasis have been recorded in Korea (Hong *et al.*, 1981; Ryu *et al.*, 1987; Min and Chun, 1988). All of them were confirmed as infection with *Thelazia callipaeda* except one, which was identified simply as *Thelazia* sp. (Im *et al.*, 1974).

In August 1987, a 36-year old Korean male who lived in Suwon, inquired about white nematodes which were recovered from his left eye. He suffered from foreign body sensation and increased discharge from his left eye for 20 days. On a day, he himself looked into his eye on a mirror and found a white moving worm in the conjunctival sac. He tried to pick it out but failed. He visited a private ophthalmology clinic and complained about the worm. No worm was seen at that time and he was treated just for conjunctivitis. Thereafter, however, he found the worm again in his left eye at home and his wife and brother picked out 4 living worms from the conjunctival sac with cotton balls.

He consulted about the worms to the laboratory of the Korea Association of Health, Kyonggi-do Branch. The worms were fixed with 10% formalin there, and consulted to the Department of Parasitology, College of Medicine, Seoul National University.

The worms were cylindrical and chalky white. Two were females and two were males. Among them, a male and a female specimens were stored in alcohol-glycerin for 5 months and mounted in glycerin-jelly for detailed observation.

The female was 17.4 mm long and 0.43 mm wide (Fig. 1). It had a rectangular buccal cavity and its esophagus was 0.69 mm long. The vagina opened at 0.15 mm anterior to esophagointestinal junction. Numerous round and disk-shape encysted larvae by a shell membrane (in strict sense embryonated eggs), 0.112~0.147 mm (0.130 mm in average) in diameter, lay in a row in the distal uterus. In the uterine tubules, the winding larvae intermingled together, and unembryonated eggs were observed among the larvae. The larvae occupied whole width of the worm. Near the half length of worm, the eggs were found predominantly but some larvae were also seen. The unembryonated eggs measured 0.063~0.077 (mean 0.073) mm long and 0.035~0.049 (mean 0.043) mm wide. In the posterior half

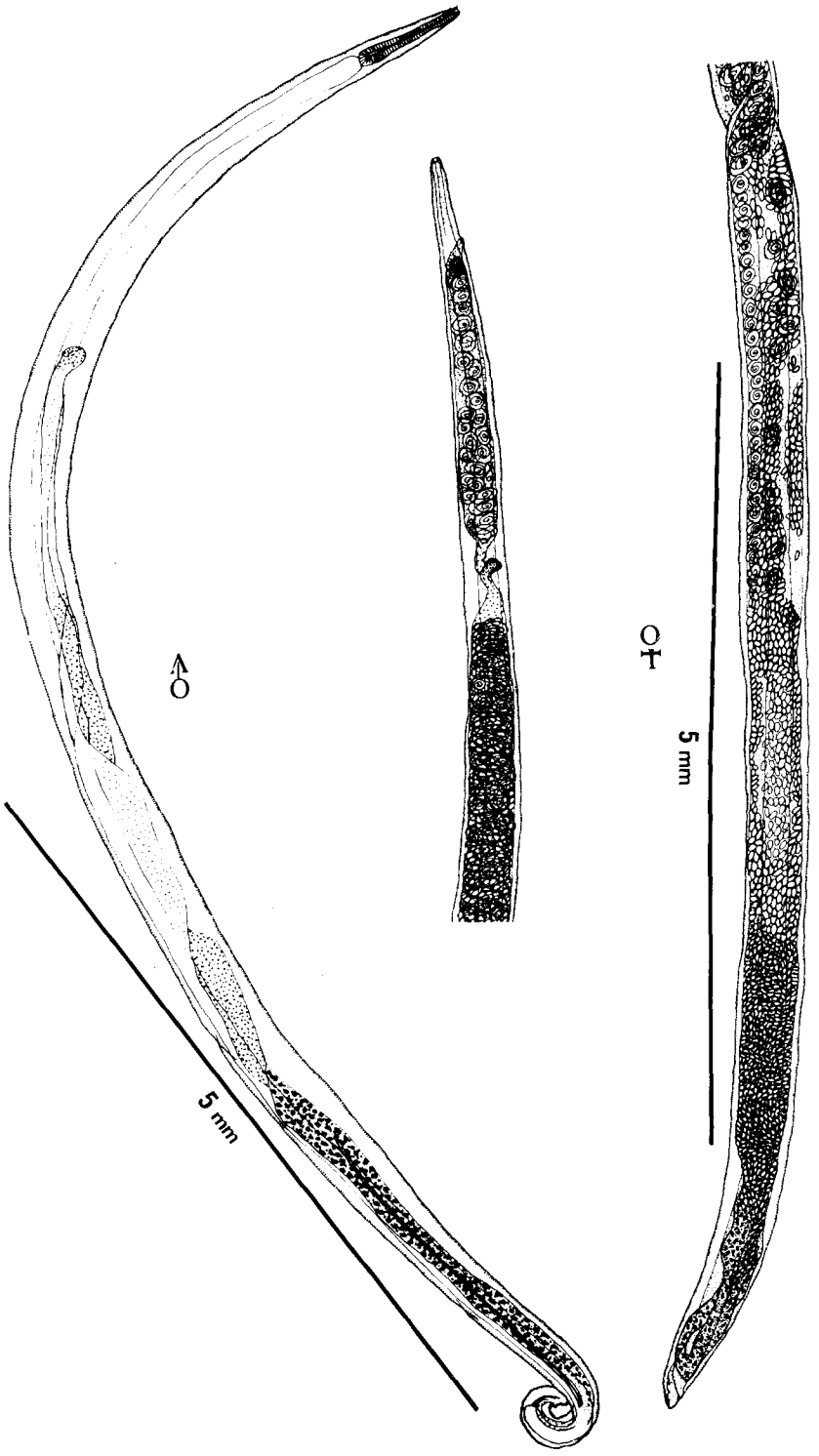

Fig. 1. Male and female *Thelazia callipaeda* from the present case.

of body, the unembryonated eggs filled the uterus and immature eggs or germ cells were found near its posterior end. The anal opening was found at tail. Transverse cuticular striations were found throughout the body; 268/mm at esophageal level, 142/mm at midportion and 164/mm at tail(Fig. 1).

The male worm was 11.5 mm long and 0.37 mm wide (Fig. 1). Its buccal cavity was rectangular, and its esophagus was 0.55mm long. From mid-portion to tail, the testis was found. Nine pairs of preanal papillae and 3 pairs of postanal papillae were observed. Two spicules were observed near the cloaca, the longer left one was 2.3 mm long and the shorter right one 0.14 mm long. The numbers of transverse cuticular striations per mm were 246 around the esophagus, 164 at mid-portion and 194 near the cloaca (Fig. 1).

With the morphological characteristics of vaginal opening anterior to esophagointestinal junction in the female worm, 9 pairs of preanal and 3 pairs of postanal papillae of the male, and 142 to 268 transverse cuticular striations in both female and male, the worms from the present case were identified as *T. callipaeda*.

The patient stated that he several times traveled to mountainous areas in northern Kyonggi-do from spring to summer, 1987. At that time, he experienced several episodes of eye attacks by certain kind of fly. The episode might be related to the infection of *Thelazia*, although the vector has not been verified yet in Korea.

There have been many records on human thelaziasis with morphological descriptions, however, few have drawn the whole length of the worm. They described only the buccal cavity, vaginal opening and caudal papillae (Bhaibulaya *et al.*, 1970; Arizono *et al.*, 1976; Hong *et al.*, 1985).

In the present record a special reference was given to the internal structures of both female and male worms. The female worm has been described to produce either larvae or fully embryonated eggs, and it has been confused whether *Thelazia* is viviparous or ovoviviparous. Yamaguti (1958) described it viviparous but Nagada (1964) recorded it to be ovoviviparous. The nature of cyst walls of (encysted) larvae was not different microscopically with that of egg shells in the proximal uterus although differed in size. They looked not to hatch within the uterus, but appeared to grow remarkably in length to be coiled in the egg shell. Through the intrauterine maturation, the oval-shape eggs became round disk-shape (encysted) larvae of double diameter. Therefore, *T. callipaeda* is regarded ovoviviparous rather than viviparous.

This is the 17th human case of thelaziasis in Korea. There may have been many unrecorded cases, since extraction of the worm from eye is all of the treatment. In Korea, certain kinds of flies attacking face of animals and man are suspected as its vector. This should be investigated in the future.

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=국문초록=

동양안충증 1례 및 충체 내부구조 관찰

서울대학교 의과대학 기생충학교실 및 풍토병연구소, 및 한국건강관리협회 경기도지부*
홍성태 · 이순형 · 김숙일*

저자들은 36세의 한국인 남자가 1987년 8월 자신의 눈에서 꺼내어 의뢰한 충체를 동양안충(*Thelazia callipaeda*)으로 동정하여, 국내 제17번째 증례로 기록하고자 한다.

환자는 수원에 거주하며 그 해 봄·여름에 경기도 북부지방의 산과 계곡을 자주 여행하였고 그때 파리가 눈에 침입한 경험이 여러번 있었다고 한다. 충체를 꺼내기 약 20일전부터 이물감과 눈물 분비가 심하였다. 거울을 통하여 자신의 왼쪽 눈 결막낭에 움직이는 흰 충체가 있음을 관찰하였고 가족의 도움으로 집에서 충체 4마리를 꺼낸 다음 이를 건협경기지부에 문의하였다. 충체는 다시 서울대학교 의과대학 기생충학교실로 보내어져 동정이 의뢰되었다.

암컷은 길이 17.4 mm, 최대폭이 0.43 mm이고, 구강이 사각형이며 음문(vulvar opening)이 식도-장 경계부보다 0.15 mm 앞에 위치하고 mm당 표피의 가로 주름이 식도부에서 268, 중앙부에서 142, 후미에서 164이었다. 체후단에서는 생식모세포가 관찰되나 곧 난원형의 충란(0.073×0.043 mm)이 형성되고 후 1/3 부위에서는 유충이 섞여 관찰되었다. 체중앙부로 이어지면서 무수한 유충이 음문까지 가득차 있었다. 수컷은 길이 11.5 mm, 폭 0.37 mm이었고 표피 가로주름의 수가 mm당 식도부위에서 246, 중앙부에 164, 항문 근처에서 194이었다.

이상의 소견으로 이 충체를 동양안충으로 확인하였고 암·수 각각 충체의 내부 생식기관의 형태를 함께 기록하였다.