A Case of Human Thelaziasis in Seoul

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INTRODUCTION

*Thelazia callipaeda* was first described by Raitlet and Henry from the nictitating membrane of a dog from Rawal Pindi, Punjab in 1910. The first human case was reported by Stucky in 1917, who extracted four worms from the eye of a coolie in Peiping. In Korea, six cases of human thelaziasis have been already reported and all of the worms were identified to be *Thelazia callipaeda*.

The present paper is to report the 7th human infected case of *Thelazia callipaeda* in Korea, when the literature were concerned.

CASE PRESENTATION AND DESCRIPTION OF SPECIMEN

On October 9, 1977, Dr. Shin, ophthalmologist of Shin Eye Hospital, Seoul, extracted one adult male nematode from left eye of a 24-years old Korean male. The patient was born and has been in Seoul. But he has liked to climb mountains all over Korea. On that morning when the worm was extracted, he had previously removed one worm already and disposed of it, but he felt another worm remained still in the left eye. He complained of foreign body sensation and lacrimation. Dr. Shin found the worm by biomicroscopy and extracted it.

This worm was fixed in 70% alcohol then with 10% formalin. The morphological features of the worm, filiform, cylindrical, white, attenuated at both ends and slender, was 8.22 mm long and 0.29 mm wide. Buccal cavity was 0.22 mm long and 0.29 mm wide and esophagus was 0.48 mm long. Head papillae were invisible and transverse cuticular striations were 190-360 per mm. Two spicules, large and small, were observed.

DISCUSSION AND HISTORICAL REVIEW

According to Faust (1927), eye worms, belonging to the genus *Thelazia*, were first described by Johannes Rhodes in 1676 based on the material obtained from *Bos taurus*. In 1819, Bosc redescribed these worms and referred to them as “Thelazia de Rhodes”.

Since then, a number of species of eye worm have been reported in certain animals and birds from different countries of the world. Human eye is parasitized with nematodes of this group, but very rarely. Okamura (1970) stated that *Thelazia spp.* frequently occurs on the conjunctiva of dogs, rabbits, deers and cows. Some of them are known as *T. rhodesi*, *T. callipaeda*, *T. lacrymalis*, *T. gulosa* or *T. californiensis*. 
*T. callipaeda* is small nematode; the male is measured to be 11.08 mm long and female, 13.66 mm. *T. californiensis*, found in the eye of mammals in California and in some adjacent areas of Oregon and Nevada. The definitive hosts, which have been known, are the dog, deer, cat, horse, sheep, coyote, bear and man. Developmental forms of the worms were found in *Fannia canicularis* and similar developmental forms of nematodes were found in specimens of *F. benjamini* collected near San Bernadino, California, an area endemic for the eye worm. So these are believed to be the result of natural infection of the parasites.

On the other hand, *T. callipaeda* was first reported by Railliet and Henry from a Chinese dog in 1910, and known as an oriental eye worm. Further cases of ocular infection with this worm in Burmese dogs were reported by Evans and Rennie, 1910. Human case was first reported by Stucky from a 25 years old coolie in Peiping, China in 1917. Almost all of early cases of *T. callipaeda* were reported from China by Trimble (1917), Fisher (1919), Howard (1927), Faust (1927), Hsü (1933), Liang (1945), Chang (1948), then cases were reported in India by Friedmann (1948) and in Thailand by Chaiyaporn and Phanich (1969), Bhaiubulaya et al. (1970) and one case by Kozlov in U.S.S.R. in 1960.

In Japan, Hagihara reported the first human thelaziasis from Kumamoto in 1957. Since then more than 20 cases were reported by others. Arizono et al. reported a human case of *T. callipaeda* from Kyoto in 1976, and 11 out of 292 dogs were found infected with *T. callipaeda*. They studied the morphological features of the worms by scanning electronmicrographs. They stated that the cephalic papillae of inner circle, which was described by Hsü (1933), were observed as the shape of cordlike cuticular thickenings and were thought to differ from other papillae of nipple-like structure. At the posterior ends of both male and female, a pair of process with a pore at the center, were observed and thought to be the opening of the phasmid. Nagata reported the research results of *T. callipaeda* from Miyazaki prefecture, Japan, in which he stated that adult worm of *T. callipaeda* was 15 mm long in female and 11.0 mm in male in general. Intermediate hosts were *Amiota variegata*, *Amiota magna* and *Amiota sp.* These 3 species habitually surround, sucking the host’s eye. These *Amiota* species take the embryonated eggs with tear, and the eggs reach to the stomach of the intermediate host and then escape from it and develop in genital organ. The body of the larvae, then, elongated forming the sausage shape and actively move and the larvae also migrate to the head of intermediate host and develop into the infected larvae. If the infected larvae parasitize in the final host, acute conjunctivitis develop such as hyperemia, laceration andphotophobia. Soon after this process the lesion develops to be chronic. According to Faust (1970), *Thelazia* gives damage to the tissues associated with the eye. Its presence in the conjunctival sac provokes excessive flow of lacrimal fluid. Its repeated migration across the corneal conjunctiva and irritation of this layer eventually resulted in scarification and fibrous opacity of the cornea. The presence of adult worms in the conjunctival sac produces lacrimation. Excursions across the front of the cornea produce minute scratching of the surface, resulting in the development of opacities. Paralysis of the muscles of the lower eyelid, with ectorrhoea, has been attributed to the worms. The movement and mass of parasites in the sac produce excreting pain and severe nervous symptoms. Our case did not present symptoms such as opacity and excreting pain and nervous symptoms. The patient complained of foreign body sensation and lacrimation. We did not find
any pathological findings in the conjunctiva and eyelids and cornea.

In Korea, total six cases of human thelaziasis have been reported previously, and could be listed as follows; a female Thelazia worm was extracted from a Korean girl in 1927 and reported by Nakada in 1934, and a male Thelazia worm was extracted from left conjunctival sac of a boy and observed by Suzuki in 1935. Another single specimen taken from an 11-month old boy from northwest Korea by Sillman in 1945, a male Thelazia worm was extracted from a Korean girl by Chu and Cho in 1973, a male Thelazia worm was extracted from a 20 years old boiler worker by Im et al. in 1974 and the 6th case was infected with a female worm which were extracted from a girl (Oh et al., in 1975).

SUMMARY

Thelazia callipeda, parasitic in the eye of 24 years old Korean male, was extracted from the left eye of the patient in Seoul, Korea. We confirmed that as T. callipeda morphologically, based on the descriptions of Hsü and other literature.

We presents the 7th human thelaziasis case in Korea with the historical review of the literature.

ACKNOWLEDGEMENTS

The authors express their thanks to Dr. S.Y. Cho, Assistant Professor of Parasitology, Medical College of Seoul National University for his comments and supply of literature.

REFERENCES


서울에서의 東洋眼蝨(Thelazia callipaeda)의 人體寄生 1例

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우리 나라에서는 中田 (1934)에 依하여 最初的 人體寄生例가 報告된 以来 現在까지 6例의 人體寄生例가 發表되었으므로 本例는 第7例라고 생각된다.

本例는 1977年 10月 9日に 서울市內에 眼科病院에서 治療한 24歳의 男子の 左眼에서 發出した 것인데 그날 아침 早期에서 실같은 蝨體를 왼마리 껴들 뒤에도 繼続해서 異物感과 鼻梁이 고치지 않아 来院하였다고 한다. 眼部 驗査로 左眼下瞼結膜囊에서 蝨體를 發見하여 摘出した.

本蝨은 길이가 8.22mm 幅은 0.29mm의 乳白色線蝨으로 約과의 길이는 0.02mm 幅은 0.029mm 이었고 食道의 길이는 0.48mm이었다. 雄蝨으로 大小 2個의 交接針을 본 수 있었고 頭部에서 乳頭는 본 수 없었고 體表面의 周 距은 1mm 當 190~360개이었다. 이로 成績은 Hsü (1933)의 計測範囲와 一致하였으므로 T. callipaeda로 同定할 수 있을 것으로 생각하였다.

이제까지 我国에서 報告된 本蝨은 7例중 5例가 雄蝨이고 나머지 2例는 雌蝨이었다. 窩巢宿主는 男子 4名 그리고 女子가 3名이었다.