CONJUNCTIVA PHILOPHTHALMOSIS: A CASE REPORT IN THAILAND

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Abstract. A 31-year-old Thai woman, a resident of Mapthaphut, Rayong Province, eastern Thailand, attended Rayong Provincial Hospital after suffering from consistent irritation of the eye for 5 days. Examination conducted by an ophthalmologist revealed a small worm moving on the conjunctiva of the right eye. The worm was removed and sent for identification. It was 2.9 mm in length, elongated oval, pharynx very large, ceca end close to the excretory pore, genital pore opens in front of the ventral sucker at the cecal bifurcation; it was identified as *Philophthalmus* sp., a trematode that parasites the eyes of birds. This is the first human case of *Philophthalmus* infection in Thailand.

INTRODUCTION

Trematode species in the Family Philophthalmidae parasitize the eyes of birds. The life cycle requires only two hosts. The adult lives in the eyes of bird definitive host and produces eggs containing eye-spotted miracidia that hatch immediately when they reach water. Miracidia infect snails first intermediate host and develop to redia and cercariae. The metacercariae encyst freely and openly, including on surfaces of food for birds. Successful direct infection of the definitive host of both cercariae and metacercariae can take place by entering the eye or by oral intake.1,2 Human cases of philophthalmosis have been previously reported in Europe, Asia, and America (i.e., Yugoslavia, Sri Lanka, Japan, Israel, Mexico, and the United States).3–8 The worm was reported as *Philophthalmus lacrimosus*, *Philophthalmus palpebrarum*, or an uncertain species. This paper reports the first case of philophthalmosis in a human eye in Thailand.

CASE REPORT

A 31-year-old housewife, a resident of Mapthaphut, Rayong Province, in eastern Thailand, visited Bangkok-Rayong Hospital on June 15, 2005 because of irritation in her right eye. Five days previously, she felt something moving in her right eye, but there was only irritation without pain. The itchiness and irritation were persistent and intensified as time passed, and finally she visited an ophthalmologist. Ophthalmoscopic examination revealed a small worm crawling on the inner side of the eyelid. Under local anesthesia, the worm was removed; the patient returned home without further complication.

The removed worm was placed in 5% formalin and sent for identification to the Department of Helminthology, Faculty of Tropical Medicine, Mahidol University, where it was stained in acid carmine and mounted in Permount. The worm was an elongated oval, 2.9 mm in length and 0.8 mm in width, with no integumental spines (Figure 1). The oral sucker was 409.5 × 283.5 μm, with no prepharynx; the pharynx was large (357.0 × 367.5 μm), there was no esophagus, and ceca were narrow and ended blindly close to the excretory pore. The ventral sucker was slightly larger than the oral sucker (472.0 × 493.5 μm). The testes were small, tandem, lying in the middle of the posterior end, and between two arms of the excretory bladder, 213.6 μm from the posterior end. The anterior testis was 60.0 × 87.5 μm, and the posterior testis was 42.5 × 85.0 μm. The cirrus sac was long and slender tubular and ran dorsal to the ventral sucker. The seminal vesicle was tubular, 210.0 μm in length. The cirrus was long and extended outside the body in this specimen. The genital pore opened anterior to the ventral sucker at the cecal bifurcation. Ovary and vitelline follicles were not seen. The uterus was long and winding between the ventral sucker and the anterior testis, filled with unsegmented to fully embryonated eggs. Eggs were elongated oval in shape, varying in size and shell thickness according to stage of development; an operculum was not clearly visible. Unsegmented eggs were 65.0 (range, 62.5–67.5) × 25.0 (range, 25.0–27.5) μm, the shell was thick, and an operculum was not seen. Developing eggs were 75.0 (range, 70.0–80.0) × 27.5 (range, 25.0–30.0) μm; the shell was thinner than the unsegmented egg, and an operculum was still not visible. Fully embryonated eggs were 87.5 (range, 77.5–95.0) × 32.5 (range, 27.5–35.0) μm, the miracidium had a one double-cupped eyespot, the shell was thinnest among the three stages, and an operculum was slightly visible. One miracidium was found hatching in the distal part of uterus.

DISCUSSION

From its morphology, it is certain that this specimen belonged to the genus *Philophthalmus*, but the species was difficult to determine. The genus *Philophthalmus* is large, with approximately 53 species, but less than 10 species are valid.9 Among specimens found in humans, two species were reported as *P. palpebrarum* and *P. lacrimosus*, but many cases were recorded as uncertain. The morphology of the specimen in this study did not allow identification to species. The worm in this study was morphologically closer to, but smaller than, *P. lacrimosus* previously reported.7 According to our observation, the sizes of the eggs of the worm in this study varied according to their stage of development. The shell of a philophthalmid egg is transparent and flexible, does not tan, according to stage of development; an operculum was not clearly visible. Unsegmented eggs were 65.0 (range, 62.5–67.5) × 25.0 (range, 25.0–27.5) μm, the shell was thick, and an operculum was not seen. Developing eggs were 75.0 (range, 70.0–80.0) × 27.5 (range, 25.0–30.0) μm; the shell was thinner than the unsegmented egg, and an operculum was still not visible. Fully embryonated eggs were 87.5 (range, 77.5–95.0) × 32.5 (range, 27.5–35.0) μm, the miracidium had a one double-cupped eyespot, the shell was thinnest among the three stages, and an operculum was slightly visible. One miracidium was found hatching in the distal part of uterus.

A Philophthalmid fluke that presents in Asia has been recognized as *Philophthalmus gralli*.9 *P. gralli* miracidia had a wider range of hatching capacity under extreme salinity conditions, pH, and temperature than those of *P. megalurus*.10 Self-inseminated single-worm infections occurred at a rate of

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there was an extended asymptomatic period, corresponding to the time needed for the worm to mature. If in that case, transmission could be caused by the metacercaria that accidentally entered the eye. This is the first reported case of human eye infection with a Philophthalmus worm in Thailand, but the second case of trematode infection of the human eye. The first one was caused by the Clinostomum trematode.\(^1\) The clinostomid worm caused both irritation and pain, but the philophthalmid fluke in this paper caused only irritation without pain. The epidemiology of both worms is not clearly understood in Thailand, and further studies are needed.

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