

INTRA-OCULAR GNATHOSTOMIASIS*

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HUMAN infestation by a spiruroid form of nematode *Gnathostoma spinigerum* has been sporadically reported from Thailand, the Philippines, China, Japan, and India. The usual mode of infection is believed to be through ingestion of raw infected fish which acts as an intermediate host in the life cycle of the nematode (Faust, 1949). The actual mode of infection, however, is still undetermined and there is a possibility that the larval form of the nematode enters through the broken surface of the skin (Craig and Faust, 1945).

Man is not the optimum host of the worm and human gnathostomiasis is therefore relatively uncommon, only about fifty cases having been reported since *Gnathostoma spinigerum* was first discovered in 1836 by Sir Richard Owen (Craig and Faust, 1945).

There is no recorded case of human gnathostomiasis in Burma, the general dietetic habits of the population in not eating any raw meat or fish probably precluding a common mode of infection. The presence of *Gnathostoma spinigerum* in Burmese cats and dogs has been occasionally noted, but no proper investigation in this direction has been made, nor has there been any study of the Burmese fish and cyclops which are possibly infected (Lynsdale, 1959).

Intra-ocular parasites occur so rarely that they are legitimately considered as ophthalmological curiosities (Duke-Elder, 1947). Intra-ocular gnathostomiasis is rarer still and the ophthalmic literature on the subject is extremely limited (Sen and Ghose, 1945). The following case may therefore be of interest to ophthalmologists and parasitologists.

Case Report

A healthy Burmese male aged 28 years was admitted to the Rangoon General Hospital on 9.10.58 with pain and loss of vision in the left eye of 2 days' duration. The left eye was found to have the anterior chamber completely filled with blood without any appreciable external congestion. The visual acuity was reduced to perception of light. The right eye was normal.

The patient was a member of the crew of a mooring vessel of the Port of Rangoon. On September 3, 1958, he had sustained an injury over the left eye caused by a 2" steel cable recoiling from an anchor chain. He had been attended to at the Port Clinic on the day of the accident, and small lacerations on the skin over the left superior and inferior

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orbital margins had been dressed. He returned to work the next day feeling perfectly normal. He had no discomfort in the left eye and his eyesight was normal after the accident. The lacerations healed uneventfully within a few days leaving small scars.

On October 3, 1958, the patient felt itching in the scar on the lower orbital margin, and noticed slight swelling and redness of the left lower eyelid. He did not seek medical attention, and the swelling subsided in the course of 2 days.

On October 7, 1958, as he was about to go to bed at night, he felt a sudden sharp pain in the left eye, which was severe enough to keep him awake throughout the night. He attended the Port Clinic the next morning and had some treatment, but the pain persisted and he soon realized that the eye was blind. The next morning, he attended the Clinic again, and was referred to the General Hospital.

As no assessment of the extent of intra-ocular damage from his previous injury could be made through a complete hyphaema, it was considered expedient to withhold surgical intervention. He was given medical treatment on conservative lines and the eye was kept bandaged.

The pain subsided and the hyphaema gradually absorbed. On October 31, 1958, he was able to distinguish large objects at 20 feet with the affected eye. The eye was white, the pupil was fixed at 5 mm, with a film-like blood clot across it, and fundus details could not be seen.

On November 3, 1958, he reported that he had pain in the left eye and that his vision had failed again over the weekend. His left eye was then found to present a frank case of iridocyclitis with exudates in the pupil area and a well-marked hypopyon, and the visual acuity was reduced to vague perception of light. A careful slit-lamp examination revealed a small worm-like structure in the pool of exudates. He was put on local and general treatment for anterior uveitis, and with the absorption of the hypopyon the worm became clearly visible. One end of it was fixed to a mass of exudates in the pupil area and the other end which was weakly mobile (probably due to atropine) was seen to be burrowing into the iris at 3 o'clock. A drop of eserine was applied and 5 minutes later the worm coiled back into the pupil area (Fig. 1).

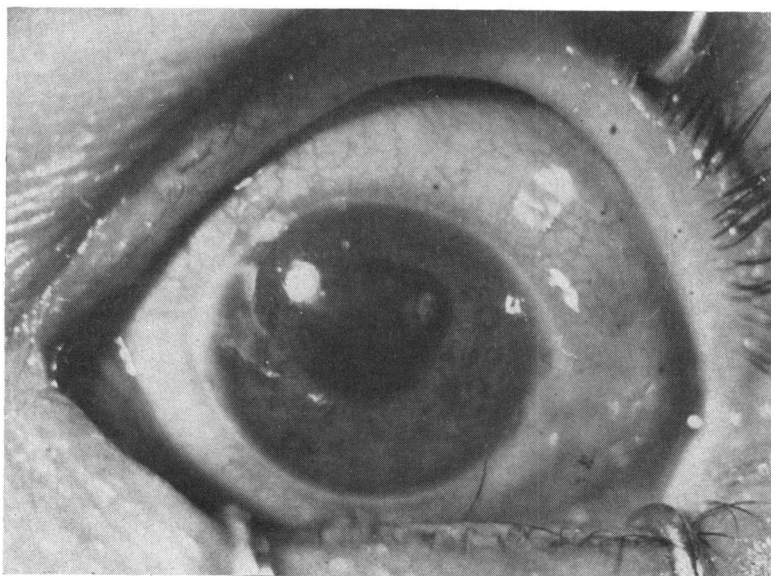


FIG. 1.—*Gnathostoma spinigerum* in the anterior chamber. $\times 40$.

The patient did not give any history of intermittent fever. His skin was clean and healthy, and the small scars on the face near the left eye were not indurated. The erythrocyte sedimentation rate was 20 mm./1st hr, and 30mm./2nd hr. Serological tests for syphilis were negative. Blood tests for microfilaria taken on three successive nights were negative. A differential blood count showed an eosinophilia of 24 per cent. Other investigations revealed nothing of importance.

These findings corroborated the presumption that the worm must be responsible for both the haemorrhagic and the inflammatory episodes in the eye.

Treatment.—After awaiting a surgically opportune moment, the worm was removed through a 5-mm. von Graefe corneal section on November 12, 1958.

The operation was bloodless; immediately after the corneal section, one end of the worm presented in the wound, but the other end however was caught firmly in the exudative mass in the pupil area. This was gently freed with an iris repositor and the whole worm carefully removed. The wound was not sutured; and usual surgical toilet was applied.

Parasite.—The worm, which remained alive for some hours after the operation, was stated by the Department of Bacteriology, Faculty of Medicine, University of Rangoon, to be an immature form of *Gnathostoma spinigerum*. It measured 5 mm. with four rows of cephalic spines (Fig. 2).

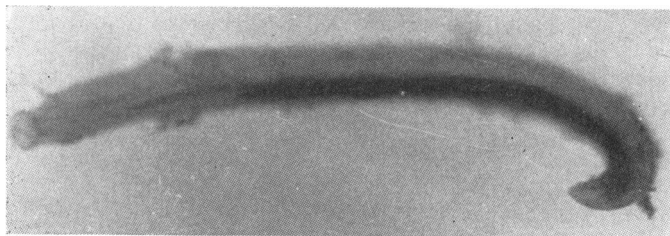


FIG. 2.—Parasite removed from the anterior chamber. $\times 20$.

Result.—The post-operative period was uneventful and the patient was discharged from hospital symptom-free on December 3, 1958. The eye was white, and the pupil dilated and irregular with posterior synechiae at three points, and partially occluded with organized exudates on the anterior surface of the lens. Fundus details were not seen. The visual acuity was counting fingers at 3 feet.

One month later the pupil was much as before, but the exudates on the lens had been partly absorbed and the fundus could be seen hazily. The visual acuity had improved to 6/60.

Summary

A case of intra-ocular haemorrhage and anterior uveitis due to infestation with *Gnathostoma spinigerum* is described.

The absence of classical cutaneous lesions of human gnathostomiasis, and the absence of the disease in the population with similar dietetic habits to those of the patient, strongly suggest the possibility of infection through the lacerated wound of the lower eyelid. The steel cable causing the laceration is constantly dipped in the waters of the River Irrawaddy and Rangoon harbour which are probably contaminated.

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