Short Report

Human intestinal capillariasis: first report from India

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The first documented case of human intestinal capillariasis was reported from the Philippines (CHITWOOD et al., 1968). Subsequently, it has been reported from Thailand, Japan, Taiwan, Iran, Egypt (CROSS, 1992) and the United Arab Emirates (EL HASSAN & MIKHAIL, 1992). This report of the parasite in India indicates that it may have a wider distribution in Asia than suspected earlier.

Case report

A 45 years old clerk from Jamshedpur in central India, with no history of international travel, presented with intermittent abdominal pain, borborygmi, loss of weight (8 kg) and appetite, and generalized weakness for one year. He had not had diarrhoea, nausea or vomiting, but had been treated with mebendazole syrup 100 mg twice a day intermittently, for a total period of 3 months during the previous year. While taking mebendazole, his abdominal pain decreased in frequency and intensity, but it reurred on stopping treatment. He also had bronchial asthma, for which he had swallowed whole raw fish as part of an indigenous medical therapeutic regimen at Puri, a seaside resort and pilgrimage centre, where fish are available both from the sea and from Chilika, a large brackish water lake nearby.

On examination, he was a thin, middle-aged man weighing 42 kg, with no significant finding except bilateral ronchi and a few basal crepitations. Laboratory investigations were normal, except for a low haemoglobin level (9.7 g/dL) and an erythrocyte sedimentation rate of 24 mm at 1 h. Examination of the stool did not reveal any parasites.

Review of a barium meal examination done elsewhere showed diffuse involvement of the small bowel with loss of the normal mucosal pattern, narrowing of the lumen and separation of the bowel loops. Based on these findings a jejunal biopsy was done. The jejunal aspirate showed an adult male Capillaria philippinensis, measuring 2.9 mm with a sheathed spicule 0.3 mm long, a female third stage larva with an oral spear and peanut shaped ova, measuring 0.020-0.021 x 0.041-0.045 mm, bi-embedded with flattened plugs. Some ova were embryonated. The biopsy showed marked villous atrophy, cript effacement, diffuse infiltration of the lamina propria with plasma cells, lymphocytes, eosinophils and polymorphonuclear leucocytes, and invasion by adult worms (Fig. 1). Electron microscopy showed the adult worm in epithelial tunnels but not penetrating the basal lamina. The cells in direct contact with the worm showed evidence of degeneration, with swollen mitochondria and distended rough endoplasmic reticulum (Fig. 2). The morphological identification as C. philippinensis was confirmed by the Liverpool School of Tropical Medicine, UK.

Based on the biopsy and aspirate findings, the patient was treated with 400 mg of thiabendazole 3 times a day for 3 weeks. After completion of the anthelmintic therapy, a second jejunal biopsy showed reversion of the earlier change to normal. No parasite was found in the biopsy, jejunal aspirate or stool at this time.

Discussion

This is the first case report of C. philippinensis from India. Usually, only patients with Capillaria eggs in their stool have the characteristic clinical features of the disease. The fact that this patient did not have diarrhoea, and no egg was seen on stool examination, could be due to his intermittent treatment with an adequate dose of mebendazole.

Human intestinal capillariasis is usually transmitted by consumption of raw fish. This patient did give a history of ingestion of raw fish, although it was not routinely part of his diet.

Pisciculture is being increasingly practised in India and the parasite may have been introduced with fish imported to start fish farms, or by migratory fish-eating birds. With multiple reports of intestinal capillariasis to the east and west of the Indian subcontinent, it seems likely that the parasite has a wide distribution in Asia. Capillariasis should therefore be part of the differential diagnosis of a patient with obscure abdominal symptoms or abnormal intestinal biopsy appearance in India.

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References


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Fig. 1. Jejunal biopsy showing invasion by adult worms (arrows) (x445).

Fig. 2. Electron micrograph of section of jejunum. Adult Capillaria (C) appears to lie in direct contact with an epithelial cell cytoplasm (E) with swollen mitochondria (M) (x8000).