Image Diagnosis: Gastric Migration of Hookworms in a Patient with Anemia

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CASE REPORT

A 65-year-old man presented to our hospital with 4 months of fatigue and weakness. He denied any bleeding manifestations and had pallor on examination. Laboratory test results showed hemoglobin of 8.2 gm/dL with microcytosis and low iron stores. There was no peripheral eosinophilia. Liver and renal function tests were normal. Upper endoscopy was ordered for evaluation of iron deficiency anemia.

The patient's esophagus was normal, but there were motile hookworms in the gastric antrum (Figure 1) and heavy loads of hookworms in the duodenum (Figure 2). His stool examination showed hookworm eggs. The patient received 400 mg of oral albendazole therapy along with iron therapy. At 3-month follow-up, his anemia was corrected, and he was symptom free.

DISCUSSION

Ancylostoma duodenale and *Necator americanus* are the common species of hookworm that attach to the small intestinal mucosa. Some 570 million to 740 million people are estimated to be infected with hookworms worldwide, and infection rates in India range from 16% to 30% of the population.[1-3] Although the majority of the infected population remain asymptomatic, 10% of those infected suffer from anemia,[4] bringing them to medical attention. Infestation impairs the physical, intellectual, and nutritional development of children.[4]

The adult female hookworm releases eggs, which are passed in stool. Rhabditiform larvae are released in soil after hatching and undergo two molts before reaching an infective third-stage filariform larvae. These larvae can survive for 3 to 4 weeks in contaminated soil under favorable climate conditions. They penetrate human skin upon contact and reach the lungs through the heart via blood circulation. Once these larvae penetrate the pulmonary alveoli, they ascend the bronchus to the pharynx. From there they are swallowed and reach the small intestine, where they mature to adult worms.

Adult hookworms inhabit the small intestine and ingest intestinal epithelial and red blood cells, causing iron-deficiency anemia. On average, daily intestinal blood loss is estimated to be between 0.01 mL to 0.3 mL depending on the parasite species.[5] Very rarely, these worms migrate and reach the gastric antrum.[6,7] According to Thomas et al, retrograde jejuno-duodenogastric reflux results in the gastric migration of the hookworms, especially in cases of high worm burden.[8] Treatment includes either a single dose of oral albendazole 400 mg or oral mebendazole 100 mg twice daily for 3 days. Treatment success ranges from 69% to 92% depending on the regimen used.[9] Concomitant iron therapy is necessary to replace lost iron stores.[5] ❖

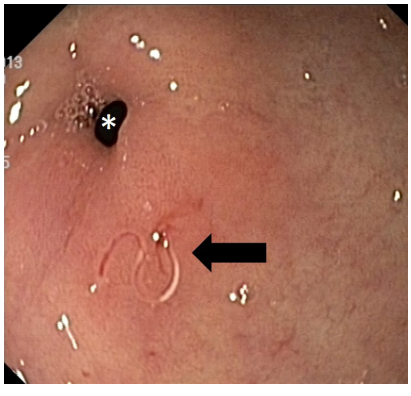

Figure 1. Upper endoscopy of the distal gastric antrum, showing hookworms (black arrow) close to the pylorus (white asterisk).

Figure 2. Upper endoscopy of the duodenum, showing hookworms attached to the duodenal mucosa.

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

How to Cite this Article

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