PARALYTIC ILEUS DUE TO STRONGYLOIDIASIS: CASE REPORT AND REVIEW OF THE LITERATURE

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Abstract. We report a rare case of a patient with ileus due to Strongyloides infection that occurred four times within a six-month period. The ileus was improved by treatment with ivermectin and there has not been a recurrence of the symptoms within the last two years.

Strongyloides stercoralis is an intestinal nematode that is widely distributed in the soil throughout tropical and subtropical areas. Patients infected with this parasite may be asymptomatic or may develop a wide variety of complaints. The common symptoms are abdominal pain, weight loss, diarrhea, nausea, and vomiting. In immunocompromised patients, this parasite may cause a superinfection or a disseminated infection. In this paper we report a rare case of a patient who contracted ileus and whose symptoms recurred four times in a six-month period.

CASE REPORT

A 70-year-old man was admitted to Sawara Hospital with constipation, abdominal pain, and vomiting. He had not lived in or visited an area endemic for S. stercoralis. In December 1994, he visited a local hospital with obstipation, but a barium enema did not show any abnormalities. On February 18, 1995, he was hospitalized at a local hospital due to obstipation, abdominal pain, and vomiting. Ileus was diagnosed and treated conservatively with bowel rest and intravenous fluids. His condition soon improved and he was discharged on February 25; however, the same complaints reappeared and he was referred to our hospital on March 5th. He was treated with bowel rest and intravenous fluids for paralytic ileus, the symptoms disappeared, and he was discharged. On April 3, 1995, he was hospitalized once again at our hospital, and it was at this time that ileus reappeared for the fourth time. The patient was then readmitted on May 16, 1995.

The patient was 163 cm tall and weighed 53.5 kg. The head and neck were normal. No lymphadenopathy was found. The lungs were clear and the heart was normal. The abdomen was flat and bowel sounds were present, and there was diffuse abdominal tenderness, without guarding or rebound tenderness. The liver and spleen were not palpated. No peripheral edema was noted.

Stools tested for occult blood were negative. The hemoglobin level was 11.3 mg/dL, the white blood cell count was 9,200/μl, with 71% neutrophils, 1% bands, 4% eosinophils, 17% lymphocytes, and 5% monocytes, and the platelet count was 233,000/μL. The erythrocyte sedimentation rate was 50 m/hr. The C-reactive protein level was 0.1 mg/dL and the human T cell lymphotropic virus type-1 (HTLV-1) antibody titer was 512. Results of other studies, including blood chemistries, were all within normal limits. An abdominal radiograph demonstrated a marked air fluid level in the intestine (Figure 1) and a small bowel series showed atrophy and loss of intestinal fold and dilatation of the viscera. Gastrointestinal symptoms were all within normal limits. An abdominal radiograph demonstrated a marked air fluid level in the intestine (Figure 1) and a small bowel series showed atrophy and loss of intestinal fold and dilatation of the viscera. Gastrointestinal symptoms were all within normal limits.

DISCUSSION

Strongyloidiasis is an enteric infection of the soil-transmitted nematode S. stercoralis. It is widely distributed throughout the tropics and subtropics. The life cycle is very complicated. Larval larvae penetrate the skin and enter into various systems via a vein or the lymphatics. They transfer to the lungs and penetrate through the alveolae and migrate up the trachea to the pharynx and are then swallowed. The larvae then make their way into the mucosa of the duodenum and proximal jejunum where they become adult females and can produce approximately 40 eggs a day by mitotic parthenogenesis. These eggs hatch to release rhabditiform larvae that enter the bowel lumen and leave the human via the stool, thus continuing the soil-based cycle. Some larvae, especially when intestinal transit is prolonged, can metamorphose into larval larvae in the gastrointestinal tract and penetrate the colon or perianal skin (autoinfection). This specific life cycle can create a long-term carrier, such as a case of a veteran who developed a strongyloidiasis infection approximately 15 years after returning from Vietnam.

Approximately half of S. stercoralis infections are asymptomatic. Diarrhea, abdominal pain, nausea, and vomiting are common gastrointestinal symptoms. These symptoms may be attributed to enteritis, and widely dispersed strongyloidiasis intestinal infection may cause paralytic ileus, as was seen in this patient. Pulmonary symptoms are less common and include cough, wheezing, chest pain, and dyspnea.
and is strong clinical evidence of *Strongyloides* infection. Peripheral eosinophilia is the most common hematologic feature. Hypoalbuminemia is not uncommon, particularly in a severe case. Radiographic findings of the abdomen are nonspecific, but in a severe case may include thickened walls and dilated loops of the small bowel that mimic a small bowel obstruction. Endoscopic examination of the upper gastrointestinal tract may show a hemorrhage, edema, or erosion of the mucosa.

Generally, a diagnosis of *Strongyloides stercoralis* infection can be made by direct fecal smear because this examination is quite easy and to perform quick. The diagnostic yield for a single stool specimen is approximately 30%. This improves to about 60% when more than five specimens are examined. Stool culture techniques are more sensitive in detecting the parasite. When the agar plate culture method was used, more than 96% of the positive cases were diagnosed.

The drug of choice for treatment of strongyloidiasis is thiabendazole given at a dose of 25 mg/kg of body weight twice a day for at least three days; in the case of hyperinfection for 5–7 days. This drug is effective in eradicating *S. stercoralis* at a cure rate greater than 90%. However, a high frequency of adverse effects, such as disorientation, fatigue, nausea, anorexia, and abdominal pain, can interfere with prescription compliance. Ivermectin given at a dose of 150 μg/kg of body weight either singly or as two doses up to two weeks apart is equivalent to thiabendazole in
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FIGURE 2. Duodenal biopsy of the patient showing Strongyloides larvae in the mucosa (magnification × 200).

efficacy and has a much lower frequency of adverse effects.11,12

This patient had not visited or lived in an area endemic for S. stercoralis, which is particularly prevalent in the southwest islands and southern part of Kyushu Japan. We have considered the possibility that there is some endemic area that has not yet been reported.

The prevalence of S. stercoralis is significantly higher in HTLV-1 carriers than HTLV-1 noncarriers in Japan.13 This patient was HTLV-1 positive and since cellular immunity is a major part of a host’s defense to Strongyloides, the HTLV-1 infection may have changed the immune system of this patient and caused the severe clinical manifestations mentioned above. Hypereosinophilia, which is common in cases of mild strongyloidiasis, was not seen in this patient. The HTLV-1 infection may have inhibited an eosinophilic reaction to this parasite. Generally, normo- and hypoeosinophilia, which are often seen in HTLV-1-positive patients, seem to be associated with severe infections.14

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