

Strongyloides Infection Presenting as Proximal Small Intestinal Obstruction

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ABSTRACT

Duodenal obstruction is an infrequent but potentially fatal complication of strongyloidiasis infection. *Strongyloides stercoralis* can clinically manifest in a broad variety of ways and lacks a classic clinical syndrome, which makes the diagnosis of strongyloidiasis difficult. The diagnosis is usually delayed and made by duodenal aspirate, duodenal biopsy, and/or postoperative biopsy specimen of the resection stricture segment. We present a case of partial duodenal obstruction caused by *S. stercoralis*. A 46-year-old man had presented with repeated bilious vomiting for 12 days. Upper gastrointestinal endoscopy showed ulceronodular mucosa with luminal compromise at the second part of the duodenum. Abdominal computed tomography scan also showed a wall thickening with luminal narrowing of the second and third part of the duodenum. Duodenal mucosal biopsy revealed larval forms of *S. stercoralis*.

INTRODUCTION

Strongyloides stercoralis infection, which is commonly seen in tropical and subtropical areas of the world, is usually asymptomatic in immunocompetent individuals and can sometimes present with nonspecific gastrointestinal (GI) manifestations.¹ However, in immunodeficient patients, it can lead to disseminated disease with multiple systems involvement, which is usually associated with high mortality rates.^{2,3} We report a case of a 46-year-old man who presented with a history of repeated bilious vomiting with duodenal obstruction.

CASE REPORT

A 46-year-old man from eastern India presented with bilious vomiting for 12 days, with a frequency of 3–4 per day without any abdominal distention, pain in the abdomen, fever, constipation, or loose stools. The patient did not have any history of similar illness. There is a history of intake of prednisolone (40 mg/d) for a period of 2 weeks before the present illness for the treatment of lichen planus. General physical examination was unremarkable, except for signs of dehydration and purple, polygon-shaped skin lesions over both legs (Figure 1). Systemic examinations did not reveal any abnormality. The patient was initially resuscitated with intravenous normal saline and lactated ringers solution along with ondansetron. The patient was advised a clear liquid diet, which he was able to tolerate suggesting that the obstruction was partial. On investigation, complete blood count, serum urea, and creatinine were within normal limits. Serum electrolytes revealed hyponatremia (128 mmol/L) and hypokalemia (3.3 mmol/L). Liver function test was normal, except for hypoalbuminemia (3 g/dL). C-reactive protein was elevated (77.6 mg/L). Upper GI endoscopy revealed ulceronodular and infiltrative lesion over the second and third part of the duodenum, with significant luminal narrowing (Figure 2). Multiple biopsies were taken, and CECT abdomen was done to rule out any malignancy. Computed tomography scan showed a circumferential wall thickening of the second and third part of the duodenum with narrowing and adjacent insignificant perileisional lymphnodes enlargement (Figure 3). Histopathology of the involved mucosa revealed mixed inflammatory infiltrate over the



Figure 1. Purple, polygon-shaped lichen planus skin lesions over both legs.

lamina propria and surprisingly larval forms of *S. stercoralis* (Figure 4). Moreover, the stool routine and microscopy examination ordered after the biopsy report also showed plenty of *Strongyloides* larvae.

The patient was treated with a single dose of 12 mg of ivermectin tablet, with an advice to repeat the dose after 2 weeks. After 24 hours, the patient was able to tolerate liquid diet along with marked improvement in general well-being. His C-reactive protein decreased to 11.5 mg/L after 3 days of ivermectin intake. He was discharged and advised for a follow-up after 4 weeks. The patient was completely asymptomatic and gained 4 kg of body weight in 8 weeks. Repeat upper GI endoscopy to assess the mucosal healing after 8 weeks of discharge revealed minimally nodular mucosa without any

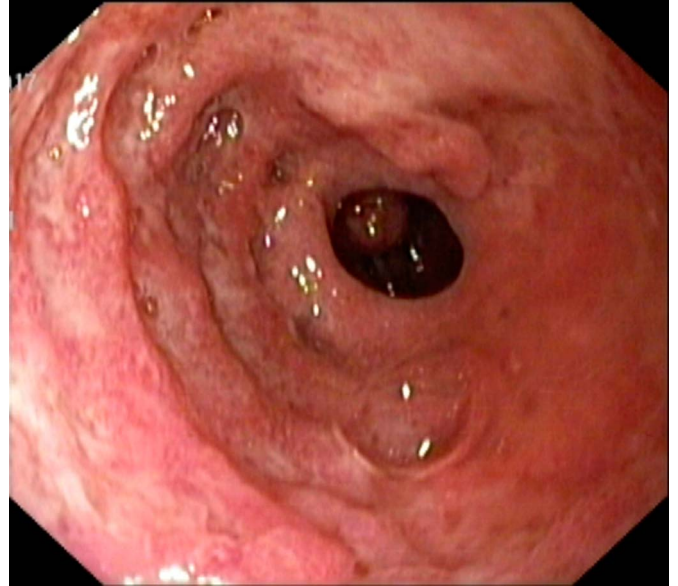


Figure 2. Upper gastrointestinal endoscopy showing ulceronodular and infiltrative lesion of the duodenum.

ulceration (Figure 5). The gastroscope could be negotiated beyond the involved segment to D4.

DISCUSSION

Strongyloidiasis is often considered to be an exotic disease that occurs primarily in the tropics or under unusual predisposing

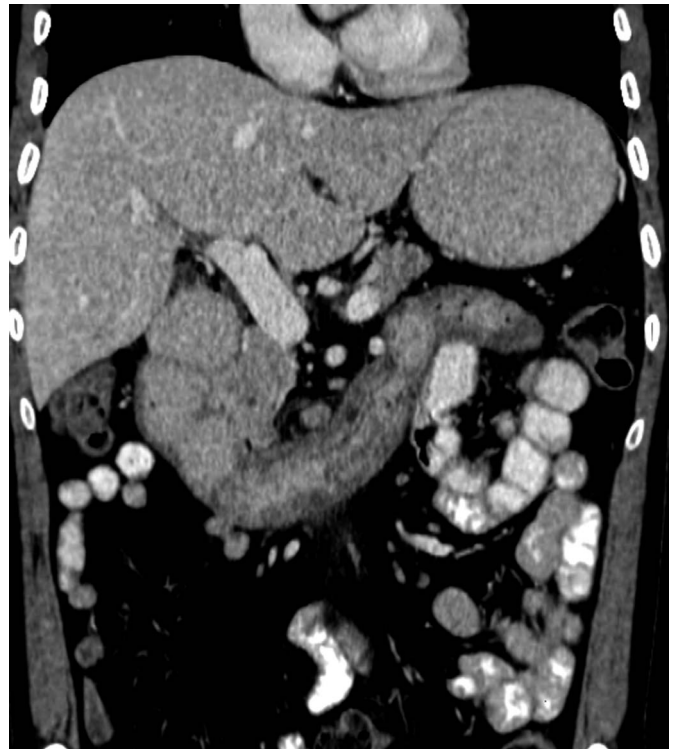


Figure 3. Abdominal contrast-enhanced computed tomography showing duodenal wall thickening and stricture.

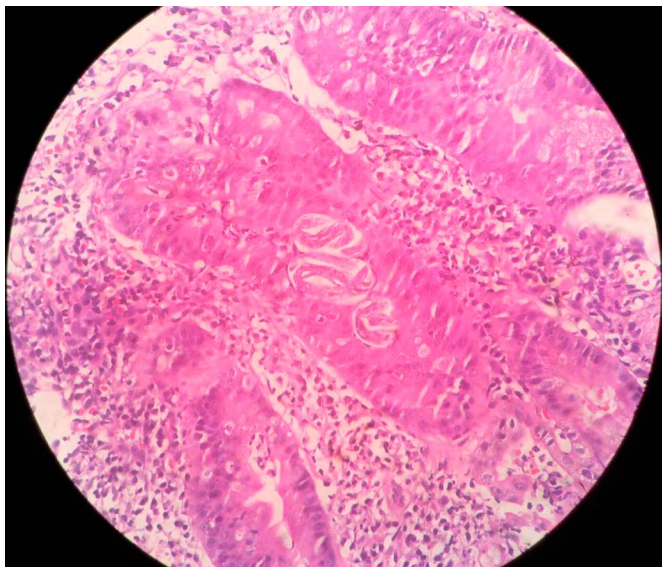


Figure 4. Histopathology of the duodenal mucosa showing mixed inflammatory infiltrate over the lamina propria and surprisingly larval forms of *S. stercoralis*.

host conditions. While the parasite burden remains balanced, symptoms are minimal or absent. Immunosuppression or glucocorticoid administration upsets this balance, with the result that previously asymptomatic but chronically infested patients develop fulminant, potentially fatal strongyloidiasis from massive autoinfection.³ The small intestine, particularly the duodenum and upper jejunum, is the major site of action of the parasite.⁴ Massive autoinfection produces disseminated fulminant strongyloidiasis, with injury to the intestinal mucosa leading to polymicrobial sepsis, pneumonitis and meningitis.⁴⁻⁶ Intestinal strongyloides usually present with small bowel diarrhea with malabsorption.⁷

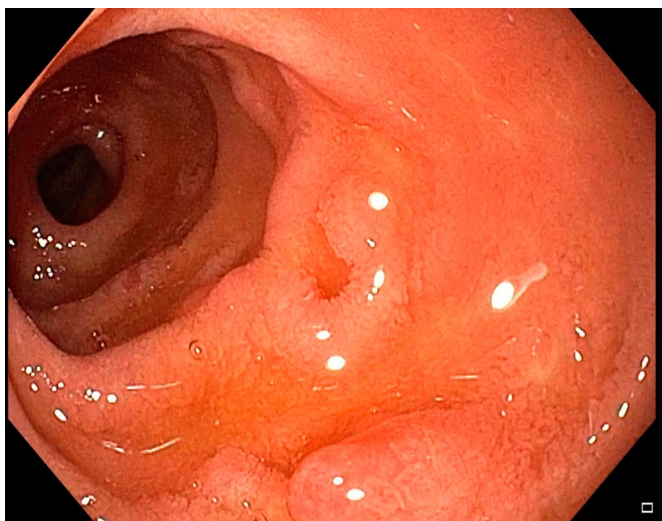


Figure 5. Follow-up endoscopy at 8 weeks showing minimally nodular mucosa without any ulceration.

Our patient was diagnosed quite early and responded to anti-helminthic, unlike the other cases reported earlier where the diagnosis is delayed and is sometimes on the basis of post-operative biopsy.⁸⁻¹⁰ The initial disproportionately high C-reactive protein can be explained by sepsis due to bacterial translocation because of duodenal mucosal barrier dysfunction. This explains the quick improvement after empirical antibiotics. Duodenal strongyloides with only vomiting as the sole presentation is extremely rare, and there are only a few isolated case reports worldwide.⁸⁻¹⁰ In a recent review by Cruz et al, 9 cases were analyzed from 1970 to 2010, of which 3 patients were diagnosed on the basis of the histopathologic study of postoperative biopsy specimen.¹¹ The other tests used for the confirmation were duodenal aspirate and duodenal mucosal biopsy. Hence, an early diagnosis and treatment can help in avoiding surgery.

DISCLOSURES

Author contributions: AA Patra and P. Nath wrote the manuscript and performed the literature review. GK Pati, SC Panigrahi, B. Mallick, JCK Acharya, and A. Adhya edited the manuscript. P. Nath is the article guarantor.

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