

Colonic Perforation Secondary to *Entamoeba histolytica* Infection: A Case Report

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ABSTRACT

Background: Fulminant amebic colitis is an uncommon, life-threatening manifestation of *Entamoeba histolytica* infection. Because its clinical and radiologic features overlap with appendicitis, diverticulitis, inflammatory bowel disease, ischemia, and colorectal malignancy, diagnosis may be delayed until surgery or histopathologic examination.

Case presentation: A 42-year-old man without relevant medical history developed sudden colicky and pressure-like right iliac fossa pain. Symptoms partially improved after unspecified analgesic and antimicrobial treatment, but recurred 15 days later with nausea and vomiting. On 1 November 2022, he was evaluated for an acute abdomen. Computed tomography suggested acute appendiceal disease and showed sigmoid diverticular and inflammatory-appearing mesenteric lymph nodes. Emergency exploratory laparotomy revealed a small amount of purulent intraperitoneal fluid and a pelvic inflammatory mass involving the sigmoid colon and cecum, associated with a 12 × 8 × 2 cm indurated lesion above the rectosigmoid junction. Sigmoidectomy, appendectomy, and end-to-end colorectal anastomosis were performed. Histopathology demonstrated intense acute inflammation with chronic granulomatous inflammation, multinucleated foreign-body-type giant cells, and microscopic structures compatible with amoebae. The patient completed seven days of postoperative inpatient observation, graduating later without complications.

Conclusion: Amebic colitis should remain in the differential diagnosis of a colonic inflammatory mass or perforation in endemic settings. Early recognition, parasite-directed therapy, and prompt source control are essential. Histopathologic examination may establish the diagnosis when the preoperative presentation is nonspecific.

KEYWORDS: amebic colitis; amoebiasis; colonic perforation; *Entamoeba histolytica*; emergency surgery.

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INTRODUCTION

Amoebiasis is caused by the protozoan *Entamoeba histolytica* and is transmitted predominantly through ingestion of mature cysts in fecally contaminated food or water. Most infections are asymptomatic, but invasive intestinal disease may produce abdominal pain, diarrhea or dysentery, and ulcerative colitis. In its most severe form, fulminant amebic colitis may progress rapidly to transmural necrosis, hemorrhage, toxic megacolon, peritonitis, and bowel perforation.¹⁻³

The diagnosis is difficult because the clinical, endoscopic, and radiologic findings are not specific and may resemble

inflammatory bowel disease, ischemic or infectious colitis, appendicitis, diverticulitis, or colorectal cancer. Contemporary reviews support species-specific stool polymerase chain reaction as the preferred diagnostic test where available; antigen detection and serology can provide complementary evidence, whereas microscopy alone cannot reliably distinguish *E. histolytica* from nonpathogenic *Entamoeba* species.^{1,4,5} In patients requiring emergency surgery, histopathology may provide the first definitive evidence of invasive disease.

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Fulminant disease is rare but carries substantial mortality, particularly when diagnosis and antiamebic treatment are delayed.^{2,3,6} We report colonic perforation associated with *E. histolytica* in an otherwise healthy adult whose initial findings mimicked appendiceal and sigmoid disease.

CASE PRESENTATION

Patient information and clinical course

A 42-year-old man with no relevant medical history developed sudden-onset colicky and pressure-like abdominal pain localized to the right iliac fossa on 17 October 2022. He reported no clear aggravating or relieving factors. He took unspecified analgesics and antibiotics, with partial improvement for approximately 15 days. After completing that treatment, the pain worsened and was accompanied by nausea and vomiting.

On 1 November 2022, the General Surgery team evaluated the patient and documented an acute abdomen.

Abdominal computed tomography was interpreted as suggestive of an acute appendiceal process; sigmoid diverticular and mesenteric lymph nodes with an inflammatory appearance were also described. The presentation and imaging supported urgent operative exploration, but they did not identify amebiasis preoperatively.



Figure 1. Coronal abdominal computed tomography.

Emergency exploratory laparotomy was performed. Operative findings included a small amount of purulent free intraperitoneal fluid and a pelvic inflammatory mass involving the sigmoid colon and cecum. An indurated 12 × 8 × 2 cm tumor-like lesion was located above the rectosigmoid junction; no paracecal or intermediate lymph nodes were identified. Sigmoidectomy, appendectomy, and end-to-end colorectal anastomosis were completed.



Figure 2. Operative specimen showing the inflammatory, tumor-like colonic lesion. Histopathologic examination subsequently identified structures compatible with amebae.

The patient remained hospitalized for seven days for postoperative monitoring, impregnation with a double antibiotic based on meropenem and metronidazole, and was discharged on the eighth day without complications.

DISCUSSION

This case illustrates three clinically important features of invasive intestinal amoebiasis: a nonspecific presentation, a tumor-like inflammatory lesion involving more than one colonic region, and diagnosis established only after resection. *E. histolytica* preferentially affects the cecum and ascending colon but may involve any colonic segment. Flask-shaped ulcers can extend through the bowel wall; severe inflammation, vascular injury, and tissue necrosis may culminate in perforation and peritonitis.^{1,3,8}

The differential diagnosis was broad. Right iliac fossa pain and the computed tomography interpretation favored appendiceal disease, while sigmoid diverticular and the indurated rectosigmoid lesion raised the possibilities of complicated diverticulitis or malignancy. Amebomas localized, mass forming granulomatous reactions to amebic infection may mimic colorectal carcinoma. Histologic recognition of trophozoites, particularly organisms containing ingested erythrocytes, strongly supports invasive *E. histolytica*; periodic acid Schiff staining or species-specific molecular testing may assist when morphology is equivocal.^{1,4,9}

Current diagnostic practice emphasizes species specific testing. Stool PCR offers the greatest ability to differentiate *E. histolytica* from morphologically identical nonpathogenic species; stool antigen testing is an alternative where molecular methods are unavailable. Serology is particularly

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useful for extraintestinal disease but may remain positive after previous infection. Endoscopy can demonstrate discrete ulcers and permit biopsy in stable patients, but it should not delay source control in perforation or generalized peritonitis.^{1,4,5}

Treatment of invasive amebiasis requires a tissue-active nitroimidazole, usually metronidazole or tinidazole, followed by a luminal agent such as paromomycin or iodoquinol to eradicate intraluminal cysts.^{1,5,10} Fulminant colitis additionally requires resuscitation, broad spectrum antibacterial coverage when perforation is present, and urgent surgical source control. The optimal operation depends on disease extent and physiologic status. Recent reports commonly favor resection of nonviable or perforated bowel with diversion when contamination, friability, or hemodynamic instability makes primary anastomosis hazardous.^{2,3,6,11} In this patient, segmental resection with primary colorectal anastomosis was successful during the reported seven-day hospitalization.

CONCLUSION

Colonic perforation due to invasive amoebiasis is uncommon but potentially fatal. In endemic settings, clinicians should consider *E. histolytica* when an inflammatory colonic mass, atypical appendiceal process, or unexplained perforation is encountered. Prompt source control, tissue active antiamebic therapy followed by a luminal agent, and careful histopathologic assessment are central to management. This case also underscores the importance of preserving surgical specimens and obtaining targeted parasite testing when preoperative findings are nonspecific.

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