Amoebic Colitis Presenting as Colonic Perforation with Peritonitis

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Background	An 80-year-old male patient presented to the emergency department with complaints of abdominal pain with distension and obstipation that began two days prior to presentation.
Summary	The patient presented with sudden-onset pain in the abdomen and no passage of stool or flatus for two days. Clinical findings of peritonitis prompted rapid resuscitation and preparation for operation. Laparotomy via a midline vertical incision was performed. Generalized peritonitis with perforation of the right colon near the cecum was discovered. Right hemicolectomy with diverting ileostomy was performed. Peritoneal irrigation was done. Pathologic examination revealed ameboma with perforation.
Conclusion	Amoebiasis and its complications continue to be a public health problem in developing countries. Cecal perforation may spread to the appendix and lead to gangrenous appendicitis, and these patients should receive intensive medical and surgical management. Even with aggressive management, these patients have poor prognoses. Resection with exteriorization of the bowel is the current recommended treatment in such cases.
Keywords	Amoebiasis, colon, perforation peritonitis, laparotomy

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Case Description

Amoebiasis is a parasitic infection caused by *Entamoeba histolytica (E. histolytica)*. This infection afflicts 10 percent of the world's population.[1] The colon and liver are the principal organs affected in amoebiasis.[2] The incidence of this condition is higher in developing and third-world countries, where general levels of health are lower, and where potable water is not always available.[3] *E. histolytica* invades the host tissue in its trophozoite form and destroys the tissue by secreting proteins and capturing red blood cells; these actions lead to the most frequent clinical presentation of amebiasis (amebic dysentery or amebic colitis). Amoebiasis can also appear as necrotic colitis, toxic megacolon, ulceration, perianal fistulas, and visceral perforation. Invasive intestinal amoebiasis presenting as cecal perforation is a rare entity and is associated with high mortality;[4-6] this case report describes one such rare case, where the patient presented with a fulminant colitis and colonic perforation.

An 80-year-old male presented to the emergency department with abdominal distension and obstipation for two days. On examination, the patient was hypotensive with tachycardia (B.P 100/60 mmHg; pulse 104/min). Abdominal examination revealed a distended abdomen with tenderness and guarding in the right side (Figure 1). Chest X ray showed sub-diaphragmatic free air; ultrasound showed intraperitoneal free fluid. Percutaneous aspiration of abdominal fluid showed bile staining (Figure 2). Preoperative diagnosis of peptic ulcer perforation was suspected, and, after initial stabilization, the patient was taken for exploratory laparotomy. Intraoperative finding showed peritonitis with perforation of the cecum, as well as the anterior and posterior wall of the ascending colon, as shown in Figure 3 and Figure 4.

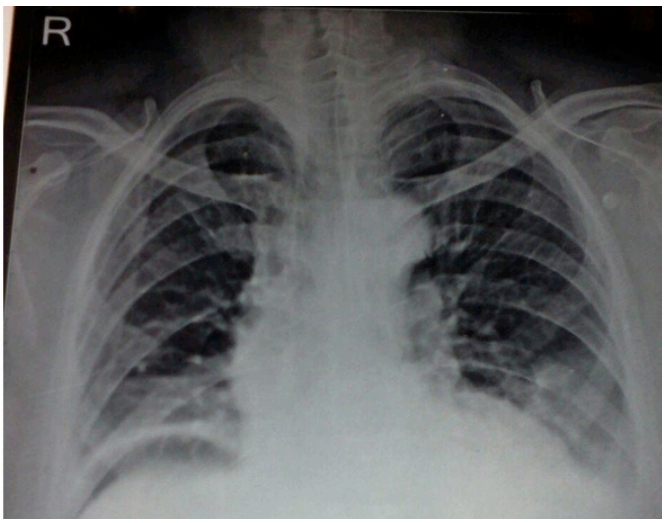

Figure 1. Abdominal radiograph showing gas under right hemidiaphragm

Figure 2. Bile-stained fluid aspirated preoperatively

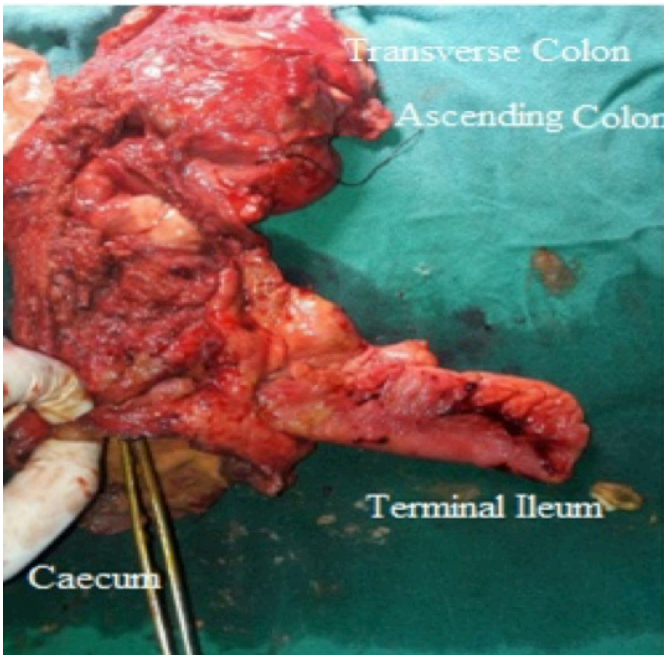

Figure 3. Resected specimen with perforated cecum

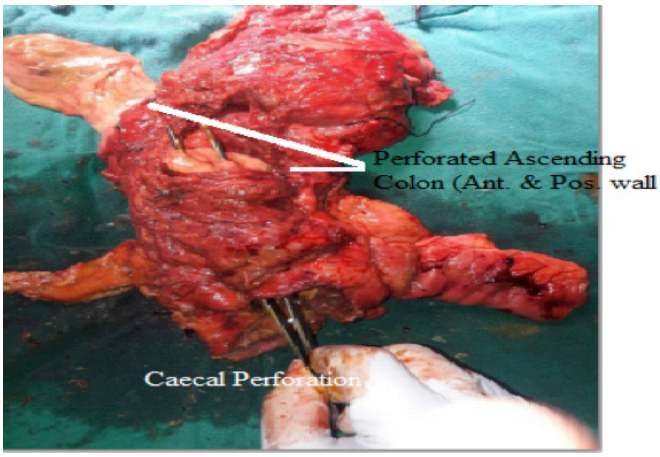

Figure 4. Resected specimen showing perforation of anterior and posterior ascending colon

In view of the operative findings, right hemicolectomy was done with proximal temporary end ileostomy and a distal transverse mucus fistula was created. Postoperatively, the patient was kept in the intensive care unit, and with clinical improvement he was transferred to a surgery ward. By the fourth day, the ileostomy was functioning well and oral intake was begun and slowly increased over subsequent days. Midline wound infection developed and was managed with appropriate antibiotics and dressings. The pathology report showed amoebic typhilitis with formation of ameboma, deep ulceration and serositis. The patient was treated for invasive amoebiasis. Figure 5 shows a representative microscopic view documenting amoebic colitis.

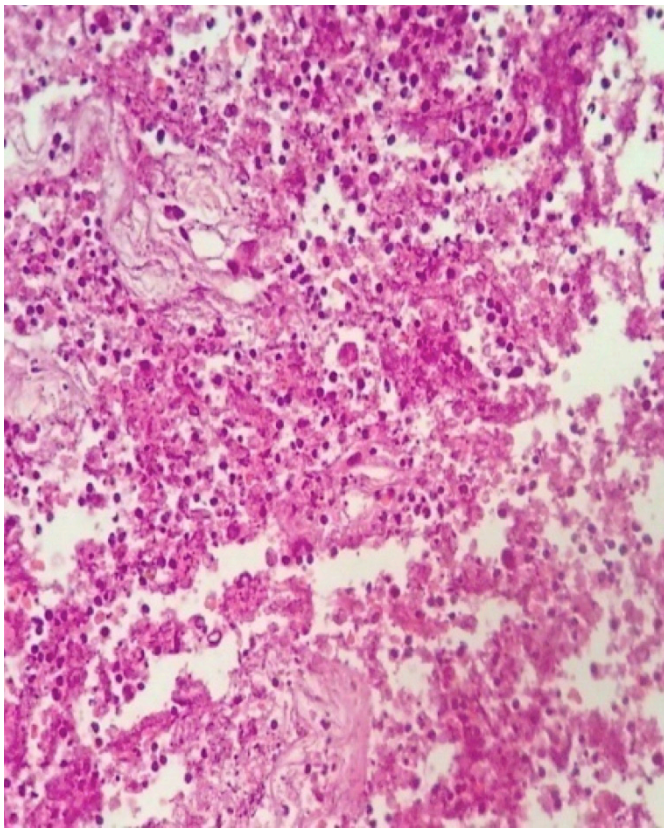

Figure 5. Histopathology showing features of amoebic colitis

Discussion

Amoebiasis may range clinically from an asymptomatic carrier state to fulminant colitis and colonic perforation.[7, 8] *E. histolytica* infections that cause amoebiasis begin with ingestion of water contaminated with fecal matter containing cysts of the amoeba.[9] Trophozoites of the amoeba are released into the lumen of the gastrointestinal tract, where they rapidly clone themselves, leading to formation of new cysts that are excreted in the feces.[10] The infection can be located in any part of the intestine, but it is most often found in the cecum and in the ascending colon, as in our case.[11] The majority of patients can be managed medically, but a small percentage of patients that have peritonitis require urgent exploration and resection with an associated high mortality rate. About 4 to 10 percent of asymptomatic carriers eventually develop invasive disease.[12] Very uncommonly, this disease takes a fulminant course due to the development of necrotizing amoebic colitis; this condition carries a mortality ranging from 55 to 100 percent.[13] Occasionally, patients present with tachycardia, hypotension, and peritonitis due to colonic perforation, and urgent intervention is necessary, as in our case study. Fulminant colitis, which is a known variant of amoebic colitis, develops rapidly and presents with features of acute abdomen and loose stools.[14] Various risk factors including male gender, increased age, leukocytosis, electrolyte disturbances, and hypoalbuminemia, are associated with the development of fulminant amoebic colitis in patients who have invasive intestinal amoebiasis. Intraoperatively, the fulminating colitis presents as an inflamed, extremely friable colon with underlying full-thickness necrosis and perforation. The colon may be so friable that it can disintegrate with any form of manipulation. Resection of the necrotic colon is the treatment of choice. There is a high risk of suture breakdown in tissue containing amoebae, and exteriorization of the bowel rather than repair is recommended. Despite aggressive surgery, a retrospective analysis of 55 patients with fulminant amoebic colitis was associated with a mortality rate of 89 percent, although in our case, the patient survived and was discharged in a stable state.[15, 16]

Conclusion

Amoebiasis and its complications continue to be a public health problem in developing countries. Cecal perforation may spread to the appendix and lead to gangrenous appendicitis and/or colonic perforation.

Lessons Learned

Even with aggressive management, patients with perforated colon as a result of amoebiasis have a poor prognosis. Resection of diseased segment of colon with exteriorization of bowel is the current gold standard treatment in such cases.

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