

Case Report

Acute gangrenous colitis: a surgical dilemma

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ABSTRACT

Acute gangrenous colitis is a rare entity in children. Amoebic colitis and ischemic colitis are two common causes in children. We present the case of a 7-year-old boy who developed gangrene of caecum and ascending colon and underwent exploratory laparotomy and re-exploration and stomas had to be done. The cause of gangrene remained undiagnosed.

Keywords: Colonic, Gangrene, Child

INTRODUCTION

Acute gangrenous colitis is a rare entity. Rarely, fulminant necrotising amoebic colitis (FnAC) can lead to colonic gangrene.¹ In such a scenario, the mortality is very high reaching 55% to 100%, especially if the diagnosis and treatment are delayed. Ischemic colitis is another known cause of bowel gangrene, but it is most often seen in adults with co-morbidities.²

CASE REPORT

A 7-year-old boy was referred with the history of fever since 7 days and pain in abdomen since 3 days. The fever was high grade, on and off and responding partially to medications (antibiotics and anti-pyretics).

On examination, patient was afebrile, pale and had a tachycardia of 110/min. Per abdomen examination revealed severe tenderness and guarding in right iliac fossa region. Rest of the quadrants of abdomen were soft.

An ultrasound of abdomen done in the nursing home revealed the presence of multiple matted tender small bowel loops in both iliac fossa regions with presence of

minimal inter-bowel fluid. There was also presence of enlarged mesenteric lymph nodes.

An erect radiograph of abdomen showed absent bowel gases in right lower quadrant and 4-5 air-fluid levels in right lumbar region. There was no evidence of free gas under diaphragm.

Patient's haemoglobin was 9.5 g% and total leukocyte count was 9500. Platelet levels were normal. Renal function tests were also normal. Blood culture done at the nursing home had isolated *Salmonella typhi* and the widal test showed a titre of 1:160.

On clinical evaluation of patient, decision was taken to do urgent diagnostic laparoscopy. On laparoscopy, a segment of caecum was seen to be gangrenous with perforation visualised near the base of the appendix. Hence, in view of these findings, a decision was taken to convert to an exploratory laparotomy.

The abdomen was explored via a right transverse infra-umbilical incision. A part of the caecal wall as well as the ascending colon was found to be gangrenous with necrotic patches (Figure 1). A 0.5x0.5cm perforation was also seen on the anterior wall of the caecum near the base of the

appendix. The rest of the ascending colon was inflamed. A right hemicolectomy was done with ileo-transverse anastomosis. The patient was kept NBM till post-operative day 5 and gradually liquids and solid diet was started by post-operative day 7. On post-operative day 8, patient developed a burst abdomen. He was re-explored and an anastomotic leak was found. The colonic side of the anastomosis was found to be inflamed again. There were no obvious ulcerations visible. The edges of the bowel were resected and an end ileostomy in right lower quadrant and transverse colon mucous fistula in epigastric region were fashioned. Patient was gradually started oral diet and was discharged on full diet on post-operative day 4. Patient will be planned for stoma closure after 3 months after confirming presence of a normal distal colon with colonoscopy.



Figure 1: Gangrene of caecum and ascending colon.

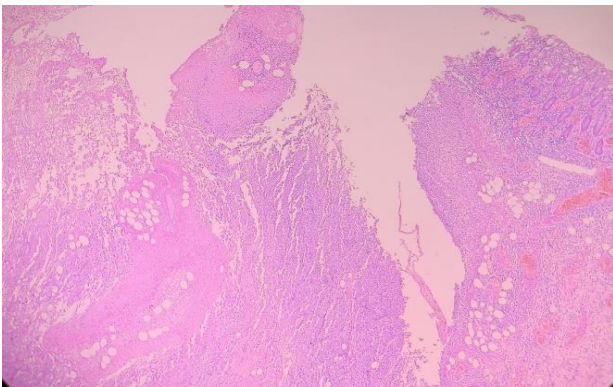


Figure 2: Microscopy showing ulceration and transmural neutrophilic infiltration.

Histopathology of resected specimen on gross examination showed mucosa of caecum and proximal ascending colon with large areas of ulceration, greenish brown discolouration and focally polypoidal. Rest of the ascending colon also showed patchy ulcerations. On microscopy, multiple sections studied showed large areas of ulceration involving cecum and ascending colon, covered by necrotic slough, neutrophilic exudates and devitalized tissue. Bowel wall showed dense transmural neutrophilic infiltrate, areas of necrosis, neutrophilic abscess formation and congested varying sized blood

vessels, occasional showing fibrin thrombi in the lumen (Figure 2).

DISCUSSION

Acute gangrenous colitis is a dreaded complication of colitis, having a high incidence of mortality, irrespective of the cause. In most cases, amoebiasis is asymptomatic (90%). In the paediatric age group, amoebic colitis can turn fulminant causing necrosis and gangrene of colon with perforation peritonitis and even death. This condition is called fulminant necrotising amoebic colitis (FnAC) and is very rare.³ Patient can have abdominal pain with distension, peritonitis with sepsis and high grade fever, accompanied by watery or bloody diarrhoea and dehydration. Histopathological examination of colon in this case reveals transmural inflammation with large areas of necrosis with a large number of trophozoites among the inflammatory exudates.⁴

Ischemic colitis occurs from a vascular insult to the blood supply of the colon. The condition is most commonly seen in older patients with cardiovascular comorbidities like atherosclerosis. Presentation of patient can range from colicky abdominal pain to sepsis and peritonitis, depending on whether the bowel is mildly inflamed or completely necrotic. Treatment depends on the underlying cause. Surgical management can range from colonoscopy to bowel resection.⁵

Typhoid fever related intestinal complications are also rare. Typhoid perforations occur in 0.8% to 3.9% of cases of enteric fever with the most common site being ileum.^{6,7} Caecal perforations have an incidence of 0.05% to 3% of all typhoid perforations, being even more rare.⁸ Gall bladder gangrene with perforation is also a rare sequelae of typhoid fever.⁹

CONCLUSION

Clinically and histologically, our patient does not fit into any of the above relatively common conditions which can cause acute gangrenous colitis. Amoebic colitis seems to be the most common cause, but lack of trophozoites on histopathology makes the diagnosis unlikely. The patient did not have any history of chronic diarrhoea suggestive of amoebiasis. The patient's Widal titres were 1:160, which is borderline. Caecal gangrene in typhoid fever has not been reported in literature till date. Ischemic colitis is generally seen in neonates or in elderly people with comorbidities. It is generally not seen in children. Considering the above points, we can narrow down to a probable diagnosis of fulminant amoebic colitis leading to colonic gangrene as the patient was from a low socio-economic status and amoebiasis is quite common in this section of society in our country.

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