

Spontaneous Sigmoid Perforation Presenting As Intestinal Obstruction In A Paraplegic Patient – A Rare Case Report

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Abstract: Spontaneous perforation of the colon should be considered in the differential diagnosis of patients with acute peritonitis. The idiopathic type is less common than stercoral type, but the prognosis is better in idiopathic type because of the minimal degree of fecal contamination. Intestinal obstruction can also be a presentation of idiopathic perforation colon especially in chronic constipated, bed ridden, paraplegic patient. The diagnosis can be delayed but early surgical intervention is important in order to reduce morbidity and mortality. Though early aggressive surgery has been advocated to reduce mortality but such decision should be situation dependent.

Key words: Spontaneous Perforation; Stercoral Perforation; Idiopathic Perforation; Management

I. Introduction

Spontaneous perforation of colon is a rare condition. J.a. berry classified spontaneous perforation into “stercoral” and “idiopathic”¹. Stercoral perforations are rupture of intestinal wall due to intestinal contents, while idiopathic perforations are due to unknown cause. Both entities are infrequently diagnosed preoperatively and are associated with high mortality rate. These perforations usually present with severe pain abdomen due to peritonitis, but sometime these cases may present as intestinal obstruction. A high degree of suspicion is required for early diagnosis and treatment. Herein we report a case of spontaneous perforation of sigmoid colon presented as intestinal obstruction.

II. Case report

A 40 year old male presented with progressive distention of abdomen, obstipation and vomiting for two days. Patient had also mild pain in upper abdomen. He had traumatic paraplegia for last 2 months. The patient was bed ridden and had chronic constipation. At initial presentation to us, temperature was 99°f, pulse rate 100/min, BP was 108/70 mm of hg with minimal dehydration. Patient’s abdomen was markedly distended. Bowel sounds were absent and per rectum examination was normal. Straight x-ray of abdomen showed multiple air-fluid levels in small bowel. There was no free air under diaphragm (*photo 1*). Diagnosis of small bowel obstruction was made. Patient was resuscitated and intravenous fluid and antibiotics were started. One unit of blood was arranged. Informed consent for high risk laparotomy was signed by patient’s relatives. At laparotomy, distended bowel loops with gross flakes in between loops of ileum were noted (*photo 2*). There was loculated pus collection in pelvis. There was a sealed perforation on antimesenteric border of sigmoid colon with edematous induration of wall. Large bowel was loaded with stool (*photo 3*). However there was no fecal peritonitis. Peritoneal lavage was done and small bowel was decompressed. Abdomen was closed after putting a drain in pelvis. Post-operatively, the patient had a stormy period and was in septic shock. He was kept on inotropic drugs with antibiotics (meropenam and linezolid) for about a week. The patient also developed wound sepsis and bed sores, which were taken care off. Bowel sounds appeared on 4th post operative day and patient passed stool on 6th post operative day. Patient was discharged 14 days after surgery in stable condition.

III. Discussion –

Colon perforation is a rather uncommon event usually caused by malignancy, amoebic colitis, diverticular disease, spontaneous perforation, stercoral ulceration, steroid therapy, NSAIDs, trauma and ulcerative colitis². Several reports of large bowel perforations have been associated with chronic use of non-steroidal anti-inflammatory drugs and chronic constipation³. These two factors may exert their deleterious effects on lower gastrointestinal tract through local and systemic actions. Systemic effects are caused by the inhibition of cyclo-oxygenase and reduction of protective prostaglandins. The local damage of the intestinal mucosa in the distal bowel segments seems to be caused by sustained release formulation with a high entero-hepatic circulation³. Several untreated chronic constipation may, on rare occasion, cause free perforation of the sigmoid colon, and much less frequently of the caecum^{1,4}. In present case likely cause of spontaneous perforation is chronic constipation in bed ridden paraplegic patient.



Photo 1 – Roentgenogram of abdomen upright, showing multiple air-fluid levels.



Photo 2 – Per operative photograph showing evidence of peritonitis.

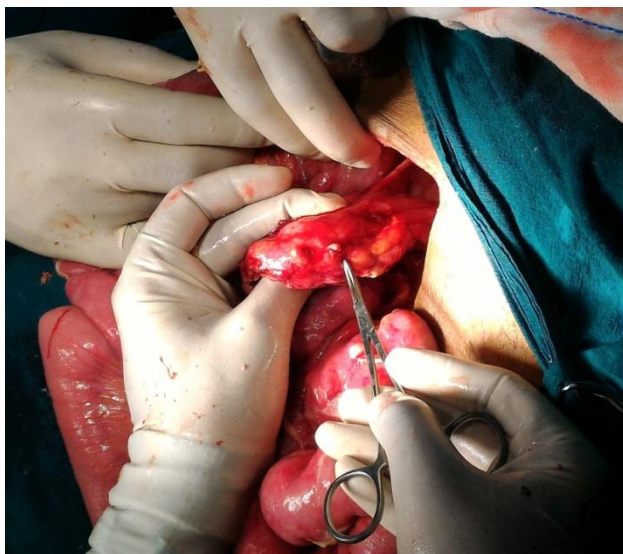


Photo 3 – Showing sealed perforation in loaded sigmoid colon at antimesenteric border.

Severe chronic constipation is considered to be the main causative factor in the development of the stercoral perforation of the colon. Long standing constipation may enhance the formation of stone hard fecalomas and maintain a persistent pressure over the bowel wall leading to pressure necrosis of mucosa. There are several reasons why the perforation sites are located in the antimesenteric aspect and in the sigmoid colon. (a) hypoperfusive status existing in the antimesenteric aspect other than the mesenteric border; (b) due to its more distal location and more solid consistency, fecalomas tend to form in more distal aspects of the large intestine such as the sigmoid colon; (c) being the most narrow region of entire large intestine, stool has difficulty passing through the sigmoid colon which increases the intraluminal pressure to the point where it can compress submucosal capillary vessels and reduce perfusion of the colonic wall; (d) prolonged localized pressure on the colon wall causing pressure ulceration to appear⁴. In our case stercoral perforation is ruled out because there were no fecal contents free in peritoneal cavity.

Diagnosis of spontaneous perforation of colon is straight forward on upright plain x-ray abdomen showing free gas under domes of diaphragm, along with situational condition of patient. In present case, we diagnose this patient as intestinal obstruction, at laparotomy evidences of peritonitis were present (photo 2). On further exploration of sigmoid colon we could find a sealed perforation on antimesenteric border of sigmoid colon with edematous induration of wall (photo 3). However diagnosis of cause of perforation can be established preoperatively by availability of modern imaging, but with limitations, in these chronically constipated patients.

Surgical treatment is standardized and post operative survival is over 60%. However the morbidity and mortality rates depend on peritoneal contamination. Early surgical eradication of the affected part of the colon including the stercoral ulcers and aggressive therapy for peritonitis leads to low mortality⁴. Timely intervention to prevent and/or treat any associated sepsis along with extensive peritoneal lavage and surgical removal of diseased colonic tissue at the primary stercoral ulceration site coupled with aggressive therapy for peritonitis are the key treatment modalities in salvaging patients presented with stercoral perforation of the colon².

However, primary resection with anastomosis and hartman's procedure are not competing operations but are situation dependent therapeutic concepts in spontaneous colonic perforation⁵. In our case peritoneal lavage, separation of adhesions with decompression of distended small bowel was done, as perforation was already sealed.

Overall, prevention of stercoral perforation may be achieved by –

- Increasing the awareness of the public as well as the medical community on the possibility of spontaneous perforation of the bowel occurring from long standing constipation.
- Careful monitoring of the bowel habits of the debilitated, bed ridden patients, patient with cerebral palsy, paralysis, dementia or mental abnormalities.
- Regular rectal and abdominal examinations of forbidden patients to ensure that the rectum is not full of hard fecal matter. Manual evacuation is a useful procedure to stimulate bowel motions
- Limiting the use of nsoids to minimum period and using smaller doses of nsoids in chronically constipated patients⁶.

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