

Case Report

Stercoraceous perforation, rare but potentially fatal cause: case report

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ABSTRACT

Stercoraceous perforation is an infrequent pathology but with high mortality rates, it is increasingly recognized as a consequence of chronic constipation, it occurs in elderly people, the diagnosis is a surgical challenge, sudden abdominal pain is the initial symptom associated with signs of peritoneal irritation and the diagnostic study of choice is tomography, the treatment of choice is early surgery, the prognosis is related to the patient's comorbidities. We present the clinical case and review of the subject of a 72-year-old woman who presented stercoraceous perforation secondary to chronic constipation, emergency surgery was performed with resection of the affected bowel, colostomy and Hartmann's pouch with favorable short-term results.

Keywords: Stercoral perforation, Chronic constipation, Rectosigmoid surgery

INTRODUCTION

Stercoral perforation is a rare but potentially fatal condition, the mortality rate can reach 32% to 60%, it was first described in 1894 and nowadays there are few cases reported, we present a clinical case and review of a 72-year-old female patient who comes to emergency services for presenting data of septic shock and peritoneal irritation, the patient has a history of chronic constipation and denies any other chronic degenerative disease.^{1,2}

Stercoral perforation is increasingly recognized as a consequence of chronic constipation although the mechanism is not fully understood, chronic constipation leads to fecal impaction, distension and deformation of the colon and the development of masses of dehydrated fecal matter called fecalomas. The fecaloma lodges in areas of the colon, most commonly in the rectosigmoid colon it is believed that impacted fecalomas can cause local pressure

with subsequent ischemia and necrosis of the colon wall, leading to ulceration or perforation of the stercora.³ Perforations are typically located at the antimesenteric border.⁴ Risk factors for developing chronic constipation are multifactorial and include a low-fiber diet, genetic factors, behavioral factors, pharmaceutical factors, as well as anatomical and physiological conditions, which affect colonic motility and absorption; women also experience constipation more frequently than men.⁵ Stercoral perforation should be considered in the differential diagnosis of any presentation of peritonitis in elderly patients with a history of chronic constipation, as it may be confused with other causes of acute abdomen. Sudden abdominal pain is the initial symptom, laboratory values are not specific, but include leukocytosis and elevated acute phase reactants, computed tomography of the abdomen and pelvis is the diagnostic study of choice, and in hospitals where this imaging study is not available,

emergency laparotomy surgery will be necessary. Only 11% of patients can be diagnosed before surgery.⁵

The risk of mortality increases with the degree of fecal peritonitis, septic shock, clinical deterioration, as well as in patients with immunocompromised states and significant comorbidities.⁶ Emergency surgery can reduce mortality, which is why it continues to be a diagnostic challenge for every surgeon, since it is scarcely documented in the medical literature. In the presentation of this case we have provided information on a stercoraceous perforation of the rectosigmoid colon and reviewed the subject.

CASE REPORT

In this case, a 72-year-old female with a history of intermittent and alternating episodes of chronic constipation, denies other personal pathological history. She arrived at the emergency room with an intense abdominal pain in epigastrium, which travelled to the entire abdomen, intensity of 10/10, likewise nausea and vomiting. At physical examination alert, oriented, pale, dry oral cavity, cardiac noises increased in frequency and intensity, decreased vesicular breath sounds, abolished peristalsis, hyperesthesia, pain to superficial and deep palpation in a generalized way which increased by decompression, rectal examination with faecal matter without rectorrhagia, extremities with delayed capillary filling (6 seconds) and marmorea skin. Vital signs at that moment, blood pressure 80/50 mmHg, heart rate 108 bpm, respiratory rate 42 rpm, temperature 35°C, Glassglow coma scale/score 15 points. Biochemical parameters altered with an inflammatory response (leukocyte count=16.6 103/l and neutrophilia 78.4%, CRP>270 mg/dl) together with normocytic anemia (Hb=8.9), respiratory alkalosis and elevated creatinine 2.02 mg/dl presenting as acute kidney injury

E-FAST protocol negative for free fluid. Management with crystalloids was initiated and, since minimal mean blood pressure was not recovered, vasopressor therapy (norepinephrine at 0.22 µg/kg/hour) was initiated, reaching target. At the same time, antibiotic therapy with third generation cephalosporins and anaerobic coverage with metronidazole is initiated.

Because of peritoneal irritation an Abdominal CT scan was requested; data showed distended sigmoid colon and plenty of air and residue inside the rectum, from the mucosa of the sigmoid colon some images of semilunar morphology protruded into the cavity, pneumoperitoneum and a massive sigmoid fecaloma suggestive of stercoral perforation associated with ischemic changes. A diagnostic laparotomy was done through a midline incision under general anesthesia. In the laparotomy an extremely dilated and redundant sigmoid colon was identified, a perforation in the limit between sigmoid colon and rectum was discovered at the antimesenteric edge of approximately 7 cm of diameter stuck with a large

fecaloma (Figure 2), in addition abundant free purulent fluid and fecal material in cavity of approximately 1 l were present, other pathologies such as diverticular disease, inflammatory bowel disease or colon cancer were ruled out. The abdominal cavity was contaminated with feces, which therefore, was washed with warm isotonic water. An open Hartmann procedure was performed, which was completed with a terminal colostomy, an open drain was placed in the abdomen. The colostomy was functional the next day, 100 cc serous and hemorrhagic fluid was measured in the drainage, vasopressor was reduced until its elimination with neurological and hemodynamic recovery, developing good clinical outcome. The prognosis is poor in stercoraceous perforation due to abdominal contamination. Early diagnosis is key because stercoraceous perforation causes fecal peritonitis, which carries a high rate of morbidity and mortality.



Figure 1: CT abdomen pelvis showing fecaloma protruding through the colonic wall, focal thickening of the sigmoid wall, extraluminal gas bubbles and/or pneumoperitoneum.



Figure 2: Resected specimen showing ischemic necrosis and a large stercoral perforation.

DISCUSSION

Stercoaceous perforation is a rare colon pathology that is sometimes confused with other diagnoses, so much so that case reports are limited perhaps because of the high mortality rate that occurs, among the etiological factors of stercoraceous perforation are chronic constipation, the presence of fecaliths, difficult bowel movements and prolonged consumption of drugs such as antidiarrheals, opiates, tricyclic antidepressants, non-steroidal anti-inflammatory drugs (NSAIDs) or antipsychotics, as well as chronic renal insufficiency in peritoneal dialysis. Chronic constipation can cause fecal impaction in 50% of cases and accounts for 3.2% of the causes of colonic perforation.⁷ There are 2 types of chronic constipation, primary and secondary constipation; Primary constipation is further classified as normal transit, slow transit, and defecatory disorders. Secondary constipation is usually caused by medications, diet, anatomic alteration, neurologic conditions, metabolic conditions and rarely colon cancer.⁸ Women also experience constipation more frequently than men.⁵

The pathophysiology behind perforation is attributed to fecaloma formation leading to increased volume, impaction and eventual deformation of the colon which in turn leads to increased intraluminal pressure, resulting in the development of decreased blood flow to the area, when the blood supply does not meet the cellular metabolic demand, ulceration and pressure necrosis of the intestinal wall and subsequent perforation will develop; 77% of the conditions occur in the sigmoid and rectosigmoid colon due to several explanations; narrow diameter of the colon, solid stool consistency and insufficient vascularization, particularly at the antimesenteric border.⁹

The clinical diagnosis is frequently not made preoperatively, according to the literature this only occurs in 8-11% of cases.¹⁰ The symptoms of stercoraceous perforation are nonspecific, the most frequent being: chronic constipation, abdominal pain, fever, fecaloma may be palpable on digital rectal examination, when perforation occurs, the patient may rapidly develop signs and symptoms of peritonitis and abdominal irritation. The patient in the case presented these symptoms, so abdominal and pelvic CAT scan and subsequent surgery were performed.

CT findings suggestive of a diagnosis of stercoroidal perforation are fecal impaction with dilatation of the colon, most commonly the rectosigmoid colon. Occasionally, fecalomas may be visualized on CT as radiopaque masses within the colon. In cases of edema or ulceration secondary to pressure necrosis, there is focal thickening of the colonic wall, typically adjacent to the fecalomas. There may also be diffuse edema of the bowel wall due to increased intraluminal pressure, which appears as a mucosal discontinuity on CT. Mucosal discontinuity refers to decreased intravenous contrast uptake from areas of the bowel wall where the blood supply is compromised.¹¹ If

extraluminal gas bubbles or an abscess are visualized, this suggests that perforation has already occurred.² CT is usually the best diagnostic option. In the present case, fecaloma protruding through the colonic wall, focal thickening of the sigmoid wall, extraluminal gas bubbles and/or pneumoperitoneum can be seen (Figure 1). Confirmatory diagnosis is made with intraoperative findings and histological studies. Mauer et al suggest 4 criteria in the diagnosis of stercoral perforation (1) round or ovoid perforation of more than 1 cm in diameter on the antimesenteric side of the colon; (2) piling of stool in excess exuded into the perforation of the colon; (3) the existence of microscopic pressure ulcer and nonspecific acute inflammatory changes around the area of perforation; and (4) external injury, diverticulitis, lack of cohesive obstruction or tumor.⁴

Patients with signs of sepsis or septic shock should be resuscitated as necessary with intravenous fluids and broad-spectrum intravenous antibiotics covering anaerobic and gram-negative organisms. Treatment for these patients involves resection of the affected bowel, colostomy, and Hartmann's pouch. Limited surgeries may be associated with inferior clinical outcomes, as residual affected colonic segments carry the risk of recurrent perforations.² Finally, diagnostic knowledge of this pathology should be available in surgical services to act as timely as possible, and patients with chronic constipation should be educated in dietary habits to increase the frequency of bowel movements and prevent complications such as perforation.⁵

CONCLUSION

Stercoral perforation is a rare problem that is usually not seen in surgical emergencies. Late diagnosis of this situation has a high mortality rate. Early surgery can reduce the morbimortality of the patient, the existence of chronic constipation associated with intense acute abdominal pain in addition to CT images of colonic perforation is a reason for exploratory laparotomy, in our clinical case the perforation was due to a large fecaloma impaction resulting in a disruption in the antimesenteric border secondary to chronic constipation, emergency surgery is the only treatment option in case of stercoroidal perforation, early resection of the affected colon plus Hartmann's procedure with terminal colostomy and extensive peritoneal lavage associated with broad spectrum antibiotic therapy can keep the mortality rate low.

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