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Stercoral Perforation of the Colon: Three Observations and Literature Review

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Abstract

The authors report three cases of stercoral peritonitis secondary to colon perforation in a context of chronic constipation. Two patients were young and under ant motility drugs and one patient was elderly and bedridden. The diagnosis was made in the first two patients, who presented with signs and symptoms of generalized peritonitis by the CT scan whereas the last patient presented with a septic shock that did not allow performing of a diagnostic imaging. All the three patients underwent an emergency laparotomy. Perforation sites were located on the sigmoid colon in the two young patients and on the transverse colon in the elderly patient. The two young patients underwent a Hartmann's procedure while the elderly patient had a transverse colostomy. The latter patient died postoperatively due to late intervention.

Keywords: Constipation; Fecaloma; Sigmoid Colon, Stercoral Peritonitis

Introduction

Fecaloma is an accumulation of dehydrated and stagnant feces in the rectum. It most often leads to constipation and can even retracted back in the colon and can be mistaken for an abdominal tumor. One of the rare and exceptional complications of chronic or obstinate constipation is colonic perforation secondary to fecal impaction. Consequently, it will cause stercoral peritonitis that often has a poor prognosis, thus requiring an early management. It was described for the first time by Belly in 1894 [1]. It most often affects the elderly fragile individuals suffering from chronic constipation. In this study, we report three cases of stercoral peritonitis in chronically constipated patients and then we do the literature review.

Case 1

A 57-year-old woman, admitted for generalized abdominal pain starting in the left iliac fossa, associated with vomiting and stopping transit moving for 24 hours with persistent fever. She had a history of chronic constipation, depression, epilepsy, appendectomy, hysterectomy. Her usual treatment was an antidepressant and an antiepileptic medication. The clinical examination revealed a hyperthermia, a good hemodynamic status. She had generalized abdominal guarding and no hernias detected by physical examination. There was a stool in the rectum with digital rectal examination. Elsewhere, the rest of the physical examination was normal. When blood tests were done, there was a systemic inflammatory response syndrome with 15000/mm^3 of leukocytes and 120 mg/l of CRP. A CT scan was performed, and it showed perforation of the sigmoid colon with pneumoperitoneum associated with stercoral peritonitis extending to the mesosigmoid root (Figure 1). The patient's condition deteriorated fast to severe sepsis with hypotension, tachycardia and hypoxemia. She underwent an emergency laparotomy, which showed a generalized stercoral peritonitis secondary to sigmoid colon perforation at the recto sigmoidal junction on the ant mesenteric border. There was an impacted fecaloma at the site of perforation. A sample was taken for cytobacteriological examination. A Hartmann procedure was therefore performed after resection of the perforated segment of the sigmoid colon. There were no postoperative complications. Additionally, the histopathologic examination of the surgical specimen ruled out tumor and inflammatory bowel disease.

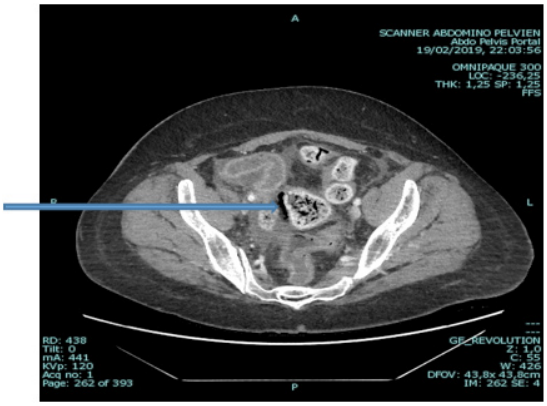

Figure 1: CT scan showing sigmoid colon perforation Secondary to fecaloma (Blue arrow).

Case 2

A 63-year-old female patient, admitted for vomiting, abdominal pain and stopping transit evolving for 12 hours. She had a medical history of schizophrenia and depression, treated by neuroleptic and antidepressant medications. At arrival to the emergency room, she was hemodynamically stable with fiver. The clinical examination showed generalized abdominal guarding with no signs of hernias. However, the digital rectal exam showed empty rectum. The rest of the clinical examination was normal. When blood tests had been don, the patient had leukocytosis at 14000 / mm^3 and CRP at 280 mg/l. A CT abdomen was performed and it revealed a fecaloma in the sigmoid colon with pneumoperitoneum (Figure 2). An exploratory laparotomy was performed urgently. The exploration revealed generalized peritonitis with false membranes on the bowels and a stercoral fluids, which were collected for peritoneal fluid analysis. A perforation of the anterior surface of the sigmoid, on the ant mesenteric border, was observed with a very hard impaction fecaloma (Figure 3). The histological examination of the operative specimen ruled out to the cancer and the inflammatory disease.

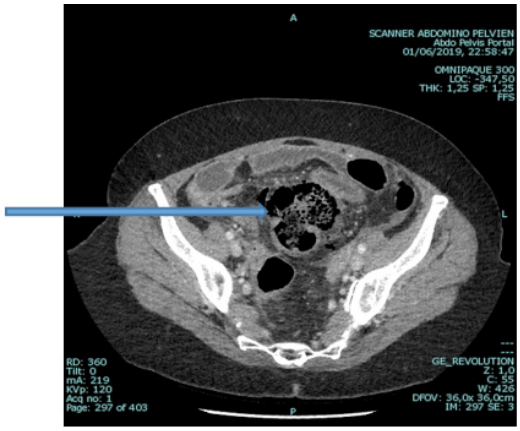

Figure 2: CT scan showing perforation of the sigmoid colon due to impact fecaloma (Blue arrow).

Figure 3: Intraoperative view sigmoid colon perforation secondary to an impacted fecaloma (Blue arrow).

Case 3

75-year-old, male patient, admitted for abdominal pain, vomiting and stopping transit moving for more than a week. He has a medical history of hypertension and chronic constipation. He presented with fiver of 39°C, hypotension and superficial tachypnea. He had also an abdominal distention with a generalized abdominal rigidity. Due to unstable condition and the shock septic of the patient, imaging studies could not be carried out. Blood tests confirmed the presence of a systemic inflammatory response syndrome with very high lactates levels. An exploratory laparotomy was performed after resuscitation and stabilization hemodynamic status. A generalized peritonitis with a purulent effusion was found resulting from perforation located in the middle of the transverse colon due to a fecaloma. A peritoneal fluid was sampled for analysis. The fecaloma was evacuated, and the perforated affected segment was resected. Then, peritoneal lavage, drainage and transverse colostomy were performed. The operative specimen was sent for histopathological examination. The Patient died two days after surgery.

Discussion

Colon perforation is rare and has several etiologies including diverticulitis, abdominal trauma, malignancy, amebic colitis, ischemic colitis and inflammatory bowel disease [2]. The Stercoral colonic perforation due to a fecaloma is exceptional, making it a rare pathological entity. To our knowledge, there are less than 200 cases published in the literature. It accounts for 3.2% of all colon perforations [3]. Stercoral perforation often occurs in frail elderly people who are bedridden. However, it sometimes occurs in young individuals [4,5]. In young individuals, constipation is most often due to medications slowing the bowel movements (antidepressants, neuroleptics, antiepileptic's, opiates) or a neurological condition [6,7]. This is what we observe in the two patients in our study who suffered from obstinate constipation due to their usual antidepressant and neuroleptic medications. Besides, there are a few risk factors for stercoral ulcer perforation which include

chronic intermittent constipation and the use of nonsteroidal anti-inflammatory drugs or others drugs like amitriptyline, antacids, steroids, codeine, and heroin [8,9].

The stercoral perforations occur most commonly in the sigmoid colon. The second most common site is the recto-sigmoid junction, followed by the transverse colon [4,10]. In this review, we found two cases reporting perforation in the sigmoid region and one case describing the perforation in the transverse colon, confirming that the sigmoid region predominance in stercoral perforations. In this region of the digestive tract characterized mainly by recto sigmoid angulation, there is a high intraluminal pressure with influencing effect on the submucosal capillaries. As a result, this compressive effect causes a parietal ischemia of the sigmoid colon, partially explaining the physio pathological mechanism of the disease. This intraluminal pressure is secondary to a large fecal impaction that creates or worsens mucosal ulceration with parietal pain created by mechanical phenomena in contact with the petrified fecaloma and under the effect of defecation efforts. These perforations always lie on the ant mesenteric border of the colon which is less vascularized than the mesenteric side and more sensitive to mechanical stress [4,5].

The clinical symptoms of this condition are similar to that of peritonitis due to a hollow viscus perforation. It often has a clinical feature of generalized peritonitis characterized by a Systemic Inflammatory Response Syndrome (SIRS), nausea or vomiting, abdominal pain, acute abdomen symptoms (abdominal tenderness, guarding or rigidity) with often a meteorism. However, in the elderly, immunocompromised patients or in case of patients under antibiotic treatments for other health problems, the clinical signs sometimes can be limited to asthenic peritonitis characterized by a guarding or a rigidity rather than a distended abdomen, moderately painful but without reflex contraction [5]. The diagnosis of stercoral perforation must be evocated early in the patients with a history of severe or chronic constipation presenting with acute peritonitis or acute abdomen symtoms. When the diagnosis is not obvious additional tests are essential. So, blood tests often show a systemic inflammatory response syndrome, sometimes associated with electrolytes disturbance as in most peritonitis. The abdominal CT scan is the gold standard test for the diagnosis. It identifies the impacted fecaloma in the colon associated with a colon perforation and pneumoperitoneum [2,11,12].

This has been the rule in our study. However, it can be miss up to 10% of cases [10]. The management of this condition, as any peritonitis, is a medical and surgical emergency that require to be diagnosed and treated urgently without delay because it has often a poor prognosis. The resuscitation must be a priority in the surgical treatment. Once the patient is stabilized, the surgical treatment indicated is Hartmann's intervention after surgical resection of the affected segment of the colon. Antibiotic therapy against gram-negative bacilli and anaerobes should be started after the intraoperative peritoneal fluid cultures, which will be adapted according to results. The resected segment should be sent for histological examination to rule out a malignant tumor. Operative follow-up is often enameled with high morbidity and mortality because the affected subjects are elderly and frail with comorbidities [4,13]. The mortality rate can be evaluated between 35 and 40% [11, 13].

Conclusion

Stercoral perforation of the colon is a rare and exceptional complication of constipation, which often affects bedridden and frail elderly people. The diagnosis is sometimes difficult, because it often occurs in the elderly by asthenic peritonitis. However, the Computed Tomography (CT) is the gold standard for establishing the diagnosis, although it may fail in certain situations. This condition should not suffer from any diagnostic or therapeutic delay because of its high mortality.

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