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STERCORAL COLIC PERFORATION- WHAT YOU NEED TO KNOW ABOUT

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ABSTRACT

The stercoral perforation of the colon or the rectum is a rare disease with poor prognosis. The pathogenesis of the disease is not clear, but this condition seems to be correlated with chronic constipation. We present the case of a patient with chronic constipation who presented a stercoral perforation of the sigmoid colon. Stercoral perforation of the colon, defined as perforation resulting from pressure necrosis of a fecal mass, is rare, but can be life-threatening, with a reported mortality ranging between 35% to 47%. As the faecaloma exerts pressure against the colonic wall, it impairs regional transmural perfusion leading to later perforation due to the necrosis. The early diagnostic and treatment is very important to assure the survival of the patients. The most effective treatment is surgery in emergency with colic resection with colostomy, extensive lavage and abdominal drainage

INTRODUCTION

Stercoral perforation means “perforation of the large bowel due to pressure necrosis from a fecal mass”. The stercoral perforation of the colon or the rectum is a rare disease with poor prognosis. The pathogenesis of the disease is not clear, but this condition seems to be correlated with chronic constipation.[1, 2] Stercoral perforation is associated with significant mortality (35%) and the early diagnosis and treatment is essential.[3] Stercoral perforation of the colon has been reported to be 3.2% of all colonic perforation. Stercoral ulcers usually occur in debilitated, bed-ridden, mentally ill, or narcotic-dependent patients and the evolution is usually to perforation.[4]

We present a case report of a patient with a stercoral perforation with a pejorative evolution and a review of literature.

CASE PRESENTATION

A 78-year-old patient presented in the Emergency Department for fatigue, abdominal pain, no transit from 48 hours. The medical history revealed pulmonary cancer operated in 2010, chronic obstructive pulmonary disease, hypothyroidia, Parkinson disease, cognitive troubles, and chronic constipation. On physical examination it was noted a general altered state, saturation: 93%, T°: 37,2°C; blood pressure:91/66 mmHg, rapid cardiac frequency: 156/min. The clinical exam revealed a diffuse abdominal contracture with defense. The laboratory exam revealed an important inflammatory syndrome: leukocytosis 50,000/mm³ (normal 3.70-9.50×10³/mm³) and C-reactive protein 550 (normal <5.00), ph 7.43 and lactate level 6.6 mmol/l. The abdominal CT-scan showed a significant abdominal pneumoperitoneum, generalized free fluid and free fecal collection on the left flank. (Fig 1. and 2).

A laparotomy in emergency was performed who revealed a generalized fecal peritonitis. (Fig 3) The site of perforation was localized on the sigmoid loop. We performed a segmental colic resection and terminal colostomy, peritoneal lavage and drainage.

The postoperative course was slow and difficult due to the septic shock and the comorbidities but favorable. Two weeks after, the patient and the family demanded to stop the medical care and to assure only the comfort care. Due to the lack of antibiotics and support, the patient died 48 hours after.

DISCUSSIONS

General view

The disease was first described by Berry in 1894. Stercoral perforation of the colon, defined as perforation resulting from pressure necrosis of a fecal mass, is rare, but can be life-threatening, with a reported mortality ranging between 35% to 47%.[5] It is an uncommon but life-threatening complication of unresolved faecal impaction.[6] Only 10% of the patients are definitely diagnosed before surgery. The mortality is nearly 100% if managed conservatively.[7] It is considered that the inflammatory process due to fecaloma involves a long colonic segment, along with occurrence of multiple ulcers and necrotic changes.[8]

Stercoral perforation should be suspected in elderly and chronically constipated patients with unexplained abdominal pain.[9] It is commonly seen in the elderly with the median age of presentation is 62 years, ranging from 20 to 86 years.[10] It occurs especially in patients older than 70 years with severe chronic constipation, weakened or are hospitalized with multiple

medications and immobilized.[11] Sometimes for the younger patients a partial eating disorder (ED) can be the main cause of constipation.[12] Multiple perforations in 21-28%.[13]

Significant features of this illness include preceding history of constipation, its presentation as an acute abdomen, radiologic signs of a perforated organ, and a distinctive histological picture.

Treatment of choice is surgery with exteriorization and colostomy.[13] Surgery in emergency is the only therapeutic treatment that can assure the survival of the patient

Etiology

There are many causes of stercoral perforation, such as chronic constipation, Chagas disease, Hirschsprung's disease, toxic colitis and megacolon.[14]

Chronic constipation (61 to 81% of cases) with fecaloma formation is considered to be the main causative factor.[1,2] Medications (narcotics, antacids, tri-cyclic antidepressants, tranquilizers) and concomitant diseases (motility disorders, neurological impairment, for example, stroke, diabetic enteropathy, hypothyroidism, scleroderma) that affect bowel motility or reduce mucus production.[7,15]

One of the hypotheses includes the association of non-steroidal anti-inflammatory drugs (NSAIDs) with stercoral perforation of the colon. There need to be greater awareness and caution when using NSAIDs in chronically constipated patients.[16] On this subject, Yasser Al Omran presents a case of stercoral sigmoid colon perforation in a 2-year-old girl, secondary to unintentional NSAID overdose.[17]

Another hypothesis was that Verapamil can favor the constipation and the perforation, with hypothyroidism as a possible exacerbating factor. Verapamil significantly reduces motor activity of the intestine; this returns to normal on cessation of the drug. Severe constipation is frequently described as one of the most troublesome side effects of Verapamil use and should be used with caution in patients with pre-existing tendency to constipation.[18]

Both faecal impaction and perforation have been recently reported in renal transplant patients in whom aluminium-based antacids have been implicated.[19]

Opioid induced chronic constipation is well known. Narcotics are also responsible to produce chronic constipation resulting in stercoral perforation.[20]

Pathogenesis

Stercoral perforation of the colon represents 3.2% of all colonic perforations. In more than 90% of cases, perforations are located on the sigmoid or the upper rectum. Different hypotheses seem can explain the fragility of the recto-sigmoid junction realizing an appearance in "pseudo-sphincter", a precarious vascularization of mesenteric edge and high sensitivity to stress mechanical. The perforations are usually on the anti-mesenteric edge of the colon. The three most common locations for stercoral ulceration are the anterior wall of rectum just proximal to the peritoneal reflection, the antimesenteric border of the rectosigmoid junction, and the apex of the sigmoid colon. The intraluminal pressure is more important and increases the pressure on submucosal capillaries.[21] As the faecaloma exerts pressure against the colonic wall, it impairs regional transmural perfusion. If the intraluminal pressure exceeds 35 cm H_2O for several hours, ischaemic necrosis develops, leading to bowel wall necrosis and, ultimately, to perforation. The sigmoid colon and rectum, and particularly the rectosigmoid junction, are the most susceptible parts of the colon for several reasons, including the decreasing water content of the stool, their relatively narrow diameter and the poor blood supply to these regions from inefficient or absent anastomosis between the branches of the inferior mesenteric and superior rectal arteries, the Sudeck's point.[5,22]

Chronic constipation has been assimilated to barium enema or to intensive activated charcoal treatment. Logically, stercoral perforation is obviously preceded by fecal impaction, defined as "collection of putty-like feces, 2 that produces a hardened, concrete mass and blocks or impedes normal defecation". Fecal impaction is considered to be especially dangerous when prolonged, and apart from alterations in colonic passage, it may lead to protean sequelae such, as hydronephrosis or limb ischemia.[23]

Diagnostic

Mauer et al. suggest 4 criteria in the diagnosis of stercoral perforation: round or ovoid perforation of more than 1 cm in diameter on the colonic antimesenteric side, the pile up of feces excess exuded to the colon perforation the existence of microscopic pressure ulcer and acute nonspecific inflammatory changes around the perforation area and external injury, diverticulitis, lack of obstruction due to a tumor. Early diagnosis is important as stercoral

perforation causes faecal peritonitis, which carries a high risk of morbidity and mortality.[24, 25]

The chest X-rays demonstrate free-air under the diaphragm in only 30% of colonic perforations. Usually faecal impaction within the bowel is seen. Also intraperitoneal free air and extraluminal faecal contents within the abdomen may be visible in cases where perforation has already occurred.

The abdominal CT-scan should be considered in cases with suspected stercoral perforation for preoperative diagnosis which has a reported accuracy ranging from 82% and 90%.[26, 27] The CT scan is our preference exam in case of colic perforation.

Differential diagnostic

Fecaloma in the proximal colon and layered enhancing wall thickening adjacent to perforation site are likely due to stercoral perforation. The bowel wall thickening at the distal portion of the perforation site with many enlarged lymph nodes is most likely due to colorectal cancer perforation.[28] Anyway the anatomo-pathological exam can certify or not the presence of a cancer.

Treatment

High-risk patients should be advised to increase water intake, along with a high fiber diet, fruits, laxatives, enema is important to prevent stercoral perforation during follow-up.[29, 32]

This disease involves a segment of colon rather than only the focal point. There is a higher postoperative mortality following closure of the perforation and proximal colostomy (57%) or exteriorization alone (43%), compared with resection of the diseased segment and exteriorization (32%). Resection and exteriorization is therefore the treatment of choice is most situations.

Once the diagnosis is made, resuscitation and antibiotic therapy should be instituted urgently. Antibiotic therapy should be adapted to the outcome of intraoperative bacteriological specimens.[31]

The most recommended operation is a Hartmann procedure with drainage of the abdominal cavity. A biopsy should be systematic performed to rule out other diagnoses, mainly neoplastic lesions. As the inflammatory process may involve a long segment, simple closure

of the perforated site or segmental resection of the diseased colon with an anastomosis and a diverting enterostomy should be avoided. Colonic resection carrying the perforated colon associated with a colorectal anastomosis may be performed for the selected patients under cover or not of an ileostomy in case of low peritoneal contamination. Segmental resection of the perforated colon, rather than simple repair, appears to improve postoperative outcomes.[32, 33]

In our case the patient presented a chronic constipation due to the medication and to the lack of physical activity. The problem of constipation to the high risk patient should not be put in a secondary place. Due to the hyper septic content of the colon and to the high mortality, the active treatment of constipation remains the most important act in prevention.

FIGURES

Figure 1. ***Abdominal CTscan who reveals intraabdominal free air and fluid with signs of fecal collection on the left flank.***

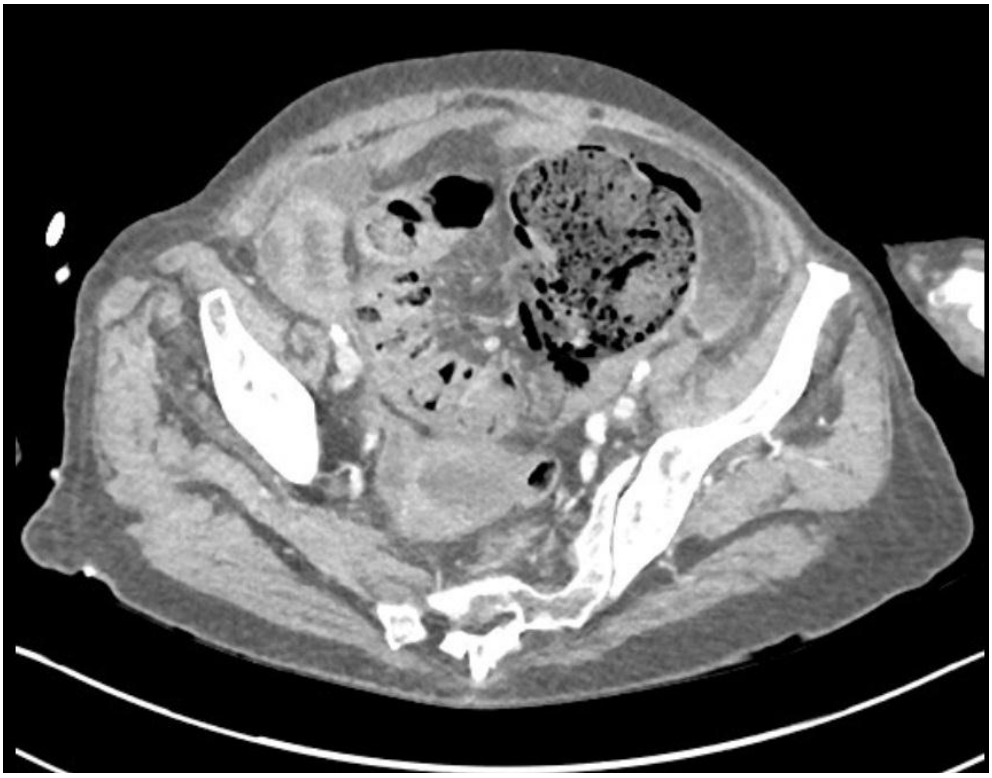

Figure 2. ***Abdominal CT scan who shown the stercoral perforation of the left colon.***

Figure 3. Post operative image who reveals the site of perforation.

CONCLUSION

The stercoral bowel perforation is rare but very severe and with a high mortality. The early diagnostic and treatment is very important to assure the survival of the patients. Due to the hyperseptic content of the colon, usually the general status of the patients is impaired and predisposed to septic shock.

The most effective treatment is surgery in emergency with colic resection with colostomy, extensive lavage and abdominal drainage.

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