

Stercoral perforation of the sigmoid colon. A case report and brief review of the literature

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SUMMARY: Stercoral perforation of the sigmoid colon. A case report and brief review of the literature.

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Stercoral perforation of the colon due to fecaloma is a rare disease and less than 100 cases have been described in the literature. The disease mainly involves the rectosigmoid colon. The condition is correlated with longstanding decubitus, chronic constipation, abuse of laxatives and/or constipating agents (anticholinergics, neuroleptics, etc).

We report a case of 82-year old woman who presented a covered colonic perforation due to fecaloma, related with a history of longstanding decubitus because of senile dementia, chronic constipation and use of anticholinergic drugs.

RIASSUNTO: Perforazione stercoracea del sigma. Caso clinico e breve revisione della letteratura.

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La perforazione stercoracea del colon dovuta a fecaloma è una condizione rara e meno di 100 casi sono riportati in letteratura. Interessa solitamente il retto e il sigma. Si associa a costipazione cronica, all'uso indiscriminato di lassativi e a farmaci che diminuiscono la motilità intestinale (anticolinergici, neurolettici, ecc.). Riportiamo il caso di una paziente di 82 anni, con anamnesi di allettamento per demenza senile, costipazione cronica e uso di farmaci anticolinergici e che ha presentato una perforazione coperta sigmoidea da fecaloma.

KEY WORDS: Colon - Stercoral perforation - Spontaneous perforation - Fecaloma.
Colon - Perforazione stercoracea - Perforazione spontanea - Fecaloma.

Introduction

Stercoral colonic perforation is a rare, life-threatening disease defined as rupture of the normal colon, i.e. in the absence of lesions such as a tumour, diverticulosis or external injury. The pathogenesis of the disease is not clear but seems that this condition is correlated with chronic constipation. The disease concerns mainly the rectosigmoid colon. Acute abdominal pain is usually the principal symptom.

We report the case of an 82-year old woman who presented a covered colonic perforation due to fecaloma, re-

lated with a history of longstanding decubitus because of senile dementia, chronic constipation and somministration of anticholinergics drugs.

Case report

An 82-year old woman arrived to the emergency department because of diffuse abdominal pain and fever began 48 hours earlier. The patient was recumbent the last twelve months and had a history of atrial fibrillation treated with digoxin (0,125 mg per day) and acenocumarol (1-4 mg daily depending on INR), and senile dementia with anxiety treated with rivastigmine (9,5 mg/daily), memantine HCL (10 mg twice daily), risperidone (3 mg twice daily) and biperiden (3 mg, three times daily). The patient's medical history was reported by the familiars because her demential inability. They referred that the patient's medical history included a longstanding constipation usually treated with laxatives and/or enema and that similar clinical events were common and were usually resolved with enema. The patient had had enema eight hours before her admission to the hospital but she did not presented an improvement. By that time, she was under antibiotic treatment (ciprofloxacin 500 mg twice daily) because of urinary infection.

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Clinical examination demonstrated a diffuse abdominal pain, mainly located in the periumbelical region where a hernia was identified but not a rebound tenderness on palpation. Intestinal sounds were minimally diminished. She had a temperature of 38,7°C. Laboratory findings revealed leukocytosis (WBC 14.400 mm³), mild anemia (Hct: 32%), hyponatremia (129 mmol/l) and INR:3,8. Blood pressure, heart and respiratory rate were within normal limits as well as oxygen saturation (95%). Serum levels of digoxin were within normal limits. Urinary test was negative for an active infection.

Plain abdominal X-ray series revealed only rare air-fluid levels but sensitivity was low because of patient's decubitus. Abdominal ultrasound demonstrated intestinal loop's dilation but not a free abdominal fluid. The patient received intravenously fluids, ciprofloxacin and metronidazol. Acenocumarol was replaced with enoxaparine sodium (6.000 anti-Xa s.c). Two hours after admission, defecation seemed reestablished (four episodes with hard but small fecaloma measuring about 1-1,5 in diameter). Patient's hemodynamic condition remained stable and the day after, she underwent an abdominal computed tomography (CT) scan that demonstrated only a non specific attenuation of the pericolic fat of the sigmoid colon but did not exclude neoplasm, diverticulitis or abscess.

The patient underwent expository laparotomy. The colon appeared dilated. The small bowel's mesentery and the ileum were adherent to a segment of the sigmoid colon. A manual blunt separation was carried out (Fig. 1). An irregular perforation of the antimesenteric border of the colon was discovered (2 cm in diameter) while the colonic wall appeared extremely thin (Fig. 2). Between antimesenteric border of the sigmoid colon (site of the perforation) and mesentery, a 'pouch' containing fecal material and pus was identified (Fig. 1). Inspection of the colon did not reveal neoplasm or diverticulosis. A Hartmann's procedure and an intraluminal lavage of the proximal colon before the formation of the end colostomy were performed. Many fecalomas were expressed out during lavage. She received imipenem and medronidazol for six days and post-operative course was uneventful. The patient was discharged after 10 days of hospitalization.

The pathology report described an intraluminal, extended and deep necrosis of the bowel's wall, ulcer between normal tissue, infiltration of the muscularis by lymphocytes and plasmacytes and inflammatory exudates of the serosal surface of the specimen.

Discussion

Stercoral colonic perforation is a rare disease involving mainly the rectosigmoid colon (1). Colonic perforation is usually correlated with chronic constipation and associated with a sudden increase of intra-abdominal or intraluminal pressure during defecation (1). Non traumatic and non obstructive cecal perforation is unusual and can occur in thermal injuries (2), chronic renal failure (3) or caesarian section patients (4). Cecal perforation presenting an adjacent mass formation mimicking a tumor has been described but is extremely rare (5).

Stercoral perforation (SP) is a rare surgical finding. The disease was first described by Berry in 1894 (6) and to date almost 100 cases have been reported in the literature. Stercoral perforation is life-threatening condition presenting high mortality rate (7). Pathogenesis of the SP is not clear but seems that chronic constipation and fecaloma formation favor feculent ulcer alterations. A hard



Fig. 1 - The ileum and the small bowel's mesentery cover the colonic perforation, forming a 'pouch' containing fecal material and pus.



Fig. 2 - Surgical specimen. The irregular perforation of the antimesenteric border of the colon and the extremely thin colonic wall.

fecaloma diminishes intestinal perfusion causing local ischemia, mucosal necrosis, ulcer and perforation. Mauer e al. proposed four diagnostic criteria of stercoral perforation: 1) a round and ovoid antimesenteric colonic perforation larger than 1cm in diameter 2) The colon is foul of stool that protrude through the perforation site 3) microscopic evidence of multiple pressure ulcer and acute inflammatory reaction surrounding the perforation 4) absence of external injury, diverticulitis or obstruction due to neoplasms or adhesions (8). The disease concerns mainly the antimesenteric border of the sigmoid (17%) and rectosigmoid colon (30%) because of the physiological characteristics of these segments, such as lower water content of the stool, poor blood supply and high pressure due to the narrowed intraluminal diameter (1).

Pathogenesis of SP is multifactorial. Patients are usually elderly and inactive. Most of them have a long history of constipation, (61% to 81% of patients) and frequent usage of laxatives (9). Medical history of constipating agents as anticholinergics, ganglion blockers, tricyclic antidepressants, phenothiazine neuroleptics, opioids, aluminum-based antacids, steroids and barium enema usage is usually present (10, 11, 12, 13, 14). Non-steroidal anti-inflammatory drugs, inhibiting prostaglandin synthesis, are reported as a possible cause of SP because of the loss of the cytoprotective result that prostaglandin offers to the intestinal integrity (14). Stercoral perforations can be found in young patients with spinal cord injury (15), in patients with chronic renal failure in dialysis (13) and in cases of increased intra-abdominal pressure, diffused arteriosclerosis or ischemic colitis. (16, 17).

Stercoral perforation of the colon is usually symptomatic. Sudden acute located or diffused abdominal pain and fever are the main symptoms of presentation. X-ray series of the abdomen demonstrates pneumoperitoneum, sometimes air-fluid intestinal levels and fecaloma (16, 17). Hydronephrosis and limb ischemia, because of a compressing effect of the fecaloma, may be other symptoms of the disease (12).

The patients are usually undergoing emergency laparotomy for a hollow viscus perforation. Only 10% of the patients are definitely diagnosed before surgery (17). History of longstanding constipation, abuse of laxatives or drugs related with constipation give the suspicion of stercoral perforation in a patient with signs of peritonitis.

Surgery seems to be the only therapeutic treatment. It should be taken into consideration that an inflammatory process involves a long colonic segment and ulcers and necrotic changes due to faecaloma are usually multiple. This means that a simple closure or a limited colonic resection should be avoided without exploration of other colonic segments or without washing out the colon of the redundant fecal material (8). Intraoperative colonoscopic exploration has been proposed to exclude additional stercoral ulcerations and delayed colonic perforations (17). Neoplasty, colostomy, neoplasty plus colostomy, Hartmann surgery and intraoperative colonic

lavage are common surgical approaches depending on physical status, laboratory findings and degree of peritonitis (1, 8, 17). Subtotal colectomy must be considered in cases with multiple dilations and a thin bowel wall in order to avoid postoperative perforations.

In our case, the patient had a history of chronic constipation and used laxatives and/or enema. She was also immobilized for long time and was under treatment with biperiden for the control of extrapyramidal side effects of risperidone. Anticholinergic agents have a known constipating effect. Dyshydration is common in these patients because nutrition and water administration is often insufficient. A hard faecaloma brought in an immediate ischemic effect causing ulcer and then perforation. The patient was receiving antibiotics for a urinary infection that probably limited peritoneal contamination. The perforation was tamponated by the ileum and the small bowel's mesentery, minimizing an acute presentation and covering important radiodiagnostic findings (free intraperitoneal air or free fluid in the pelvis). In our case, diagnosis was posted at the time of the operation.

Conclusion

Stercoral perforation is a rare disease with a high mortality rate and should be suspected in any patient with a history of longstanding constipation and acute abdominal pain. Surgery is the only acceptable approach because conservatively treated cases present a mortality rate of 47% (7). Constipation must always be treated in old patients with dietetic and pharmacologic measures.

Abbreviations

CT Computed Tomography; SP stercoral perforation.

Consent

Written informed consent was obtained from the familiars for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing interests

The authors declare that they have no competing interests.

Authors' contribution

All authors read and approved the final manuscript form.

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