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# Stercoral perforation of the rectosigmoid colon due to chronic constipation: A case report



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## ABSTRACT

**INTRODUCTION:** Chronic constipation is very common in elderly patients. As a result of this situation fecaloma is also frequently seen at these ages. However, the stercoral perforation caused by fecaloma is a rare situation to occur. The rectosigmoid colon is the most affected colonic segment. It is seen in older patients with concomitant diseases and a low quality of life.

**PRESENTATION OF CASE:** Here in this case, we have to report an 83 – year-old male patient who came to the emergency room with complaints of abdominal pain and constipation for two days. He had Type II Diabetes Mellitus, had a cardiac stent and also Alzheimer's disease. We diagnosed a rectosigmoid perforation due to a large fecaloma. This case presentation was prepared in accordance with the scare checklist guidelines (Agha et al., 2016 [1]).

**DISCUSSION:** Constipation and faecal impaction are common entities, particularly in elderly and bedridden patients. Fecalomas are collections of dehydrated, hardened stool. They rarely can cause colonic ischemia and/or stercoral perforation. Stercoral perforation is the perforation or rupture of the intestine walls by a stercoraceous mass. Stercoral perforation is a very dangerous, life-threatening situation, as well as a surgical emergency, because the spillage of contaminated intestinal contents into the abdominal cavity leads to peritonitis, a rapid bacteremia with many complications.

**CONCLUSION:** Fecalomas can cause stercoral perforations. This situation can be confused with other causes of acute abdomen in these patients. Early surgery can be life saving.

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## 1. Introduction

Constipation and faecal impaction can frequently be seen especially in elderly and debilitated patients. On the other hand, fecalomas rarely can cause colonic ischemia and stercoral perforation. There have been less than 100 cases in the literature. Berry first described it 1894 [2]. Mainly older, weak and bedridden patients are affected. The main trigger reason is chronic constipation. Most of the patients have been diagnosed with either bedrest, debilitation, Alzheimer's disease, senile demantia or schizophrenia. The reason behind the chronic constipation could be their long term usage of anticholinergics and neuroleptics. Softeners used by rectal route, oral vegetable oil usage (like olive oil) are satisfying treatment methods for mild and moderate constipation. When medical treatment is ineffective and multiple fecalomas are present, surgery intervention is required. The fecaloma which has grown and stiffened in the etiology pressuring the colon walls and causes the necrotic and gangrenous ulcer [3]. The rectosigmoid is the most

commonly affected colonic segment. Stercoral perforation is generally seen in older patients with concomitant diseases and a low quality of life [4]. The perforation is life threatening. It can be confused with other causes of acute abdomen in these patients. The sudden abdominal pain is the initial symptom [3]. Only 11% of the patients can be diagnosed before the operation although there are localized or generalized peritonitis in clinical examination [5]. Early surgery can be life saving. In the presentation of this case, we have provided information on the diagnosis and treatment process of an 83 year-old male Alzheimer's patient with chronic constipation problem. He had sudden fecalome which caused rectosigmoid colon perforation.

## 2. Case report

An 83 year-old male patient, came to the emergency room with abdominal pain which had begun some 48 h ago. The patient history informed that he had had Type 2 Diabetes Mellitus for twenty years, a cardiac stenting was made ten years ago and also an Alzheimer's disease was diagnosed 5 years ago. The patient was cared for these diseases at home. He complained about chronic constipation. His defecation would be possible with the help of laxatives and water enemas. He was immobile. In his physical examination, he had dif-

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Fig. 1. Pneumoperitoneum at X-ray.

fuse abdominal tenderness. He had no rebound and defence. His body temperature was 36.8 C (98.2 F). Bowel sounds were hypoactive. There was sclerotic fecaloma in the digital rectal examination. His blood pressure 140/80 mmHg, heart rate beats 90/min, and respiratory rate breaths 24/min. Leucocytes  $6340 \times 10^3/\mu\text{L}$ . Hemoglobin 15.5 g/dl, glucose 176 mg/dl, Na 142 mmol/l, K 4.9 mmol/l. He had high CRP level such as 80 mg/l. His cardiac enzymes and urinalysis were normal. The patient's ECG also had T negativities in the lateral derivations. Echocardiography showed an ejection fraction of 55% and heart valves were degenerative. Left diastolic dysfunction was present. On the erect chest X-ray there was pneumoperitoneum (Fig. 1), in the computerized tomography he had free fluid in the lower quadrant and also pneumoperitoneum (Figs. 2 and 3). The rectum and sigmoid diameter had increased and filled with fecaloma. We began pre-operative liquid replacement. The patient was urgently taken to the operation. The ASA score of the patient was 4. A dose of imipenem was administered intravenously before the operation.

A diagnostic laparotomy was applied through a mid-line incision under general anesthesia. At the laparotomy, it was discovered that there was a perforated area of 1.5–2 cm in diameter at the antimesenteric side of the distal sigmoid colon (Fig. 4). There were feces smeared around the perforation. The rectum and sigmoid filled with fecaloma which reached a diameter of 15–20 cm. There were no other pathologies like diverticular disease, inflammatory bowel disease or colon cancer. The abdominal cavity which was contaminated with feces was washed with warm isotonic serum. The patient was manually released of the fecaloma primarily from the abdomen and secondarily from the anus. The 40 cm length of colonic segment which was affected by the perforation was resected. The proximal colon was cut by linear stapler. The colon that was disintegrated and distal segments were washed preoperatively. The distal rectum under peritoneal reflexion was cut with two endostapler devices. The Hartmann's closure was completed with an end colostomy. An aspiration drain was placed in the abdomen. A broad-spectrum antibiotic such as imipenem was started preoperatively. The patient was taken to the intensive care unit after the operation was over. On the following day end colostomy functioned. There was 100 cc serous and hemorrhagic liquid from the drain. The patient was extubated. After the second day, the patient was given oral liquid. The drainage was 60 cc also. However, in the evening of the second day, the patient had

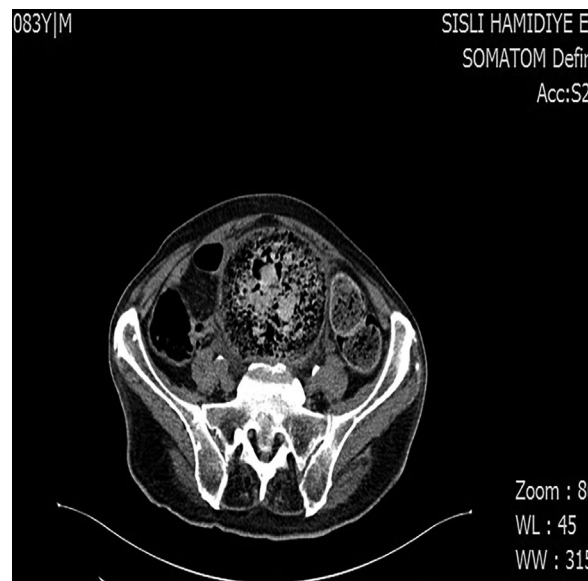


Fig. 2. Fecaloma at abdominal CT.

a heart attack and died. It should also be considered that there may be a perforation in the colon when free air is seen under the diaphragm, especially in elderly patients. The prognosis is poor in stercoral perforation due to abdominal contamination. Early diagnosis important as stercoperforation causes faecal peritonitis, which carries a high risk of morbidity and mortality.

### 3. Discussion

Severe chronic constipation presents a significant management problem which may, occasionally, necessitate surgical intervention [6]. The stercoral perforation is one of these situations. It is rare and can be seen in senior and immobile patients. The stercoral perforation is seen due to the ischemic necrosis in the colon caused by large fecaloma's pressure [7]. It is seen on the anti-mesenteric side. The increase of intraluminal and intra-abdominal pressure during defecation takes part in etiology [8]. Frequently it is seen in the rate of 47% in the sigmoid and 30% in the rectosigmoid colon [2]. In other parts of the colon it is seen by 33%. In the sigmoid and the rectosigmoid segments, the liquidity of the feces is low, blood circulation is weak and due to the narrowing of the intraluminal diameter of the bowel there is increase of pressure [7]. Generalized peritonitis is a late diagnosed clinical indication. Stercoral perforation is an urgent life threatening problem with immediate need of interference [8]. Mauer et al. suggest 4 criteria in the diagnosis of stercoral perforation [9].

These are:

- 1) Round or ovoid perforation of more than 1 cm in diameter on the colonic antimesenteric side.
- 2) The pile up of feces excess exuded to the colon perforation.
- 3) The existence of microscopic pressure ulcer and acute nonspecific inflammatory changes around the perforation area.
- 4) External injury, diverticulitis, lack of obstruction due to cohesion or tumor.

The rate of morbidity and mortality increases with age. While mortality is 15–30% in all emergency surgeries, this rate doubles with patients having concomitant diseases complicating matters, for patients over 75 years of age the rate increases even further [10]. Therefore it is important to take surgical approach of treatment in terms of mortality and morbidity with older patients who



Fig. 3. Fecal contamination due to stercoral perforation at abdominal CT.

are in need of care to take action as early as possible avoiding late diagnosis for diseases such as stercoral perforation which have an acute beginning process. The primary suture in the treatment can be decided according to the patient's status of what method to be used; suture and proximal colostomy, colostomy, intra-operative lavage and the Hartmann's closure. However suture and proximal colostomy have a rate of 57% mortality, just ostomy results in 43% mortality whereas Hartmann's closure is counted as the best surgical option with a mortality rate of 32% [5]. The interior of the abdomen must be washed with high amount of liquid and drained well [11]. Also the colon should be carefully checked for possible perforations or neoplasms. If the patient can be discharged, control colonoscopy is planned 3 or 5 months later.

#### 4. Results

Stercoral perforation is a rare problem generally seen in senior and immobile patients. Late diagnose of this situation have high mortality rate. We can save patient's life only with urgent action. The existence of chronic constipation and the acute abdominal pain is a life saver for diagnosis in such patients. It is important to prevent constipation from occurring initially in such patients. Chronic constipation may occur in elderly and debilitated patients cared for at home, can be prevented with a special diet and medical treatment. Emergency surgery is the only treatment option in the case of stercoral perforation. Radical efforts should be preferred (i.e., Hartmann's closure). The patient's abdomen must be washed with excessive fluids and broad-spectrum antibiotic therapy should be started. Cardiac arrest and sudden death due to cardiac reasons occur often in these risky and elderly patient population [12]. These patients should be monitored carefully following their discharge from hospital in order to prevent them from permanent constipation.

#### 5. Learning points

- Stercoral perforation should be kept in mind in differential diagnosis of any presentation of peritonitis in elderly patients with a background of chronic constipation,
- The authors could state that 'Early diagnosis is important as stercoral perforation causes faecal peritonitis, which carries a high risk of morbidity and mortality.'

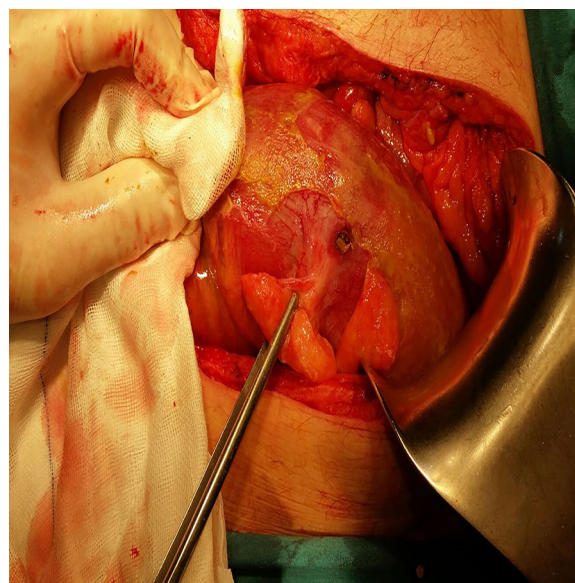


Fig. 4. Perforation at the antimesenteric side of the distal sigmoid colon.

- Early resection of the affected colon and extensive warm peritoneal lavage can keep the mortality rate low.

#### Conflicts of interest

All authors do not have disclose any financial and personal relationships with other people or organisations that could inappropriately influence (bias) their work.

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#### Ethical approval

We presented a case study, therefore there is no ethical approval.

#### Consent

Patient consent obtained.

#### Authors contribution

Celayir, Mustafa Fevzi: Study concept or design, data collection, data analysis or interpretation, writing the paper.  
Koksal, Hakan Mustafa: Study design.  
Uludag Mehmet: Reviewer.

#### Guarantor

Celayir, Mustafa Fevzi.

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