

# A rare occurrence of road accident: Stercoral colonic perforation

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## ABSTRACT

**Introduction:** Stercoral perforation of the colon is a rare complication of road accidents, it constitutes a surgical emergency, of which the prognosis, often gloomy, depends on the terrain and the speed of treatment. We report the case of a stercoral perforation of the colon that occurred in a 25-year-old patient whose diagnosis was made preoperatively on computed tomography (CT) and we try to recall the pathophysiology, clinical characteristics, and therapeutic modalities of this entity.

**Case Report:** We present the case of a 25-year-old patient, with a history of chronic smoking, consulted in the emergency department for a sub-occlusive syndrome evolving for less than 24 hours. An abdominal CT was conducted: The diagnosis of stercoral colonic perforation was retained. Due to the development of hypovolemic shock, the decision was to do a laparotomy with peritoneal lavage with colonic resection followed by an ostomy of the proximal segment and drainage of the abdominal cavity. The evolution was characterized by the discharge of the patient seven days after.

**Conclusion:** Stercoral perforation of the colon is a rare complication of abdominal trauma. The diagnosis, often difficult and delayed, must be known by all physicians caring working in trauma centers. Stercoral perforation of the colon is a surgical emergency, the prognosis of

which, often poor, depends on the terrain and the speed of treatment.

**Keywords:** Colon, CT, Perforation, Road accident, Stercoral peritonitis

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## INTRODUCTION

Stercoral perforation of the colon is a rare complication of road accidents, it constitutes a surgical emergency, of which the prognosis, often gloomy, depends on the terrain and the speed of treatment. We report the case of a stercoral perforation of the colon that occurred in a 25-year-old patient whose diagnosis was made preoperatively on CT and we try to recall the pathophysiology, clinical characteristics and therapeutic modalities of this entity.

## CASE REPORT

We report the case of a 25-year-old patient, with no medical history, who had consulted for abdominal pain following an abdominal trauma. She developed nausea and constipation 8 hours after the shock. Abdominal palpation found generalized abdominal defense to maximum at the hypogastric level. The digital rectal examination had caused pain in Douglas's pouch.

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The physical examination found the following: Respiratory rate: 36 breaths per minute, pulsed oximetry: 95% with 6 L/min of oxygen, heart rate: 134 bpm, blood pressure: 70/40 mmHg, Glasgow score: 15, and fever: 39.5°C.

A blood analysis was done showing an anemia 8 g/dL, leukocytosis 30,000 element/mm<sup>3</sup> and an elevated C-reactive protein (CRP) at 325. Her arterial blood gas test showed a severe metabolic acidosis with hyperlactatemia.

The contrast-enhanced abdominal CT revealed moderate peritoneal effusion, associated with significant peritoneal infiltration and pneumoperitoneum (Figure 1). There was no evidence of hepatic, splenic, genitor-urinary, or bone trauma.

The patient was put on antibiotic therapy and operated by a midline laparotomy after a brief resuscitation. Exploration of the peritoneal cavity revealed advanced generalized peritonitis with the presence of false membranes and a purulent fluid, taken for bacteriological examination. We observed a perforation of the anterior face of the transverse colon, on the mesenteric edge, after an abundant peritoneal toilet, a resection of the perforated colon, a closure of the colonic distal edge, and connection of the proximal colon in ostomy (Figure 2).

The operation ended with drainage of the peritoneal cavity. The surgical specimen was sent for anatomopathological examination. The patient made an uneventful recovery and discharged. Pathological examination of the surgical specimen did not show any tumor, inflammatory colonic pathology, diverticulosis.



Figure 1: Axial view of a contrast-enhanced CT in portal phase: thick peritoneal effusion with enhancement of the peritoneal layers.

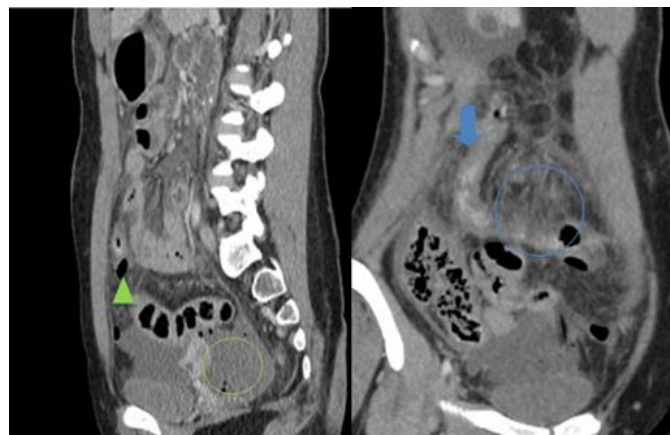


Figure 2: Axial view of a contrast-enhanced CT in portal phase: flat transverse colon associated with pneumoperitoneum bubbles as well as mesocolic tearing.

## DISCUSSION

Stercoral perforation of the colon is a very rare complication of trauma which often requires immediate treatment. Colon perforation is usually caused by diverticulitis, trauma, malignant tumor, amoebic colitis, ischemic colitis, or ulcerative colitis. The stercoral perforation of the colon represents 3.2% of all colonic perforations [1].

Diagnosis of abdominal damage is important and sometimes difficult, as potentially serious or even fatal lesions may have few symptoms during the initial clinical assessment of the trauma patient. Thus, in closed trauma to the abdomen, damage to the colon represents only 5% of traumatic lesions, but their morbidity and mortality are relatively high due to frequent diagnostic delay. Indeed, for a long time, the imaging diagnosis was uncertain and if imaging has proved its worth in detecting traumatic lesions of solid organs, it is not quite the same for lesions of hollow organs which remain, despite technological progress, difficult to diagnose in an emergency. Trauma to the digestive tract includes both parietal lesions of the hollow organs themselves, but also lesions of the mesentery, the mesos and the greater omentum. They are found in 5% of laparotomies motivated by a closed abdominal trauma [2], generally violent, and in more than half of times, it is a road accident [3].

In almost 50% of cases, mesenteric damage is associated with other traumatic visceral lesions [4].

Colonic lesions are infrequent, representing less than 5% of traumatic digestive lesions [5]. Colonic ruptures are most often intraperitoneal, preferentially affecting the transverse, then the cecum and the sigmoid. In severe forms, with avulsion of the meso and section of the colon, the right and left colon are the most affected [6].

Three types of lesions can be observed [1]: mesocolic laceration, which causes vascular lesion with meso hematoma, colonic ischemia, and intramural hematoma, which may be asymptomatic or cause an occlusive

syndrome. This intramural hematoma progresses either toward spontaneous healing, or toward perforation or even toward stenosis; colonic laceration of which three types are distinguished, seromuscular tear, complete tear, and complete section.

The stercoral perforation of the colon mainly affects the often fragile elderly subjects. This was the case with our patient who was 25 years old and had no co-morbidities. It can also occur exceptionally in young patients [2].

The clinical pictures of stercoral perforations of the colon are highly variable and polymorphic. The typical form is that of a perforation of a hollow organ creating a picture of acute peritonitis with defense or even abdominal contracture, a biological inflammatory syndrome and radiological pneumoperitoneum [7]. The frequency of less symptomatic and misleading forms, because the long history of chronic constipation can lead to neglecting complaints of abdominal pain, and the absence of radiological pneumoperitoneum often make a positive diagnosis very difficult [8]. Although the clinic was that of acute peritonitis, in our patient, the diagnosis of stercoral perforation of the colon was evoked preoperatively given the traumatic context. The most useful examination for the diagnosis of traumatic perforation of the colon is the abdomino-pelvic scanner which can show a discontinuity of the intestinal wall [9].

The differential diagnosis of stercoral perforation of the colon arises with the other causes of colonic perforation, namely neoplastic, diverticular, inflammatory, infectious, ischemic, or traumatic lesions [10, 11].

Stercoral perforation of the colon is a surgical emergency. Once the diagnosis is made, resuscitation and antibiotic therapy must be started urgently. Antibiotic therapy must be adapted to the result of intraoperative bacteriological samples. The most recommended procedure is a Hartmann procedure with drainage of the abdominal cavity [8, 12]. Externalization on a rod of the perforated colon as an ostomy is possible, but a biopsy must be systematic in order to rule out other diagnoses, mainly that of neoplastic lesion.

Colonic resection removing the perforated colon associated with a colorectal anastomosis can be performed straight away with or without a stoma in case of low peritoneal contamination [8, 12]. Depending on the extent of the lesions and the distension of the upstream colon, resection may be more extensive up to subtotal colectomy with ileorectal anastomosis. In all cases, an abundant peritoneal toilet must be done. An intraoperative colonoscopy is recommended by some authors in the search for stercoral ulcerations so that colonic resection eliminates them [8, 12].

In our case, the procedure performed was an externalization of the perforated colon with segmental resection of the ischemic part associated with drainage of the peritoneal cavity. The prognosis for stercoral perforation of the colon is very poor with a high mortality rate and significant morbidity.

This is due to the delay in diagnosis and consequently in care due to the diagnostic difficulty, and to the terrain on which it occurs with elderly patients with comorbidities and in very poor general condition.

Mortality secondary to stercoral perforation is very high and varies according to the series, reaching 35% in the literature and going up to more than 50% [3, 5].

In our case, there was a good outcome due to appropriate management. This development is due to the patient's age and the prompt treatment since the symptoms have been evolving for less than 24 hours. In surviving patients, efforts should be made to combat constipation through diet and drug treatment. After the intervention, closure of the colostomy must be cautious and performed over a median period of time of three months from our center experience.

## CONCLUSION

Stercoral perforation of the colon is a rare complication of abdominal trauma. The diagnosis, often difficult and delayed, must be known to all physicians caring working in trauma centers. Stercoral perforation of the colon is a surgical emergency, the prognosis of which, often poor, depends on the terrain and the speed of treatment.

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**Author Contributions**

Ayouche Othman – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Toufga Zakariya – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Meriem Edderai – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Hassan Boumdin – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related

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Hassan Ennouali – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Written informed consent was obtained from the patient for publication of this article.

**Conflict of Interest**

Authors declare no conflict of interest.

**Data Availability**

All relevant data are within the paper and its Supporting Information files.

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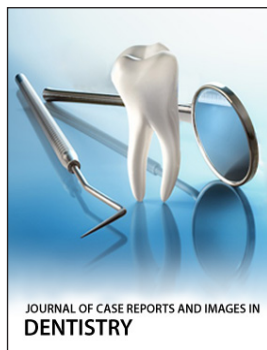
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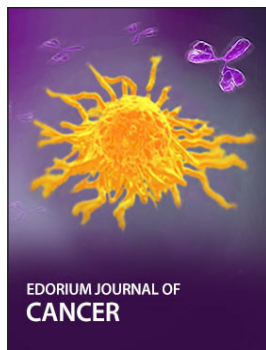
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