

# Spontaneous Rectal Perforation: A Rare Occurrence

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## ABSTRACT

Spontaneous perforation of the colon or rectum is a rare cause of acute abdomen in surgery. The presentation of this entity is similar to any other cause of peritonitis and preoperatively remains a diagnostic dilemma. We report a case of a 56-year-old man who presented with spontaneous rectal perforation and an emergency laparotomy

was performed. Surgeons should be aware of the possibility of this fatal disease and despite its rare incidence, it is important to recognize this condition at an early stage because it has high mortality if not treated early. Conversely, the surgical outcome is satisfactory provided surgery is performed in due time.

Keywords: Rectal Perforation; Spontaneous; Peritonitis

## INTRODUCTION

Gastrointestinal perforation is a common entity in surgical practice leading to acute abdomen. The perforation in rectum occurs usually in cases of pre-existing pathologies, trauma, or iatrogenic injury; however, spontaneous perforation is very rare [1]. There are no specific clinical manifestations of the disease and it usually results in severe peritonitis. Early general surgical exploration is required to reduce the mortality rate. We report one such rare case of peritonitis due to spontaneous perforation of the rectum, which was successfully managed surgically.

## CASE REPORT

A 56-year-old male was referred to our hospital with physical signs of diffuse peritonitis. There was history of constipation for the last 11 days with gradually increasing abdominal pain accompanied by abdominal distention for 3 days prior to admission. The patient had complaints of constipation and abdominal pain for the past one year and he had to take laxatives to empty his bowel. He had no history of abdominal surgery, rectal prolapse, or abdominal trauma. There was no family history of similar complaints or

gastrointestinal cancers. On examination, the general condition was poor, pulse rate was 140 beats/minute, blood pressure was 96/64 mmHg and temperature was 101°F. The whole abdomen was rigid with rebound tenderness. Bowel sounds were absent. Rectal examination revealed an empty rectum without any mass and no possible cause of constipation could be detected in the preoperative period. The white blood cell count was markedly high and X-ray chest showed gas, especially under the right dome of diaphragm. Ultrasonography was performed to assess any associated abnormality. However, it only revealed diffuse ascites with internal echoes. An emergency exploratory laparotomy was carried out for perforation peritonitis after initial resuscitation. Intraoperatively about 500 ml of purulent fluid with some fecal sediment was found in the lower abdomen and a perforation of approximately 1 cm diameter was identified in the anterior rectal wall proximal to the peritoneal reflection. It is important to note that there was no diverticular disease of the colon which could have resulted in perforation. A simple closure of the perforation followed by a loop colostomy of the transverse colon was performed after thorough irrigation of the peritoneal cavity. Biopsy was taken around the edge of the perforation for histopathological examination.

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**Figure 1:** Intraoperative picture showing rectal perforation with Ryle's tube in situ



**Figure 2:** Postoperative picture showing tension sutures with colostomy



Due to gross edema of the small bowel, abdomen could not be closed primarily and a urobag was cut open and attached to the abdominal wall. The patient was put on elective ventilatory support for three days to avoid increase in intraabdominal pressure and to reduce the gut edema. On 4<sup>th</sup> postoperative day, tension sutures were placed to close the abdominal wall and the patient was extubated on the 5<sup>th</sup> postoperative day. The postoperative period was uneventful. Histopathological findings of the tissues around the perforation revealed necrosis with infiltration of inflammatory cells. In the follow-up, both colonoscopy and barium enema studies were performed which did not reveal any obstruction or mass and the colostomy was successfully closed after a period of three months.

## DISCUSSION

The incidence of spontaneous perforation of the sigmoid colon or rectum is very rare. It can occur in all age groups, the youngest reported case being six years old and the oldest ninety six years old [2]. The perforation is often associated with a luminal pressure during defecation with a pre-

existing pathology such as diverticulosis, colitis, ulceration, malignancy, adhesions, irradiation, rectal and uterine prolapse, or as a consequence of iatrogenic injuries and blunt trauma to abdomen [1]. Chronic straining due to pre-existing diseases causes progressive deepening of rectovesical and rectouterine pouches leading to thinning of the rectal wall. Various theories have been proposed, in an effort to explain the mechanism of spontaneous rectal rupture. Among them the most prevailing are: 1) intramural hematoma formation resulting in dissection and weakening of the rectal wall, 2) congenital anal dysplasia coexisting with a weakened area of the rectal wall and 3) progressive deepening of the pouch of Douglas in combination with sudden increase of intraabdominal pressure could cause "rupture" of the rectum [3]. The perforation occurs almost always in the distal part of the colon because of the physiological characteristics of rectosigmoid colon such as lower water content of the stool, relatively poor blood supply and high pressure due to the narrowed intraluminal diameter [4] and it involves the anterior wall of the rectum just proximal to the peritoneal reflection at the anti-mesenteric border of the rectosigmoid junction [4]. In most cases, it presents with diffuse peritonitis and X-ray chest shows air under subphrenic spaces. The treatment of this entity requires urgent surgical exploration with closure of the perforation and a diversion colostomy. The gut continuity may be restored after 3 or 4 months of surgery [5]. It is important to bear in mind that in patients with severe contamination, septic shock and delayed treatment, the mortality rate is over 60% [6].

## CONCLUSION

Rectosigmoid perforation is one of the important causes of acute abdomen and should always be suspected when a patient with chronic constipation presents with severe abdominal pain. The mortality rate for this condition is very high, although its incidence is very low and timely intervention can save the life in most cases.

## REFERENCES

1. Tokunaga Y, Hata K, Nishitai R, Kaganoi J, Nanbu H, Ohsumi K. Spontaneous perforation of the rectum with possible stercoral etiology: report of a case and review of the literature. *Surg Today* 1998; 28:937-939.
2. Schein M, Decker GAG. Spontaneous perforation of the rectum. *SAMJ* 1986; 69:388-389.
3. Penopoulos V, Maris T, Gougoulas N, Christianopoulos G, Kokozidis G, Kitis G. Spontaneous extraperitoneal rupture of the rectum. *Ann Gastroenterol* 2002; 15:186-189.

4. Demirağ A, Nurlu H, Gürer A, Türkyılmaz Z, Oğuz M. Spontaneous perforation of rectum and rectosigmoid junction. Case report. *Mater Med Pol* 1993; 25:47-48.
5. Zhang J, Jian-bin WU. Diagnosis and treatment of spontaneous colonic perforation: report of 9 cases. *China General Surg* 2005; 10:769-771.
6. Hikita H, Kaneko G, Horigome N, Senga O, Wada Y. Spontaneous perforation of the rectosigmoid colon: a report of 2 cases. *Chin Med J* 2001; 114:431-432.