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Stercoral perforation of the colon in sigmoid colostomy patients: Two case reports[☆]

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ABSTRACT

INTRODUCTION: Stercoral perforation of the colon has rarely been reported. Only 3 cases of stercoral perforation of the colon proximal to an end colostomy have been reported. We present two cases of stercoral perforation of the colon in end colostomy patients.

PRESENTATION OF CASE: A 70-year-old man who had undergone abdomino-perineal excision for anal cancer was referred for left lower quadrant pain and fever. Stercoral perforation was discovered along the distal descending colon, proximal to the end sigmoid colostomy. The patient underwent segmental resection of the colon and revision of the stoma and was discharged on postoperative day 32. A 71-year-old woman who had undergone abdomino-perineal excision for distal rectal cancer with preoperative chemoradiation presented fever with 2 days of low abdominal pain. The patient had sacral bone and lung metastases from rectal cancer and suffered from chronic constipation. Stercoral perforation was found around the sigmoid colon, just proximal to the end sigmoid colostomy. The patient underwent simple repair of the perforated colon through the parastomal incision. On postoperative day 8, leakage occurred at the repair site. Segmental resection of the colon and revision of the stoma were performed. She was discharged 44 days after the initial surgery.

DISCUSSION: Segmental resection of the perforated colon, rather than simple repair, appears to improve postoperative outcomes.

CONCLUSION: As the number of cancer survivors increases, appropriate management of constipation is important to prevent stercoral perforation during follow-up.

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1. Introduction

Stercoral perforation of the colon, or “perforation of the colon caused by ischemic pressure necrosis due to hard stool or fecaloma”, has rarely been reported. Since the first description by Berry in 1894¹ fewer than 100 cases were reported in the literature up to 2006. Among these cases, there have been only 3 cases of stercoral perforation of the colon proximal to an end colostomy. Gekas and Schuster² reported a case of stercoral perforation in a patient following transverse end colostomy for automobile accident injuries. Serpell et al.³ reported two cases of recurrent stercoral perforation of the colon as an early postoperative complication in a patient undergoing end colostomy for stercoral perforation.

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We present two cases of stercoral perforation of the colon in end colostomy patients who underwent abdomino-perineal excision.

2. Presentation of cases

Case 1. A 70-year-old man was referred to the emergency room and complained of left lower quadrant pain and fever on that morning. He had undergone abdomino-perineal excision for anal cancer 10 years prior and received adjuvant chemoradiation. The patient had type 2 diabetes and chronic constipation based on Rome III criteria,⁴ and had been diagnosed with subclinical hypothyroidism but had arbitrarily stopped medication 3 years prior. An abdominal computed tomography scan demonstrated multifocal air pocket along the distal descending colon, proximal to the end sigmoid colostomy (Fig. 1). The patient underwent segmental resection of the colon and revision of the stoma. There was 3 cm × 3 cm perforation at the antimesenteric border of the colon, 4 cm proximal to the stoma. Following surgery, the patient suffered postoperative ileus due to stool impaction in the proximal colon and methicillin-resistant *Staphylococcus aureus* pneumonia. He was discharged on postoperative day 32. The patient has done well for 10 months.

Case 2. A 71-year-old woman was referred to the emergency room and presented fever with 2 days of low abdominal pain. She had undergone abdomino-perineal excision for distal rectal cancer

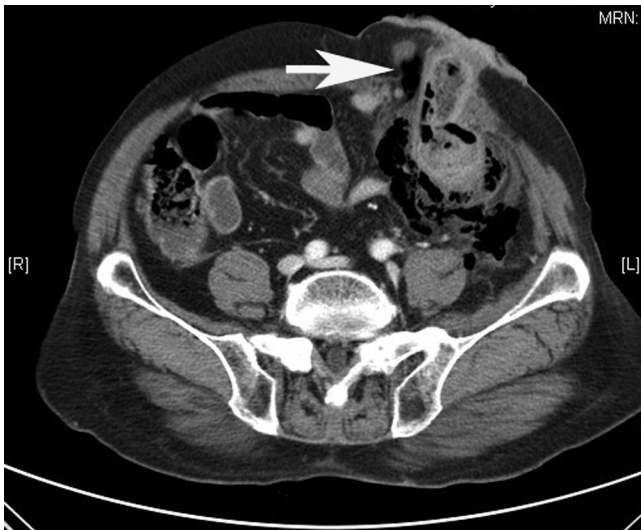


Fig. 1. An abdominal computed tomography scan shows multifocal air pocket along the distal descending colon, proximal to the end colostomy site in a 70-year-old man (white arrow).

following preoperative chemoradiation 25 months prior. Sacral bone recurrence and lung metastasis were found 3 months and 23 months after surgery, respectively. The patient received opioid medication due to bone pain and had severe constipation compatible with Rome III criteria.⁴ An abdominal computed tomography scan demonstrated an abscess cavity around the sigmoid colon and the anterior abdominal wall (Fig. 2). She underwent simple repair of the perforated colon through the parastomal incision. There was 3 cm × 3 cm perforation in the antimesenteric side of the sigmoid colon between the intra- and extraperitoneal layer. On postoperative day 8, leakage occurred at the repair site (Fig. 3). Segmental resection of the colon and revision of the stoma were performed. The patient suffered deep vein thrombosis in the left iliac vessel during the postoperative period and was discharged 44 days after the initial surgery. The patient is receiving palliative care for lung and bone metastases and has continued to suffer constipation and bone pain over 2 months of follow-up visits.



Fig. 2. An abdominal computed tomography scan shows a cavity with mottled air density and peripheral fatty infiltration in the anterior abdominal wall, suggesting abscess formation, in a 71-year-old woman (white arrow).

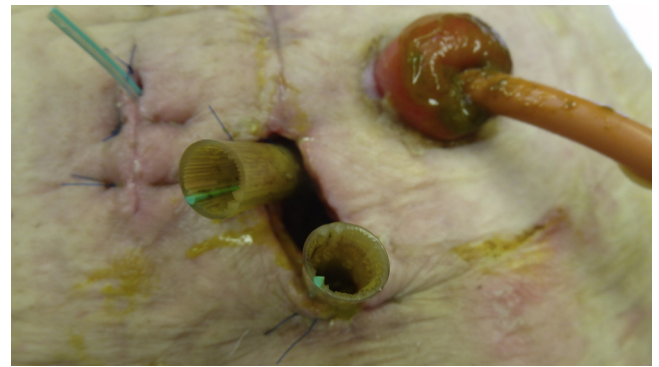


Fig. 3. Leakage after simple closure of the perforated colon on postoperative day 8. This picture shows fecal materials from the parastomal incision site.

3. Discussion

Our series is unique in that the cases of stercoral perforation occurred in colostomy patients who had undergone abdomino-perineal excision for anal and rectal cancer. The primary cause of stercoral perforation is constipation, a condition frequently present in patients with colostomy or hypothyroidism, and in patients taking medications including opioids or tricyclic antidepressants.⁵

It is uncertain how many colostomy patients suffer constipation, but the incidence is likely to be similar to the general population of 27% and to be higher in the elderly.⁶ In this study, chronic constipation was not treated regularly before colonic perforation. The first patient had underlying hypothyroidism and the second patient was undergoing palliative care for local and distant recurrences of rectal cancer. The prevalence of constipation is estimated to be as high as 48 percent in patients receiving palliative care.⁷ The pathogenesis of stercoral perforation is thought to be ischemic pressure necrosis of the colonic wall due to dehydrated fecaloma.² Stercoral perforation frequently occurs at the sigmoid or rectosigmoid colon because these regions have less distensibility, a more narrow diameter, and slower transit time compared with other colonic regions.²

Once diagnosis is made, tailored surgical options should be based on comorbid conditions, preoperative imaging, and degree of fecal peritonitis. Guyton et al.⁸ proposed that segmental resection and exteriorization, or Hartmann's procedure, is superior to either loop colostomy, simple exteriorization or proximal colostomy for repair of the perforation in terms of operative mortality. In our second case, simple repair of the perforation was performed initially because of the patient's poor general condition. Ultimately, she required colon resection and revision of the stoma due to postoperative leakage. Durrans et al.⁹ described two prerequisites that are necessary for limited resection. One is that the stool-filled proximal colon needs to be cleared and the other is that, following reanastomosis, recurrent constipation needs to be adequately treated.

4. Conclusion

Although stercoral perforation of the colon in patients with colostomy is very rare, the occurrence of stercoral perforation should not be overlooked in patients with chronic constipation. As the number of cancer survivors increases, appropriate management of constipation including with laxatives, enema, or high fiber diet is important to prevent stercoral perforation during follow-up. Segmental resection of the perforated colon, rather than simple repair, appears to improve postoperative outcomes.

Conflict of interest

The authors have no conflicts of interest, financial or otherwise, to disclose.

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Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Authors contribution

Ik Yong Kim designed the work, Hyun Jun Kwon did data collection and Young Wan Kim did writing the paper.

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