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Case report

Evisceration of small bowel through spontaneous perforation of rectum: Case report and review of literature

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ABSTRACT

Introduction: Small bowel evisceration through spontaneous perforation of the rectum is an extremely rare condition in which the small bowel herniates mostly through a defect in the anterior rectal wall.
Case presentation: We present the case of a 25-year-old otherwise healthy lady who denied any history of rectal prolapse or trauma.
Discussion: Small bowel evisceration through rectum is a rare surgical emergency with a mortality rate as high as 42.3%. Apart from trauma, chronic constipation, rectal prolapse, presence of a deep Douglas pouch and a sliding hernia formed by the cul-de-sac have also been described as etiological factors.
Conclusion: It is extremely difficult to find out the actual cause of "spontaneous" small bowel evisceration, especially in young adults.

1. Introduction

Trans-anal small bowel evisceration is an extremely rare condition. Since Benjamin Brodie documented the first case in 1827 [1], to our knowledge more than 70 cases have been reported in the scientific literature [2,3]. We report a case of trans-anal small bowel prolapse in an otherwise healthy 25 years old woman. This case has been reported in line with the SCARE criteria [4].

2. Case presentation

A 25-year-old housewife was brought to the emergency room of our hospital early in the morning, complaining of abdominal pain and prolapse of bowel loops per rectum, following defecation 3 hours ago. While having a history of a short period of rectal bleeding two years back during pregnancy, she denied any history of rectal prolapse or rectal trauma/penetration. Her drug history, family history and psychosocial history were unremarkable.

On physical examination the patient was hemodynamically stable, but looked terrified. Her pulse rate was 95/min and blood pressure 110/75 mmHg. Abdomen was soft, but tender on deep palpation without rebound tenderness. About 50 cm of purple colored small bowel loops were extruding from the anus (Fig. 1).

On rectal examination, the rectum was wide and filled with small bowel loops and serous fluid resembling intraperitoneal fluid, indicating rectal perforation. The bowel loops were washed with warm saline and gently reduced to avoid further ischemia. A tampon was placed to prevent re-prolapse of bowel loops while patient was being prepared for laparotomy. The diagnosis of rectal perforation was made, with suspicion of rectal trauma/penetration; however, the patient denied any rectal trauma/penetration.

The patient was prepared for emergency surgery. Laparotomy was done through lower midline incision by the surgery team (A consultant surgeon, a specialist surgeon and a junior resident). The peritoneal cavity was clean with no sign of blood or contamination. About 100 cm of small bowel loops nearly 60 cm away from the ileo-cecal valve had entered the rectum through a 7 cm longitudinal tear on anterior aspect of intraperitoneal part of the rectum. The bowel loops were gently recovered from within the rectum; they were congestive and edematous, but viable (Fig. 2). The laceration (Fig. 3) was primarily repaired in two layers and a protecting colostomy (Hartmann's) was created. Abdomen was closed in usual way. Parenteral antibiotics was given for 5 days.

Postoperatively, patient's condition progressively improved, and she was discharged on the 7th postoperative day in good condition.

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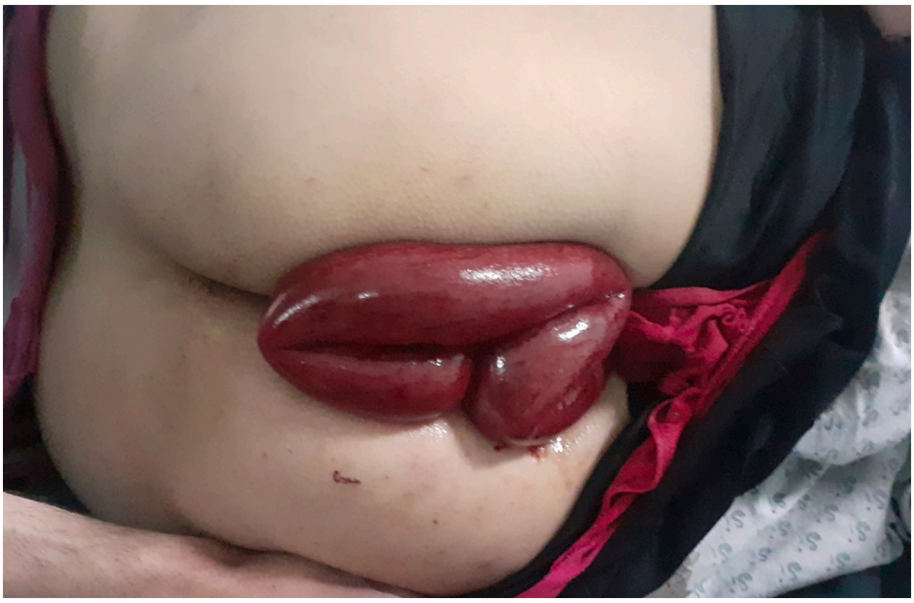

Fig. 1. Presentation in the Emergency Room.

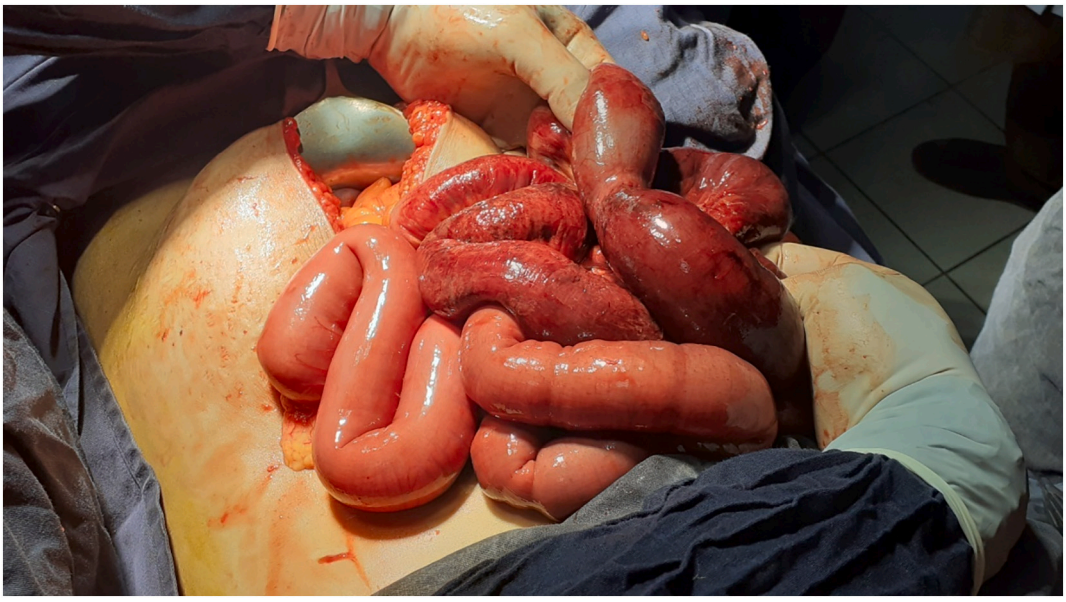

Fig. 2. Prolapsed small bowel loops after reduction from within the rectum.

Colostomy was successfully reversed after 3 months.

3. Discussion

Small bowel evisceration through rectum is a rare surgical emergency with a mortality rate as high as 42.3% [1]. Based on the reviews by Wrobleski and later Morris, spontaneous small bowel evisceration per rectum occurs more frequently among elderly women, some having rectal and uterine prolapse concurrently [1,5–7]. Although the exact etiology of this phenomenon is not clearly known, chronic rectal prolapse has been linked to this pathology as a predisposing factor [3,8–11]. In some cases, however, like our case, the patients did not have any history of rectal prolapse [1,12–16].

Apart from trauma, etiological factors associated with pathologic process to thinning of the anterior rectal such as chronic constipation, rectal prolapse, presence of a deep Douglas pouch and a sliding hernia formed by the cul-de-sac have also been described [1,2,5,13]. Prassas et al. reported a case of local ischemic lesion with history of intermittent rectal bleeding in which they demonstrated a "direct etiopathogenic link between a documented local ischemic lesion and the rectal tear that consequently led to the trans-anal bowel evisceration" [13].

The most commonly reported precipitating event has been defecation and other events that abruptly increase abdominal pressure such as straining at micturition, vomiting, coughing, parturition, weight lifting and blunt trauma have also been reported [1,5,12,15]. Trinadade et al. and Chetty et al. reported cases of Trans-anal small bowel evisceration after digital reduction of the prolapsed rectum [17,18]. Denis Allard raises the question of "whether or not we believe our patient", about "spontaneous" rupture of rectum and evisceration of small bowel, and suggests to be cautious about determining its etiology [19]. In the present case, we found ourselves in a similar position. The patient who was mother of 2 children, did not have any history of rectal prolapse or other

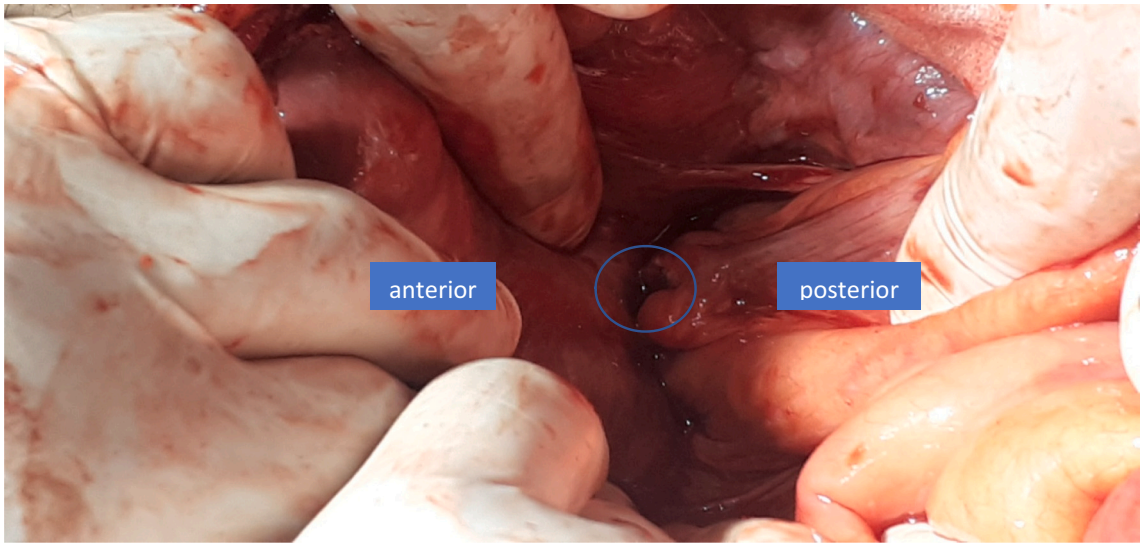

Fig. 3. Rectal wall laceration (surrounded by the circle).

predisposing factors and denied any trauma or any kind of penetration to her rectum. The actual cause of the rectal perforation could not be found.

Trans-anal small bowel evisceration requires urgent surgical management and basic principles of abdominal trauma should be followed to treat this condition [5]. It is recommended that the eviscerated bowel washed with warm normal saline solution and covered with sterile towels or gently reduced while the patient is prepared for laparotomy. However, some authors suggest that reduction of the prolapsed bowel loops should be avoided at this time [2,13]. Resection of the non-viable bowel loops prior to laparotomy has also been proposed [11].

Commonly laparotomy is performed through a midline incision, although Antony et al. have reported laparoscopic repair [14]. Small bowel and mesentery are gently reduced and inspected for viability. Non-viable segments must be resected. The rectal perforation can be primarily closed in one or two layers with protecting end or loop diverting colostomy, or in in presence of extensive rectal pathology resection of the rectum with construction of an end-colostomy may be performed. Although several authors reported successful outcomes without colostomy, there were no mortality in cases managed with Hartmann's procedure. Simultaneous treatment of the causative factor such as rectopexy for rectal prolapse should also be considered [1,3,11,13,20] If left untreated, this condition has 100% mortality, but with proper treatment the mortality rate is reduced significantly [2]. It is suggested that to prevent this rare condition, its predisposing factors such as rectal prolapse and uterine prolapse should be treated before the development of complications, especially in elderly patients [15].

4. Conclusion

Small bowel evisceration through spontaneous perforation of the rectum is a rare surgical emergency. Although rectal prolapse was commonly suggested as its main predisposing factor, cases without rectal prolapse have also been reported. It is extremely difficult to find out the actual cause of “spontaneous” small bowel evisceration, especially in young adults.

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Ethical approval

This study was approved by the Ethics Committee of Isteqlal Hospital, Kabul, Afghanistan.

Consent

Written informed consent was obtained from the patient 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 on request.

Research registration

Not applicable.

Guarantor

Wais Farda and Mohammad Omar Shaban.

Provenance and peer review

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CRediT authorship contribution statement

Mohammad Omar Shaban, Mohammad Salem Sadeq and Hedayatullah Mangal: Conceptualization, writing – original draft. and: Wais Farda, Mohammad Ibrahim Hail and Shogoofa Barakzai: writing – review and editing.

Declaration of competing interest

The authors declare that there is no conflict of interest in this paper.

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