

Acute Transanal Evisceration of the Small Bowel

Report of a Case and Review of the Literature

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We report a patient who presented with rectal rupture and transanal evisceration, a rare entity with only 52 cases previously described in the world literature. Our case is the first to implicate sheer stress on the anterior rectum caused by postoperative adhesions as the major etiologic contributing feature. Moreover, this case is the third reported with chronic constipation without rectal prolapse as an additional preexisting contributory condition. A summary of the medical literature including etiology, treatment, and outcomes is presented. [Key words: Rectum; Rupture; Rectal prolapse; Transanal evisceration; Review]

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Rectal or rectosigmoid rupture with transanal evisceration is an uncommon event associated with a dramatic patient presentation. Since the initial account of Brodie in 1827,¹ the total number of reports has been quoted recently at 43.²⁻⁴ While investigating the case described, we discovered a total of 52 previously reported cases, which also are summarized and discussed.

REPORT OF A CASE

An 86-year-old female with cerebral palsy, dementia, and chronic obstructive pulmonary disease presented to the emergency department from her foster home with a chief complaint of a mass hanging from her anus after using the commode. The patient had undergone a previous hysterectomy and had a history of chronic constipation, but no previous history of rectal prolapse. On physical examination, vital signs

were stable. The abdomen was soft and diffusely tender. Approximately 30 inches of dusky small bowel protruded from the anus. A limited digital rectal examination revealed decreased sphincter tone and no palpable rectal wall defects. During the examination, the patient vomited, leading to extrusion of additional small bowel and mesentery.

The patient was urgently taken to the operating room and placed in dorsal lithotomy position. The abdomen was entered via low midline incision and bowel was gently reduced. A 3-cm transverse tear was noted at the low anterior rectum, adjacent to adhesions of the vaginal cuff to the anterior rectal wall (Fig. 1). Margins were clean without evidence of stercoral erosion; however, adjacent tissue was thinned, consistent with chronically increased wall tension. Duskiness of the reduced small bowel did not resolve, and therefore, 70 cm of nonviable jejunum were resected, followed by an end-to-end anastomosis. A Hartmann procedure was performed, with resection of the torn rectum and a stapled rectal stump closure.

Postoperatively, the patient was taken to the surgical intensive care unit intubated. Because of the severity of her chronic obstructive pulmonary disease, the patient required aggressive pulmonary toilet for eventual weaning from the ventilator on postoperative Day 3. Nasoduodenal tube feedings were begun on postoperative Day 4. On postoperative Day 7, the patient developed tachypnea and a right-sided pulmonary infiltrate, consistent with aspiration pneumonia. Because the patient's family had previously requested no extraordinary lifesaving interventions, comfort measures were instituted. The patient was transferred to a skilled nursing facility on postoperative Day 14, where she subsequently died on postoperative Day 19.

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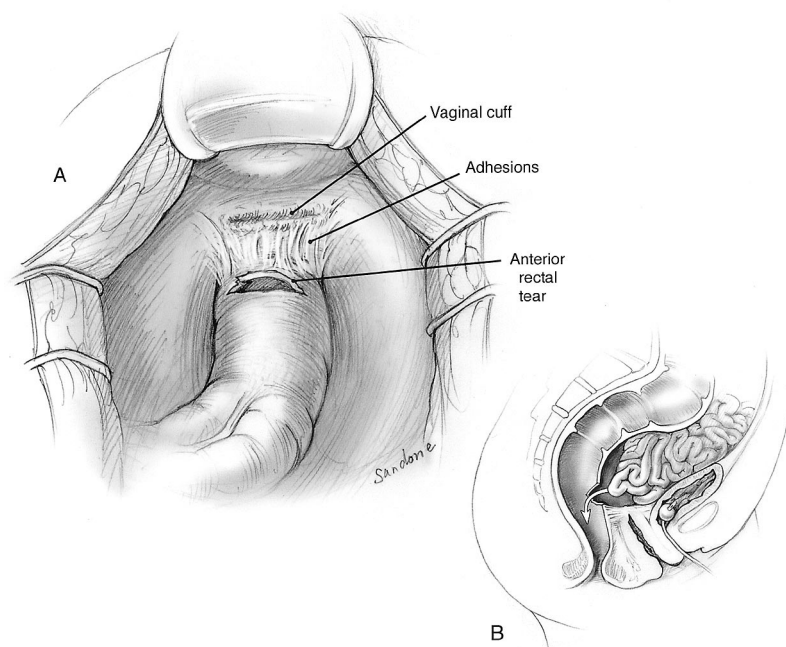


Figure 1. Transverse tear in the low anterior rectum. A. Operative view of transverse tear proximal and adjacent to densely adhered vaginal cuff. B. Sagittal view of chronic adhesion traction leading to tear and extrusion of small bowel into rectal lumen.

DISCUSSION

Rectal or rectosigmoid perforation with transanal small bowel evisceration is a remarkable occurrence because of its rarity and extraordinary presentation. An extensive MEDLINE search and review of cited references indicates that 53 cases (including the above-mentioned) have been reported (Table 1¹⁻²⁷). Seventy percent of cases overall were associated with a history of rectal prolapse, 66 percent of patients overall were female, and 67 percent of the 24 patients with orientation noted had longitudinal tears. The most prevalent etiologic hypothesis attributes the pathologic process to thinning of the anterior rectal wall caused by chronic prolapse, presence of a deep cul-de-sac allowing small bowel to accumulate and impinge on the rectum, and a precipitating event of increased abdominal pressure such as defecation or blunt trauma leading to rupture of tissue at the vulnerable site. Our patient is the third reported to have chronic constipation without rectal prolapse as a pre-existing condition, which may have been exacerbated by phenothiazine medication and bedridden status. Previous cases citing only preexisting chronic constipation have suggested similar influences.^{5,6} Notably, our patient also had dense adhesions of the posthysterectomy vaginal cuff to the anterior rectal wall with

Table 1.

Review of Outcomes* in the Medical Literature¹⁻²⁷

	Recovery (n = 30)	Death (n = 22)
Mean age (yr) (SD)	66.4 (23.5)	58.8 (18.5)
Female gender	63	73
History of prolapse	60	86
Transabdominal repair	93	50
Colostomy†	53	45

Figures are percentages unless otherwise indicated.

* One patient had unknown outcome.

† Among the 22 patients who died, 11 had operations. Five of those 11 (45 percent) underwent colostomy during operative treatment.

an enlarged cul-de-sac entrance, allowing extensive small bowel to collect dependently. The appearance of the tissues coupled with a less common transverse tear suggested an etiology of long-term traction at the rectouterine fold. This unusual shear stress has been previously reported for one patient with third-degree uterine prolapse, no evidence of rectal prolapse, and a transverse tear.⁷

As in our patient, defecation is the most commonly noted precipitating event (Table 2). However, any Valsalva-type pressure, such as vomiting, coughing, or blunt abdominal trauma, may cause the initial tear. Iatrogenic measures, including attempted reduction

Table 2.
Precipitating Events

Event	n (%)
Defecation	21 (40)
Unknown, possibly spontaneous	16 (30)
Blunt trauma	8 (15)
Iatrogenic	3 (6)
Heavy lifting	2 (4)
Vomiting	1 (2)
Strain at micturition	1 (2)
Valsalva maneuver	1 (2)
Total	53

of prolapse or incision of "hemorrhoids," also have been cited. Four cases have been reported as entirely spontaneous, although sleeping during occurrence, patient dementia, or possibly patient embarrassment render these histories somewhat suspect. Not included in this report are those pediatric cases in the trauma literature associated with external suction pressure created by sitting on uncovered swimming pool drains²⁷⁻²⁹ or cases deemed attributable to congenital defect of the rectal wall.³⁰

Despite the alarming presentation of this condition, recommended surgical management follows basic abdominal trauma tenets. Small bowel and mesentery should be reduced via gentle traction-pulsion through an abdominal incision and gently cleansed. Resection of bowel is unnecessary if viability can then be established. The rectal tear should be closed in two layers, although success with single-layer closure has been reported. For protection of the repair, end or loop colostomy may be performed depending on the patient's comorbidity, but several authors describe successful outcomes without colostomy (Table 1).^{3,6,8-16} For an extremely fragile patient in whom end colostomy is planned, resection of the adjacent torn rectum may be the most expedient management alternative, as in the case presented.

Half of cases that included drain placement in the cul-de-sac describe postoperative wound infection, peritonitis, and/or sepsis, suggesting that thorough lavage may be more effective.^{9-11,17} Prophylactic antibiotics were generally used, as for our patient, although perioperative peritonitis, sepsis, and pneumonia certainly continued to occur.

Since 1963, repair of rectal prolapse or obliteration of the cul-de-sac during the initial operation also has been recommended.¹⁸ Among 24 patients with prolapse that was not repaired during their transabdominal operations, 5 patients later experienced prolapse

recurrence.^{9,11,14,17,19} If prolapse is present, we recommend repair during the initial operation for patients with minimal comorbidity and early repair for more attenuated patients.

CONCLUSION

We recommend traction-pulsion reduction through an abdominal incision, repair or resection of the rectal tear, thorough lavage, and repair of prolapse if present. Following the above-outlined surgical principles using modern medical resources has vastly improved prognosis of transanal evisceration, rendering it highly survivable in the present era.

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