



Case Report

Rectal Prolapse and Spontaneous Perforation Causing Transanal Evisceration of the Small Bowel: A Case Report. Clinical History May Predict this Condition

Meliga C^{1*}, Barambio Buendía J¹, Escanciano Escanciano M¹, González Soares S¹, Ortega López M¹, Pastor Idoate C², Domínguez Prieto V¹, Vélez Pinto F¹, Guadalajara Labajo H¹, García Olmo D¹

¹Department of General and Digestive Surgery, Hospital Universitario Fundación Jiménez Díaz, Madrid, Spain

²Colorectal Unit, university Clinic of Navarra, Madrid, Spain

***Corresponding author:** Cecilia Meliga, Department of General and Digestive Surgery, Hospital Universitario Fundación Jiménez Díaz, Madrid, Spain

Citation: Cecilia M, Barambio J, Escanciano M, Soares GS, Lopez OM, et al (2022) Rectal Prolapse and Spontaneous Perforation Causing Transanal Evisceration of the Small Bowel: A Case Report. Clinical History May Predict this Condition. Ann Case Report 7: 875. DOI: 10.29011/2574-7754.100875

Received: 17 June 2022; **Accepted:** 21 June 2022; **Published:** 23 June 2022

Abstract

Transanal evisceration of the small bowel following spontaneous rectal perforation is a rare condition, potentially lethal if not promptly treated. We present the case of an adult patient, with two previous surgeries due to rectal prolapse. After a strong effort to pass a bowel movement, the patient developed intense abdominal pain and became hemodynamically unstable. Diagnosed with transanal evisceration of the small bowel, the patient required an urgent laparotomy with small bowel reduction and Hartmann procedure. We performed a non-systematic review, with fewer than 100 documented cases of transanal evisceration reported in the literature. Cases can be divided into two main groups: traumatic lesions mainly affecting pediatric patients and spontaneous occurrence. 50% of spontaneous cases associate rectal prolapse, 75% involve an increase in intraabdominal pressure; the majority of cases (70%) occur during adult life (above 40 years old), with no sex-based differences (53% male vs 47% female). Transanal evisceration of the small bowel secondary to spontaneous rectal perforation presents more frequently in adult patients with chronic rectal prolapse and sudden increase of abdominal pressure. Urgent surgery must be performed in all cases to prevent small bowel ischemia. Choice of surgical procedure depends on clinical presentation, patient's comorbidity and age, surgeon's expertise and availability of equipment. We recommend exploratory laparotomy for better assessment of the viability of the small bowel.

Keywords: Transanal evisceration; Rectal prolapse; Spontaneous rectal perforation; Small bowel evisceration; Emergency surgery

Introduction

Small bowel evisceration through a spontaneous rectal perforation represents an infrequent surgical emergency, with the first case

described by Brodie in 1827 as a "singular" variety of hernia. Less than 100 cases have been published to date, with a high mortality rate reported when incomplete or suboptimal treatment is provided. Around 20 of the published cases belong to the pediatric population (age: 4 months-16 years-old), with different etiological factors from adults and trauma as the leading cause [1]. 9 cases were caused by transanal suction from a swimming pool drain [2,3], 6 due to

blunt abdominal trauma [4], 3 related to penetrating injury and 1 case in an infant caused by intense coughing [5]. In adult patients, this condition is usually caused by trauma (including iatrogenic perforation), and spontaneous perforation which etiology remains uncertain [6]. Most of the spontaneous cases have been reported in elderly patients associated with chronic rectal prolapse and an event of sudden increase of abdominal pressure [7-9]. Some cases have also been associated with uterine 3rd grade prolapse but with much lower incidence [10,11].

Case Report

We present the clinical case of a male patient, 39 years old, originally from Ecuador who was referred to our Emergency Department with hemodynamic instability, decreasing level of consciousness, abdominal and anal pain, and sensation of abdominal mass. No personal history of recent trauma, anal instrumentation, constipation, or sexual activity was referred. Patient's personal history included an Altemeier's procedure in 2006 for rectal prolapse, and a subsequent Laparoscopic Ventral Rectopexy with a polypropylene mesh for Prolapse recurrence. In addition, the patient was diagnosed with paranoid schizophrenia and personality disorder in 2010. When brought to the Emergency Department the patient was hemodynamically unstable with 110-120 bpm tachycardia, 24-30 breaths per minute tachypnea and 70/40 mmHg blood pressure; low level of consciousness (Glasgow coma scale 12-13) cyanosis and vascular redistribution were detected. After aggressive fluid resuscitation, further physical examination showed extrusion of most of the small bowel through the anus, with signs of venous congestion and no ischemia (as shown in Figure 1&2). Heavy transanal bleeding was also observed.



Figure 1: Surgical exploration at Lloyd-Davies's position.



Figure 2: Mesentery traction.



Figure 3: Rectal perforation, abdominal view.



Figure 4: Pull Trough and perineal view of the perforation.

The patient required Norepinephrine and opioid analgesics prior to surgery. Surgical approach through a medial laparotomy was performed with the patient in Lloyd-Davies's position in case a perineal approach was also needed. Surgical exploration found a large hemoperitoneum caused by a tearing of sigmoid mesocolon, and a longitudinal perforation of 10 cm on the anterior wall of the rectum (shown in Figure 3) with the whole small bowel eviscerating through it. The small bowel showed signs of ischemia, which improved and completely resolved after being gently reduced in the abdominal cavity through a perineal approach. The patient finally maintained hemodynamic stability. Hartmann procedure was performed: resection of the final portion of sigmoid colon and superior rectum was carried out and a terminal colostomy was formed in the abdominal left flank. It's important to mention the difficulty of retroperitoneal dissection since both ureters were medialized due to the previous surgical procedures. Minor pelvis was sutured, and an omental pedicle flap was fashioned. Rectal resection was performed using a pull-through technique (as shown in Figure 4), closing the rectal stump with barbed suture. The first 4 postoperative days required ICU management, with clinical improvement and recovery of gastrointestinal transit. The patient was discharged on the 14th postoperative day, with no postoperative complications except catheter infection. Surgical specimens submitted to Pathology observed macroscopic vessel dilatation, hematoma, and fibrosis. Microscopically, no signs of ischemia, muscular atrophy, elastic degeneration of the arteries nor nerve or lymph nodes inflammation were detected.

Discussion

Rectal perforation with spontaneous transanal small bowel evisceration is an infrequent surgical condition that can be fatal if not treated urgently. Direct clinical exploration leads to diagnosis [12]. It may occur at any age, with up to 70% of the cases being observed in patients older than 40 years. The incidence is not gender related (53% male vs 47% female). Half of the reported cases are associated with chronic rectal prolapse (as with our patient) and more than 75% of cases are linked to increased abdominal pressure [6,7,10]. This increase has been described as related to a greater defecatory "push" (50%), carrying heavy objects (15%), falls (9%), enclosure (6%) and vomiting (6%). Also, conditions such as grade 3 uterine prolapse (at least 3 cases), anal stenosis (related to neoplasia, syphilis and lymphogranuloma, 12.5%) and constipation, have been related to this condition [10]. In our case, the perforation occurred in the anterior surface of the rectum, matching 96.8% of the published cases. Usually, longitudinal perforations from 1 to 12 cm long are described [10,13]. Small bowel is the most frequently eviscerated structure, but also cases of greater omentum and redundant sigmoid colon evisceration have been reported [10,14]. Our patient presented hemodynamic instability when referred to the Emergency Department probably

due to a distributive shock related to severe pain. Exploratory laparotomy was performed to achieve a controlled reduction of the herniated bowel and to avoid mesenteric torsion. Laparotomy was useful to evaluate signs of bowel ischemia and offers the possibility of a practical posterior evaluation when leaving an open abdominal wound. Another approach described in Literature consists of performing evaluation and reduction of the bowel exclusively by transanal access, with transanal suture of the rectal perforation [15]. We consider this technique only adequate in elderly patients or high-risk patients with comorbidities, since a higher mortality has been reported [7,8], probably related to the lack of vascular control of the herniated bowel. Furuya et al. reported a case treated with an early transanal reduction to avoid necrosis, and a subsequent laparotomy to treat the rectal perforation, with adequate result [13]. We considered Hartmann's procedure to be adequate for our patient: we performed a distal portion of sigmoid colon and superior rectum resection, followed by a terminal colostomy. Primary suture of the perforation with protective colostomy was discarded because of the size of the perforation. Anterior rectal resection with colorectal anastomosis and protective ileostomy could have been a good alternative, but we obviated it due to the patient's critical condition. In a reported series [12], reduction of the evisceration without treatment of the perforation presented a 100% mortality rate. Primary suture of the perforation dropped mortality to 46%, and colostomy reduced it to 23%. There are 3 cases reported of Hartmann procedure with no mortality associated. Regarding the pathology report, no connective tissue alterations were found, but hematoma, capillary dilation, and fibrosis distal to perforation were described, matching Furuya et al.'s case findings [13]. No signs of malignancy or ischemia were reported [8]. These findings support Quenu's hypothesis [10]: the increase of intra-abdominal pressure drives the prolapsed rectum into the pelvis, causing continuous friction of the rectal wall, that relates to chronic inflammation, venous dilation, and intramural hematoma, which weakens the rectal wall and finally causes rectal laceration [6]. In our case we examined the relation that previous surgeries could have had with the rectal perforation, finding no apparent association since the mesh was found located proximally without direct contact with the tear, as the resected rectum from Altemeier's procedure wasn't close either. We speculate the previous surgeries did not avoid the sliding of the intestines into the Douglas pouch, maintaining the continuous friction, leading finally to a weakening of the rectal wall, allowing the small bowel to eviscerate through the anal canal [7,9,13,16-18].

Conclusion

Spontaneous transanal evisceration through rectal perforation is extremely rare and usually presents in elderly patients with chronic rectal prolapse and a sudden increase of abdominal pressure. Surgical management is mandatory to avoid

bowel necrosis. The specific procedure depends on patient clinical presentation, comorbidity, age, surgeon's experience, and adequate surgical equipment availability. Several procedures have been performed with different results, though Hartmann's procedure remains the one with the lowest mortality. We recommend laparotomy because it allows a safe bowel reduction and direct treatment on the perforation.

Acknowledgement

J.B. and C.M. wrote the original paper, reviewed, and edited the manuscript. J.B. reviewed and corrected the manuscript. M.E.E. and S.G.S. contributed to conceptualization and visualization of the manuscript. M.O.L. supervised and corrected the manuscript.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author, C.M., upon reasonable request.

References

1. Corduk N, Koltuksuz U, Karabul M, Savran B, Bagci S, et al (2011) A rare presentation of crush injury: transanal small bowel evisceration. Case report and review of the literature. *Pediatr Surg Int.* 27: 1021-1024.
2. Hultman CS, Morgan R (1994) Transanal intestinal evisceration following suction from an uncovered swimming pool drain: case report. *J Trauma.* 37: 843-847.
3. Gomez-Juarez M, Cascales P, Garcia-Olmo D, Gomez-Jurez F, Usero S, et al (2001) Complete Evisceration of the Small Intestine through a Perianal Wound as a Result of Suction at a Wading Pool: *J Trauma Inj Infect Crit Care.* 51: 398-399.
4. Bhosale M, Sangle A, Bhat G, Dambal P (2021) Transanal small bowel evisceration in a 3-year-old victim of motor vehicle accident. *J Indian Assoc Pediatr Surg.* 26: 253.
5. Sengar M, Neogi S, Mohta A (2008) Prolapse of the rectum associated with spontaneous rupture of the distal colon and evisceration of the small intestine through the anus in an infant. *J Pediatr Surg.* 43: 2291-2292.
6. Lasheen O (2021) Spontaneous trans-anal evisceration of small bowel: a case report. *J Surg Case Rep.* 2021: rjaa582.
7. M. S. Transanal Evisceration of Small Bowel-A Rare Surgical Emergency. *J Clin Diagn Res [Internet].*
8. Prassas D, Stunneck D, Rolfs T-M, et al (2017) Transanal evisceration of the small bowel – report of a case. *Z Für Gastroenterol.* 55: 274-276.
9. Kumar S, Mishra A, Gautam S, Tiwari S (2013) Small bowel evisceration through the anus in rectal prolapse in an Indian male patient. *Case Rep.* 2013: bcr2013010411-bcr2013010411.
10. Minkari T, Turan C (1961) Rectosigmoidal Rupture Caused by Effort During Defecation and Acute Evisceration of Several Loops of the Small Intestine Through the Antus '. 154:967-971.
11. Budipramana VS, Putra DA (2020) Rectal Prolapse Concomitant with Uterovaginal Prolapse Protects the Ileum from Necrosis in Transanal Ileum Evisceration through a Traumatic Tear on the Sigmoid Wall. *Case Rep Gastroenterol.* 14: 420-425.
12. Kornaropoulos M, Makris MC, Yettimis E, Zevlas A (2016) Transanal evisceration of the small bowel a rare complication of rectal prolapse. *Int J Surg Case Rep.* 19: 38-40.
13. Furuya Y, Yasuhara H, Naka S, Yamazaki K, Yanagie H, et al. Intestinal evisceration through the anus caused by fragile rectal wall. *Int J Colorectal Dis.* 23: 721-722.
14. Kunin N, Le Roy M-L, Ollivier F, Chouarbi VM, Verbrackel L (2005) Prolapsus rectal avec éviscération transanale aiguë du côlon sigmoïde. *Gastroentérologie Clin Biol.* 29:478-479.
15. Hennessy E (1966) Spontaneous rupture of the rectum with evisceration of small intestine through the anus.: report of a case. *ANZ J Surg.* 36: 161-162.
16. Wroblewski DE, Dailey TH (1979) Spontaneous rupture of the distal colon with evisceration of small intestine through the anus: Report of two cases and review of the literature. *Dis Colon Rectum.* 22: 569-572.
17. Brodén B, Snellman B (1968) Procidentia of the rectum studied with cineradiography: A contribution to the discussion of causative mechanism. *Dis Colon Rectum.* 11: 330-347.
18. Berwin JT, Ho TK, D'Souza R (2012) Small bowel evisceration through the anus - report of a case and review of literature. *Case Rep.* 2012: bcr1220115316-bcr1220115316.
19. Brodie BC (1827) A case of a singular variety of hernia treated at St. George's Hospital. *London Medical and Physical Journal.* 57: 529-530.