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Laparoscopic-Assisted Altemeier's Procedure for Recurrent Strangulated Rectal Prolapse: A Case Report

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Manuscript Preparation E
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Patient: Female, 39
Final Diagnosis: Recurrent strangulated rectal prolapse
Symptoms: Chronic constipation • painful rectal mass • irreducible rectal prolapse
Medication: —
Clinical Procedure: Operation
Specialty: Surgery

Objective: Management of emergency care

Background: Rectal prolapse is an uncommon disease that usually requires surgical intervention. Several techniques have been described with either an abdominal or perineal approach, the latter having a higher recurrence rate. In case of irreducible and strangulated full-thickness prolapse, a perineal approach is necessary, and efforts should be made to reduce recurrence rates.

Case Report: A 39-year-old mentally retarded woman presented with a painful, recurrent, strangulated sigmoid prolapse following a perineal recto-sigmoidectomy (Altemeier's procedure) for strangulated rectal prolapse 2 months previously. Examination revealed a 10-cm strangulated, prolapsed sigmoid. A laparoscopic-assisted perineal sigmoid resection with colo-anal anastomosis was carried out. The patient made an uneventful recovery and was discharged on the 6th postoperative day.

Conclusions: This is the second report in the literature highlighting the role of laparoscopy in Altemeier's procedure for strangulated prolapse. Laparoscopy aids assessment of sigmoid length, allows colonic mobilization, and assures that all redundant bowel is excised. This approach can reduce recurrence rate and need of further surgical interventions.

MeSH Keywords: Intellectual Disability • Laparoscopy • Postoperative Complications • Rectal Prolapse • Reoperation

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Background

Rectal prolapse is an uncommon disorder of unclear origin and tends to be more frequent in women and in those with chronic constipation, excessive straining, and psychiatric disorders. Over 100 procedures have been described for the treatment of rectal prolapse [1]. Surgery may be carried out through an abdominal or perineal approach and may involve excision, fixation, or plication of the prolapse. Recurrence rates are higher with a perineal approach, and abdominal procedures are more commonly performed in fit individuals [2].

Strangulated rectal prolapse is a rare emergency [3,4]. In this situation the irreducible ischemic bowel needs excision and this can only be achieved through a perineal approach. The aim would be to excise the affected bowel together with any bowel redundancy to prevent recurrence. However, this may be difficult to assess, particularly in the context of thick edematous tissues encountered in case of strangulation. We report the second case in the literature of the use of laparoscopy to assess bowel redundancy during surgery for strangulated prolapse and propose this approach to reduce the recurrence rate [5].

Case Report

A 39-year-old, mentally disabled, wheelchair-bound woman, living in a rehabilitation center, presented to the Emergency Room with a 6-hour history of acute onset of painful perineal mass. She had a history of chronic constipation, as well as bleeding per rectum associated with rectal prolapse for which she had undergone a recto-sigmoidectomy (Altemeier's procedure) 2 months previously.

Her vital signs were within normal limits and on examination there was minimal lower abdominal tenderness with no distension or peritoneal signs. Perineal examination showed a 10-cm irreducible strangulated sigmoid prolapse (Figure 1).

The admission laboratory tests included the following: white blood cell count, $10.4 \times 10^3/\mu\text{L}$; hemoglobin, 11.3 g/dL; hematocrit, 35.8%; platelets, $695 \times 10^4/\mu\text{L}$; sodium, 138 mmol/L; potassium, 4.4 mmol/L; blood urea, 2.8 mmol/L; and serum creatinine, 54 $\mu\text{mol/L}$.

We decided to perform a perineal resection of the strangulated bowel under laparoscopic guidance. A lone-star anal retractor was used and a full-thickness excision was carried out with the meso-sigmoid divided with a LigaSure device. A trans-umbilical incision was made and a 10-mm camera port was inserted. Laparoscopic exploration showed no bowel redundancy, and a straight colon going down to the anus (Figure 2). The specimen was removed and a tension-free handsewn colo-anal



Figure 1. Recurrent strangulated rectal prolapse.

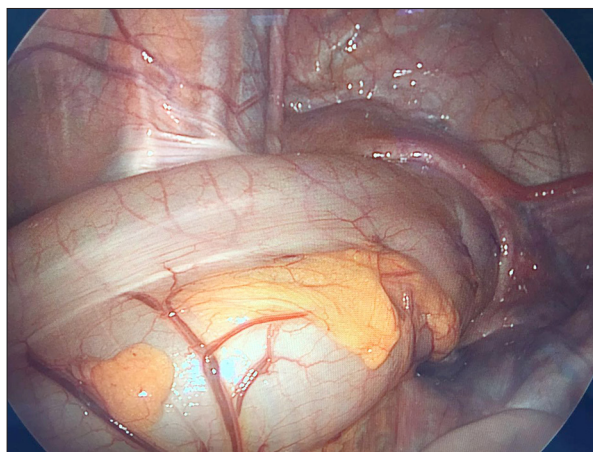


Figure 2. Laparoscopic view of non-redundant straight colon.

anastomosis was performed using interrupted 3/0 Vicryl sutures. There were no intra-operative complications.

The postoperative course was uneventful and the patient was discharged on the 6th postoperative day.

Discussion

Complete rectal prolapse or procidentia is a circumferential, full-thickness descent of the rectum out of the anus. The spectrum of associated disorders linked with the putative pathophysiology ranges from anatomical factors, including a defect in the pelvic fascia or intussusception of the rectum, to functional abnormalities such as impairment of resting and voluntary sphincter activity, decreased functional rectal capacity, impaired continence, and puborectalis dysfunction. A prolapse occurs when the connective tissue attachments of the rectum are loosened and stretched, thus allowing the tissue to protrude through the anus [6].

Patients with a history of incontinence associated with rectal prolapse should be evaluated preoperatively with anal manometry, ultrasonography, and pudendal nerve terminal motor latency to assess anorectal anatomy and function prior to repair [7].

True rectal prolapse should be distinguished from rectal mucosal prolapse and hemorrhoidal disease. Reports of rectal prolapse in the literature are usually small series with short follow-up, and describe a wide variety of surgical techniques [8]. The surgical treatment of rectal prolapse can be carried out either through an abdominal or perineal approach. These 2 approaches have been shown to be similar in postoperative morbidity, but the perineal approach has a higher recurrence rate. Functional results depend on the type of technique used [2].

As regards recurrent rectal prolapse, surgical outcomes are less favorable, even at relatively short follow-up intervals. In fact, recurrence rates up to 50% have been reported [9]. A recent systematic review was unable to propose a treatment algorithm due to the lack of randomized trials, variety of surgical techniques, and heterogeneity within the studies [10].

In case of emergency with strangulated irreducible prolapse, the only available option is a perineal excision of the prolapse, performing a recto-sigmoidectomy (Altemeier's procedure). This procedure in the elective setting is associated with a recurrence rate up to 60%, and this seems to be higher in stapled anastomosis and shorter excised bowel length [11]. The length of the specimen seems to be a pivotal element in reducing recurrence rate. However, bowel redundancy cannot be easily assessed, especially in case of strangulation where the

thickness and edema of tissues may cause underestimation of the length of sigmoid to be excised. The addition of laparoscopy allows direct visualization of the length of the colon, carrying out bowel mobilization if needed to assist perineal excision. In elective operations, laparoscopic assistance may allow conversion to an abdominal approach with rectopexy, with or without resection.

Only 1 previous case of laparoscopic-assisted perineal rectal prolapse surgery has been reported in the literature. In this case, the patient had undergone 2 previous Altemeier's procedures. As in our case, laparoscopy showed no sigmoid colon redundancy, and the bowel pulled straight towards the pelvic floor without tension [5].

Conclusions

The use of laparoscopy during perineal approach for rectal prolapse is a novel technique. Laparoscopy provides direct assessment of bowel length and redundancy, and allows mobilization when needed, helping the surgeon determine the extent of bowel resection needed. This approach could potentially reduce recurrence rate in both elective and emergency conditions. However, more studies on a larger number of patients are needed to clearly establish its role.

References:

1. O'Brien DP: Rectal prolapse. *Clin Colon Rectal Surg*, 2007; 20(2): 125–32
2. Lee JL, Yang SS, Park IJ et al: Comparison of abdominal and perineal procedures for complete rectal prolapse: An analysis of 104 patients. *Ann Surg Treat Res*, 2014; 86(5): 249–55
3. Berney CR: Complicated incarcerated rectal prolapse: A surgical challenge in an elderly patient on antiplatelet agents. *Australasian Medical Journal*, 2010; 10(3): 691–93
4. Voulimeneas I, Antonopoulos C, Alifierakis E, Ioannides P: Perineal rectosigmoidectomy for gangrenous rectal prolapse. *World J Gastroenterol*, 2010; 16(21): 2689–91
5. La Greca G, Sofia M, Primo S et al: Laparoscopic implementation of the Altemeier procedure for recurrent rectal prolapse. Technical note. *Int J Surg Case Rep*, 2014; 5(7): 347–49
6. Wijffels NA, Collinson R, Cunningham C, Lindsey I: What is the natural history of internal rectal prolapse?. *Colorectal Dis*, 2010; 12(8): 822–30
7. Dvorkin LS, Chan CL, Knowles CH et al: Anal sphincter morphology in patients with full-thickness rectal prolapse. *Dis Colon Rectum*, 2004; 47: 198–203
8. Madiba TE, Baig MK, Wexner SD: Surgical management of rectal prolapse. *Arch Surg*, 2005; 140: 63–73
9. Steele SR, Goetz LH, Minami S et al: Management of recurrent rectal prolapse: surgical approach influences outcome. *Dis Colon Rectum*, 2006; 49(4): 440–45
10. Hotouras A, Ribas Y, Zakeri S et al: A systematic review of the literature on the surgical management of recurrent rectal prolapse. *Colorectal Dis*, 2015; 17(8): 657–64
11. Kim M, Reibetanz J, Schlegel N et al: Recurrence after perineal rectosigmoidectomy: when and why?. *Colorectal Dis*, 2014; 16(11): 920–24