

Delorme's Procedure for Complete Rectal Prolapse Associated with a Giant Rectal Polyp

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Keywords: Rectal prolapse; Giant polyp; Delorme

INTRODUCTION

Rectal prolapse is the “slipping” or “descent” of the rectum from its anatomical site through the anus.¹ Its first description dates back to the Ebers Papyrus of ancient Egypt (estimated 1500 BC).² In 1912, Moschowitz described rectal prolapse as a hernia in which the anterior wall of the rectum herniates through a defect in the pelvic fascia. From 1968 onwards, rectal intussusception was proposed as a cause of rectal prolapse. The rectal mucosa 6-8 cm from the anal verge becomes the “starting point” of intussusception.³ Malignant colon tumors can be the lead point of invagination and occur in up to 60% of cases. Among benign tumors, adenomas are the most common.^{4,5}

We present the case of a patient with rectal prolapse associated with a giant polyp treated with Delorme's procedure.

CASE

A 75-year-old female patient came to the emergency room with hydroelectrolytic imbalance, dehydration, metrorrhagia, sensory impairment, and acute renal failure. She had a 10-year history of breast cancer, senile dementia (Alzheimer's disease), metrorrhagia of 2 months' duration, weight loss of 15 kg, and recent hospitalization for community-acquired pneumonia with completed treatment.

The patient was in poor general condition, with marked malnutrition. During her hospitalization her clinical condition improved, but before discharge she presented rectal bleeding and complete rectal prolapse associated with a polypoid lesion. On physical examination she was cachectic, with an excavated abdomen and complete rectal prolapse associated with a lobulated polypoid tumor, friable on palpation and with abundant mucus. Due to this lesion only partial reduction was achieved (Fig. 1). There were no inguinal adenopathies. Defecation was normal.

Transvaginal ultrasound showed a 9 mm heterogeneous endometrium (no need for gynecological intervention) and CT scan reported an 81x58 mm protruding lesion on the posterior wall of the middle rectum. MRI was not performed because the appearance of the lesion raised suspicion of a benign polyp, in addition to the patient's poor general condition and the lack of availability at our institution.

The decision was made to proceed with surgery and a Delorme's procedure was performed with resection of the giant polyp. In



Figure 1. Complete rectal prolapse associated with a sessile, shaggy lesion with a cauliflower-like surface that acts as the lead point for invagination.

lithotomy position, the submucosa was infiltrated radially with 1/20000 adrenaline solution. The submucosal dissection exposed the muscularis distally up to where the polypoid lesion described was located. The lesion was resected with adequate margins using ultrasonic vascular sealant, followed by plication of the muscularis propria (Fig. 2 A) and reanastomosis of the mucosa (Fig. 2 B). After obtaining satisfactory hemostasis, the anorectum was reintroduced. Feeding was resumed after 24 hours and catharsis after 48 hours. She was discharged 5 days later. After being assessed in the outpatient clinic, no prolapse or bleeding was observed. The patient decided to continue follow-up at another hospital near her home. Histopathology revealed a tubulovillous adenoma with low-grade dysplasia and some foci of high-grade dysplasia, with free margins.

The authors declare no conflict of interest or funding. Brian U. Santos. dr.briansantos@gmail.com
Received: 5/5/2024. Accepted: 24/1/2025

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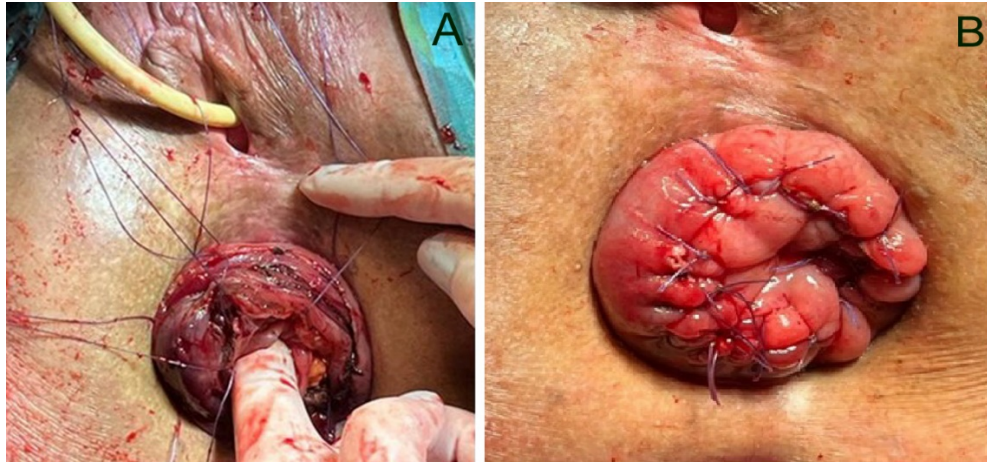


Figure 2. Delorme's procedure. **A.** After mucosal resection, plication of the muscular layer is performed with interrupted sutures. **B.** Complete mucosal anastomosis.

DISCUSSION

Rectal prolapse is defined as a protrusion of the of the rectum through the anal canal. It may involve the mucosa (partial prolapse) or all layers of the rectum (complete prolapse). Its definitive etiology is unclear; an intussusception of the rectum 6-8 cm from the anal verge has been hypothesized to be the starting point of prolapse. Coexisting anatomic abnormalities include a redundant sigmoid colon, levator ani diastasis, deep pouch of Douglas, distensible anal sphincter (patulous anus), and lack of rectosacral attachments. It most commonly affects women, with a female-to-male ratio of approximately 10:1. Peak incidence in the female population occurs in the seventh decade of life.⁶

Coexistence of rectal prolapse with giant villous adenomas is an atypical presentation. Colorectal polyps are mostly adenomas, occurring in 25 to 30% of cases in patients older than 50 years. Villous adenomas, which comprise approximately 10% of colorectal adenomas, are rare premalignant lesions that are usually larger than 5 cm and have a risk of malignancy of up to 40%. Giant rectal adenomas can reach considerable sizes without becoming malignant. They are usually asymptomatic. The most common clinical manifestations include excessive mucorrhea, diarrhea, obstructed defecation, or iron deficiency anemia.⁷

In cases of circumferential giant rectal lesions, conservative resection may not guarantee oncological safety or physiological functionality, and considering the risk-benefit, radical surgery remains the safest alternative, however, it may potentially result in a permanent colostomy and alter the patient's quality of life. In this particular case, the decision was made to remove the polyp because of its benign appearance, and due to the severe hydroelectrolytic and acid-base imbalance, rectal bleeding, and diarrhea that compromised the patient's quality of life.

Patients with rectal prolapse may experience a variety of symptoms, including anal incontinence (50–75% of patients), constipation (25–50% of patients), mucous discharge, and bleeding. The latter often occurs when rectal reduction is not achieved. In addition, rectal prolapse may occur in combination with prolapse of pelvic organs, such as the bladder and uterus, or may be associated with a rectocele.⁶

The goal of treatment is to eliminate prolapse, correct functional issues related to incontinence or constipation, and prevent new bowel dysfunction. This can be accomplished by either 1) fixing the rectum to the sacrum or 2) resecting or plicating the redundant rectum. The procedure may be performed through a transanal/perineal approach or a transabdominal approach.

Perineal approaches are considered more suitable for patients who are frail, elderly, and/or have significant comorbidities. The advantages of perineal surgery include a generally uncomplicated postoperative recovery, minimal pain, early ambulation, and the resumption of oral feeding within the first 24 hours. Full bowel function typically returns a few days after the procedure.⁸ In this case, considering the patient's comorbidities, we opted for the perineal approach due to its low morbidity and mortality, as well as minimal postoperative complications.

Edmond Delorme, a French military surgeon, was the first to describe this procedure in 1900. The basic principles of the operation include a transanal approach for dissection of the mucosa from the muscularis propria, followed by plication of the muscularis propria and mucosal anastomosis.⁸ The procedure involves removal of the mucosa rather than a total excision of the rectal wall. A circumferential incision is made one centimeter proximal to the dentate line down to the submucosal plane, the mucosa is dissected down to the most proximal portion of the prolapsed bowel and then resected. The muscularis propria is plicated with longitudinal interrupted sutures. Finally, the mucosal edges are anastomosed.

This technique is suitable for treating mucosal prolapse or short-segment full-thickness rectal prolapse. It may be considered for older patients, those with multiple comorbidities, individuals with a history of prolapse repair, anterior resection, pelvic surgery, or pelvic radiation, as well as young men who may have concerns about sexual dysfunction.⁸

Complications are relatively rare and may include hemorrhage, hematoma, suture line dehiscence, stricture, and recurrence. The mortality rate ranges from 0 to 5%, while the recurrence rate varies between 8 and 34%.^{6,9}

Most patients generally experience an improvement in continence and constipation. Failures are most often associated to severe sphincter dysfunction, chronic diarrhea, significant perineal descent, or colonic conditions that prevent a complete mucosectomy. Incomplete mucosectomy and pelvic floor defects have generally been associated with a higher recurrence rate.¹⁰

CONCLUSION

Rectal adenomas can reach a considerable size without becoming malignant. When feasible, oncologic resection should be performed, although this often needs to be tailored to each patient.

Delorme's procedure is particularly suitable for older patients or those with significant comorbidities, as it can achieve favorable outcomes with low risk of morbidity and mortality. This procedure

is associated with improved anal continence, a low incidence of postoperative constipation, and relatively low recurrence rates.

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