

## Case Report: Delorme Technique for the Treatment of Giant Non-Reducible Rectal Prolapse at the Second Level of Care

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### ABSTRACT

Rectal prolapse is an invagination of the rectum that causes it to protrude through the anus. Irreducible rectal prolapse is an unusual condition; in most cases, the prolapse reduces spontaneously.

Non-surgical treatment alternatives have been noted, such as the use of sugar, which reduces rectal prolapse. The results have not yet been compared against surgical treatment, so they cannot yet be considered the preferred option. Given the many techniques and procedures, it should be considered that the best procedure must be chosen not only to correct the prolapse but also to restore defecatory function and to improve fecal incontinence throughout the patient's lifetime. The Delorme procedure is a transanal technique that addresses complete rectal prolapse with a low surgical risk and minimal morbidity (less damage to pelvic and hypogastric nerves compared to abdominal procedures). It is associated with a significant improvement in anal continence, low recurrence rates, short hospital stays, and patient comfort.

**Conclusion:** The strongest influence on the occurrence of stunting is the birth weight of the child.

**KEYWORDS:** rectal prolapse, Delorme procedure, surgical procedure.

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### INTRODUCTION

Rectal prolapse is a rare pathology, which has been known to exist for more than 3,500 years, as it is referred to in the Ebers papyrus (1). Rectal prolapse is an invagination of the rectum that causes its externalization through the anus, and can be of three types:

- Complete prolapse (full thickness) when it is constituted by the entire thickness of the rectal wall involving all the layers of the rectum. It is characterized by the appearance of circular folds of approximately 5cm (2)
- Incomplete (partial) prolapse when only the mucous layer is involved and a relatively short distance of 2-3cm protrudes. It is characterized by the appearance of radial folds that join the anal margin. (3)
- Occult prolapse or rectal intussusception, which is less common, where the prolapse of the rectal wall does not protrude through the anus. (4)

The exact pathophysiology is unknown, usually it is associated with sphincter and pelvic floor muscle weakness (5) In order for prolapse to occur, the rectum must lose its stability. This depends on the combination of several factors: the puborectalis muscle, the connective tissue that anchors it to the sacrum, and the curves of the spine that distribute pressures evenly. Among them, the puborectalis muscle is considered the most important. It is reasonable to assume that some pressure stresses can be tolerated in the presence of some deficiency in the support structures; however, if the efforts are excessive and continuous or if the stability system fails markedly, favorable circumstances may arise for the appearance of prolapse (6) In addition to this, there are numerous risk factors involved in the appearance of rectal prolapse such as cystic fibrosis, a history of hemorrhoids, pelvic surgeries or obstetric trauma as they cause laxity of the fascia/pelvic muscles, dysfunction of the anal sphincter, chronic constipation and increased age. (7). However, despite

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several years of study and research, there are still multiple theories regarding his theology: (1) a redundant sigmoid colon lying deep within the pelvis, (3) an intussusception due to poor anorectal tone, injury to the pudendal nerves from repeated stretching of the pelvic floor, and (4) abnormal fixation of the rectum (3).

There are a number of anatomical abnormalities that accompany prolapse:

- a) diastasis with weakness of the pelvic floor and anal canal muscles;
- b) failure of rectal fixation, with mesorectum and lax lateral ligaments, with loss of horizontality;
- c) Deep Douglas Sack Bottom
- (d) redundant sigma
- e) failure of both the external and internal sphincters, with frequent pudendal neuropathy. (8)

Rectal prolapse is uncommon in adults, with an incidence of about 0.5% in the general population. Traditionally, it is recognized that it is a pathology that affects the extremes of life, with a peak incidence of between 80-90% in patients after the fifth decade. The incidence increases with each decade until the seventh decade (9), however, a high incidence has also been seen in the pediatric population, especially in the first two years of life, decreasing progressively until 5 years, where it is rarer to observe. In adults, it is more common in those over 60 years of age and affects almost exclusively women (90%). In adults, females predominate by a ratio of 9:1 (5) It usually occurs progressively; initially reducible spontaneously, then manually and finally becomes irreducible. At any stage, it can be complicated by incarceration or strangulation, which is very rare (4).

The symptoms are dominated by a "ball" sensation that is externalized through the anus at the time of pushing efforts or permanently in a standing position at a more advanced stage. The protrusion generally occurs with bowel movements, however, it can also appear with minimal effort with coughing or sneezing and, in the end, spontaneously. There may be other associated symptoms: dyschezia, constipation (reported in 15-65%), fecal incontinence (about 75% of patients have reported it), a feeling of incomplete evacuation, rectal syndrome characterized by passive emission of mucus and blood, or perineal and hypogastric pain. (10)

The diagnosis of rectal prolapse is confirmed by physical examination, sometimes the patient is asked to make a defecation effort as Valsalva's maneuvers allow it to be externalized if it is not visible. (11)

Irreducible rectal prolapse is an unusual entity, in most cases of treatment the prolapse reduces spontaneously. In cases where it is not possible to reduce it, the patient has to go to the emergency department, in some cases it is performed in the operating room and after the reduction, the patient is

referred to the outpatient clinic to initiate a study protocol to decide the type of surgical approach and the technique that best suits each patient in particular. In patients with rectal prolapse, in whom it is not possible to achieve reduction, factors such as edema, ulceration and vascular compromise of the prolapsed colonic wall, pose an emergency situation, where it is necessary to perform a surgical alternative to solve the problem (5).

### CLINICAL CASE

It is a 51-year-old male patient, blacksmith occupation, without chronic-degenerative diseases, denies surgical diseases, denies traumas and fractures. He began approximately 5 months ago presenting rectal prolapse spontaneously, occasionally accompanied by transrectal bleeding and pain, patient reported being able to manually reduce the rectal prolapse by himself. On November 15, 2024 he went to the emergency department for presenting a new rectal prolapse which made it impossible to reduce it by the same for 24 hours so he went to the emergency department, On arrival, evaluation by general surgery is requested. It is valued for our service. On physical examination, the patient is found in the following condition:

Vital signs: Heart rate 90 beats per minute, respiratory rate 18 breaths per minute, temperature 36.5, blood pressure 113/73 MMHG, abdomen with peristalsis present, soft depressible, no evidence of peritoneal irritation. On examination directed at the rectal region, protrusion of rectal mucosa of approximately 20 cm from the anal margin was observed, edematous, purplish in color, congestive, with no evidence of active bleeding, not painful on palpation (Image 1).



**IMAGE 1: RECTAL PROLAPSE**

He was admitted to the hospital by the surgery service, who decided to initially manage the emergency department with analgesics, administration of solutions,

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application of 50% glucose and sugar to the prolapsed rectal mucosa. Manual reduction of rectal mucosa was attempted on three occasions, without achieving favorable results, it was decided to initiate a surgical protocol to perform anal exploration and manual reduction under anesthesia in the operating room area.

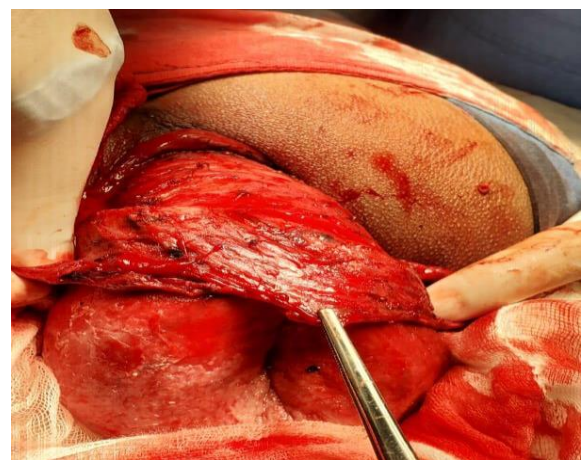
Laboratory (15.11.23): Glucose 107 mg, Urea 21.5 mg, Creatinine 0.8 mg, Hemoglobin 14.6 g, Hematocrit 43.8%, Leukocytes 16.9, Neutrophils: 90.1%, Platelets: 306; Group Y Rh: O(+), TP 10.7, TTP 26, INR 0.93

He was transferred to the emergency operating room on 16.11.23, finding edematous, congestive rectal mucosa, with slight changes in color, with mucosal ulceration, and no

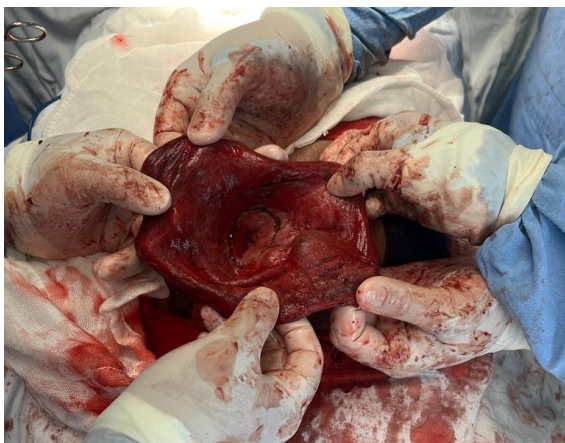
evidence of active bleeding. The procedure was initiated by manual reduction of the prolapse, but it was decided to reposition the patient in the position of a Sevillian razor (Fig 1). Procedure was initiated with an incision on the mucosa 1 cm from the dentate line (Fig 2), the submucosal plane was identified, rectal mucosectomy was performed (Fig 3), up to 2 cm of the anal mucosa (Fig 4), reintegration of the rectal muscle and its containment above the anal canal and the dentate line was performed. by longitudinal plication, with 11 points separated using 2-0 monocryl (Fig 5). These stitches are knotted by symmetrically pleasing the muscle layer. Separate points of the anal mucosa occur above the pectineal line.



**Fig. 1: The patient is placed in the position of a Sevillian knife.**



**Fig. 2: incision on the mucosa 1 cm from the dentate line**



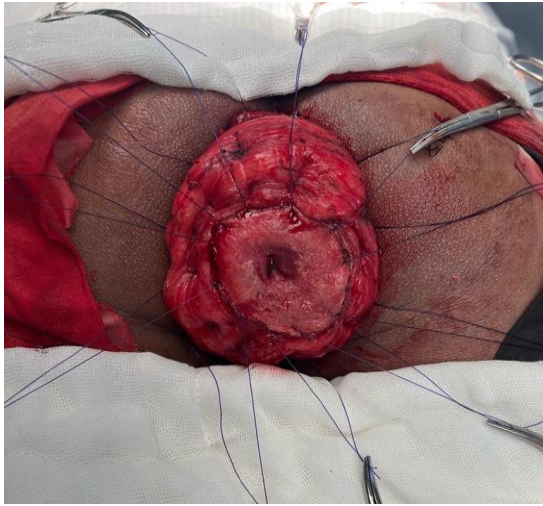
**Fig. 3: Rectal prolapse mucosectomy**



**Fig. 4: Mucosectomy up to 2 cm from the anal margin**



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**Fig. 5: Longitudinal plication**



**Rectal prolapse reduction**

Patient enters the general surgery floor to continue his post-surgical care, managed with a diet rich in fiber, sines and ambulation. Course with adequate postoperative evolution. He was discharged 5 days later and sent to the surgery outpatient clinic for follow-up. There was no evidence of complications such as bleeding or infection, no lesions of the anal sphincter, nor stenosis or recurrences.

### DISCUSSION

Rectal prolapse is a rare entity. Non-surgical treatment alternatives have been pointed out, such as the use of aluminum potassium, diathermy or sugar, which, when applied directly to the prolapse, have the purpose of causing fibrosis that secondarily supports the redundant tissues, reducing rectal prolapse. (12) These techniques merit multiple applications and the results have not been compared against surgical treatment, so they cannot yet be considered of choice. To date, more than 120 surgical techniques have been described for the treatment of rectal prolapse and none of them is widely accepted by all colon and rectal surgeons, which tells us about the complexity in the surgical management of this disease. (13)

In general, the procedures that we can use for the management of rectal prolapse are divided into:

- Procedures by the abdominal route in a conventional, open or laparoscopic way, such as rectopexy with or without the use of prosthetic material, rectopexy plus resection such as Frykman-Goldberg. (14).
- Perineal procedures such as anal cerclage (Tierch), perineal recto-sigmoidectomy such as the Altemeier procedure, resection of the rectal mucosa (Delorme), perineal suspension and fixation (Wyatt). (14)

Given so many techniques and procedures, it should be considered that the best procedure should be chosen not only to correct prolapse but also to restore defecatory function

and to improve fecal incontinence throughout the patient's life. Although there are more than a hundred techniques, including transabdominal and perineal approaches, for rectal prolapse repair, none of them are perfect. (15)

Among the currently available optional procedures it is the Delorme procedure, also known as mucous cuff resection, described since 1900 and consisting of a circular mucosectomy starting at the dentate line, with imbrication of the muscularis and a colon-anal mucosal anastomosis. This procedure resolves complete rectal prolapse with low surgical risk, low recurrence and low morbidity. (16)

This technique consists of performing a circumferential resection of the prolapsed mucosal cuff, thus exposing the distal muscularis propria. Plication stitches are then applied in at least three of the four quadrants to form an "accordion" and thus be able to reduce the prolapsed muscularis propria to a thick muscular ring at the anal exit orifice. (17)

The Delorme procedure has been shown to be very safe, with a postoperative mortality rate of approximately 0%. (18) It has a complication rate of 4-12% of patients. The most frequent short-term complications are: urinary retention, bleeding, infection, fecal impaction, fecal urgency and tenesmus. In addition, it offers an improvement in 63% of cases of incontinence and constipation in 38% (20)

### CONCLUSION

It is know that rectal prolapse poses a real challenge for both the patient and the surgeon and that the latter must have extensive knowledge regarding various treatment options and according to the age, clinical condition of the patient, the degree of prolapse and the experience he has with respect to the various corrective procedures, so the alternative that best suits each patient must be decided judiciously and reasonably.

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The only effective treatment for complete rectal prolapse is surgical. Several interventions have been described, distributed into two groups according to the access routes used: abdominal access and perineal access. The choice of access route and intervention depends on several parameters, such as the age and general condition of the patient. The perineal route is preferentially proposed in elderly patients with several concurrent diseases, in a situation of recurrence, or when abdominal access is considered difficult. The latter also offers the advantage of being able to be performed with locoregional anesthesia when general anesthesia is contraindicated. In light of recent advances and cohort studies, an equivalent recurrence rate between the two accesses when performed by experienced surgeons has been described in some publications

The Delorme procedure is a transanal technique that resolves complete rectal prolapse with a low surgical risk and low morbidity (less damage to pelvic and hypogastric nerves in contrast to abdominal procedures), is associated with a marked improvement in anal continence, low relapse rates, short hospital stay and patient comfort, with little or no postoperative pain. We consider that it should be taken into account as the initial procedure of any patient with rectal prolapse who does not respond to medical treatment, leaving the abdominal approaches for patients with recurrence of the prolapse.

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