FACTA UNIVERSITATIS
Series **Medicine and Biology** Vol. 26, No 1, 2024, pp. 29–31

UDC 616.35-007.43-089
https://doi.org/10.22190/FUMB240510005D

Case Report

DELORME PROCEDURE IN THE TREATMENT OF RECTAL PROLAPSE – CASE REPORT

Ivona Đorđević[1,2], Ana Kostić[1], Nikola Vacić[1], Dragoljub Živanović[1,2], Maša Milčić[3], Strahinja Konstantinović[1]

[1]Clinic for Pediatric Surgery, Pediatric Orthopedics, and Traumatology, University Clinical Center Niš, Niš, Serbia
[2]Faculty of Medicine, University of Niš, Serbia
[3]Emergency Medical Service, Health Center Aleksinac, Aleksinac, Serbia

ORCID iDs	Ivona Đorđević	https://orcid.org/0000-0001-5879-9626
	Ana Kostić	N/A
	Nikola Vacić	https://orcid.org/0000-0002-6826-1747
	Dragoljub Živanović	https://orcid.org/0000-0002-9076-9651
	Maša Milčić	N/A
	Strahinja Konstantinović	https://orcid.org/0009-0009-0950-8795

Abstract. Prolapse of the rectum is not so rare, especially in children under 3 years of age. It is most commonly associated with persistent constipation, enterocolitis, cystic fibrosis, and neuromuscular diseases. In most cases, treatment is conservative and symptomatic. Surgical treatment is rarely required. The paper presents a patient aged 27 months treated at the Clinic for persistent rectal prolapse. The attempt at conservative treatment did not give results, although the problem of constipation in the boy was solved. Due to persistent episodes of rectal prolapse, sclerosation of the anorectal region was performed. However, this method did not lead to a cure. Therefore, surgical treatment followed, and surgery was performed according to Delorme, a perineal approach. There were no complications in the postoperative course, as well as relapses of the disease. Rectal prolapse is most commonly encountered at the age of 3 years. Treatment should be directed to treating the underlying disease that leads to rectal prolapse. In refractory cases, surgical treatment is suggested, which is extremely rare in children.

Key words: rectal prolapse, surgery, Delorme procedure.

Introduction

Rectal prolapse (RP), is not a rare condition in children, estimated to occur in approximately 0.5% of the population younger than 3 years [1]. RP can be caused by various conditions, including constipation, cystic fibrosis, acute enteritis, neurological illnesses, weak anal sphincter, and anorectal procedures. There are two types of prolapse: complete prolapse (when the full thickness of the intestinal wall falls out) and incomplete (the rectum's mucous membrane prolapsed). Incomplete RP can be circumferential, or only a section of the rectal mucosa may be affected [2].

RP is often accompanied by constipation and incontinence. Symptoms and signs of RP include pain in the anal region, swelling, blood and mucus from masses protruding from the anus, and a feeling of a foreign body in the anal canal. The diagnosis can be established through detailed anamnesis, anorectal examination in the acute phase of the disease, and anorectal manometry.

Prolapse occurs during defecation in the early stages of the disease, and thereafter the rectum returns to its original position. Later, prolapse might occur under small stressors, such as sneezing and coughing. In the final stages of the disease, the rectum does not return to the abdomen, necessitating manual repositioning or surgical treatment.

The treatment of RP in children is almost always conservative by treating the underlying medical problem, which may include managing constipation or improving nutrition. Surgery may be required to repair the prolapse in rare circumstances, especially if conservative methods are inadequate. Treatment approaches differ based on the severity of the prolapse and its underlying cause.

Case Report

The boy, 27 months old, was brought to the pediatric surgery clinic by his parents due to a change in the anus area (Fig. 1).

For more than 4 months, the patient has experienced persistent constipation, which has been treated with laxatives used orally on occasion. After a period of short improvement, the problems largely resurfaced. The current change in the anus area was initially seen on the day of admission, following the art of defecation. The inspection revealed rectal prolapse and manual reduction was done, with recommended correction of the diet (increased fiber intake), regulation of the regime of defecation and regular use of fecal softeners and emulsions (Olei Parafini).

Received May 10th, 2024 / Accepted June 29th, 2024
Correspondence to: Ivona Đorđević
University of Niš, Faculty of Medicine, Bul. Dr. Zorana Đinđića 81, 81, 18108 Niš, Serbia | ivonadj74@gmail.com

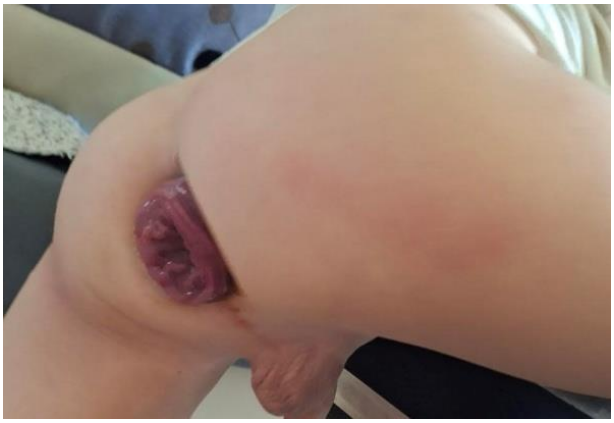

Fig. 1 Patient in acute phase with manifested rectal prolapse

After 3 days, the patient was admitted to the pediatric surgical clinic with the same symptoms and manual reduction was repeated, with the recommendation to continue prescribed therapy. The mother received training in manual prolapse reduction. Rectal prolapse occurred four times during the next ten days, resulting in the patient's hospitalization, and surgical sclerotization was suggested. After the preparation of the patient under general anesthesia, sclerotization was performed in 3 points with 1 ml of a sclerosing agent (hypertonic saline). The postoperative course of the patient was without incident and was discharged home after 2 days. However, on the 7th day after sclerotization, rectal prolapse occurred again and became frequent and daily in the next 20 days. The stools were completely softened and the patient had no constipation disturbances, but the prolapse was more pronounced almost after each defecation. The boy was hospitalized again. Biochemical and blood tests and cystic fibrosis tests were normal. A rectal examination identified a weak anal sphincter. It was decided to do a surgical intervention with a perineal approach (Delorme's surgery) under general anesthesia.

First, the part of the rectum that prolapses was extracted through the anus (Fig. 2A) At about 1.5 cm from the pectinate line, the incision of the mucosa started circumferentially (Fig. 2B). This was followed by rectal mucosectomy in the length of 4-5 cm (Fig. 2C, D), separating the mucosa from the underlying muscular layer. The mucosa was excised after the mucosectomy and the intestinal wall was reconstructed by plication of the rectal wall in length of 5 cm up to 1.5 cm above the pectinate line. Reconstruction of the rectal wall and anus was carried out circumferentially at 16 points (Fig. 2E). The aesthetic result was excellent and there were no incisions on the abdomen (Fig 2F). The patient was discharged from hospital after 5 days. To date, there has been no relapse of prolapse.

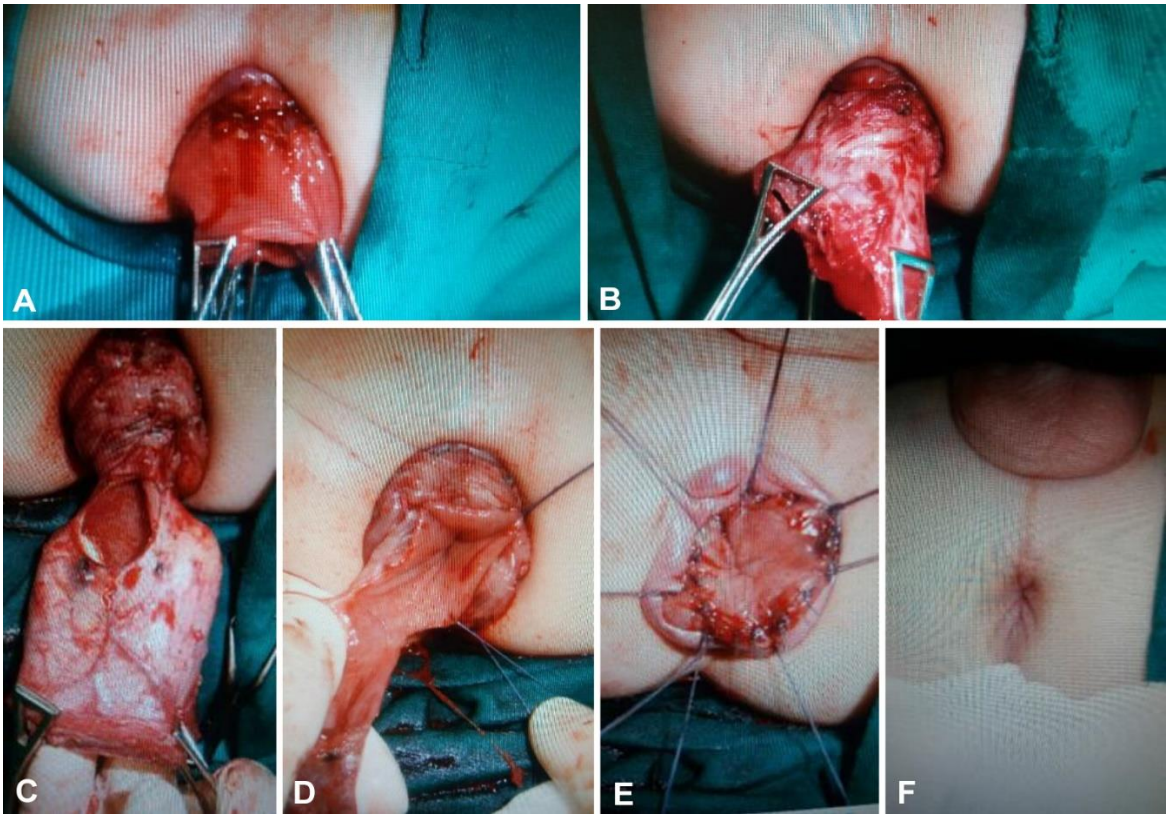

Fig. 2 A – Rectum extracted through the anal canal; B – mucosectomy started 1,5 cm from the pectinate line; C – completed mucosectomy, separated from the muscular layer in the length of 5 cm; D – Excision of mucosal layer after completed mucosectomy; E – plication of the rectal wall and its' fixation 1,5 cm above pectinate line in 16 points circumferentially; F – anal presentation after surgery.

Discussion

RP is a condition in which the mucous membrane protrudes into the anal canal or through it into the external environment [3]. The incidence of the disease in children is highest at the age of 3 years and is about 0.5%. The etiopathogenesis is unknown but is most often associated with prolonged and persistent constipation, enterocolitis, cystic fibrosis, and neuromuscular diseases of the anorectal region [1].

The diagnosis of rectal prolapse is based purely on history and clinical examination. RP frequently manifests as a dark red mass, with or without mucous and blood, which protrudes from the rectum when straining [4].

The principal management goal for RP is to diagnose and treat the predisposing disease. Manual reduction should be started as soon as possible if spontaneous reduction does not occur, as RP will become more difficult to reduce over time. Further conservative therapy in the treatment of constipation includes dietary changes, such as increasing fiber intake, encouraging regular toilet habits, and using stool softeners to ease bowel movements. Behavioral and biofeedback therapy can only be effective in older children. The decision about when to operate remains a difficult one. RP in children younger than 4 years is usually a self-limiting disorder [5]. Indications for operative intervention are not definite and include longstanding symptoms, rectal pain, bleeding, ulceration, and prolapse that require frequent manual reductions or are difficult to reduce [6].

When patients fail conservative therapy, several surgical choices are available, and the challenge becomes which of the 130 surgical procedures to pick from (sclerotherapy, Thiersch's anal cerclage [7], transabdominal sacral rectopexy, laparoscopic rectopexy, Delorme procedure) [8]. Delorme is an elegant but very demanding operation that involves transanal surgery in a very small space. The proximity of the sphincter, neuromuscular elements, urethra, and pectinate line requires a good knowledge of surgical anatomy. According to the available literature data so far, this is the first Delorme procedure performed on children in Serbia.

Importantly, operative and procedural therapies that are often successful in children younger than 4 years do not have the same success rate in older children, likely due to a difference in the comorbidities and etiology [9].

Conclusion

Constipation is the most common cause of RP in children under the age of four. Attempts to identify and treat the underlying problem should be undertaken. Older children are less likely to respond to conservative therapy and frequently require surgical intervention.

References

1. Chan WK, Kay SM, Laberge JM, Gallucci JG, Bensoussan AL, Yazbeck S. Injection sclerotherapy in the treatment of rectal prolapse in infants and children. J Pediatr Surg 1998; 33(02):255–258.
2. Cannon JA. Evaluation, Diagnosis, and Medical Management of Rectal Prolapse. Clin Colon Rectal Surg 2017; 30(1):16-21.
3. Ramakrishnan K. Diseases of the Rectum and Anus. In: Paulman PM, Taylor RB, Paulman AA, Nasir LS, editors. Family Medicine. 8th edition. [e-book] Cham: Springer; 2022: [cited 2024 May 1]: 1281-1298. Available from: https://doi.org/10.1007/978-3-030-54441-6_98
4. Antao B, Bradley V, Roberts JP, Shawis R. Management of rectal prolapse in children. Dis Colon Rectum 2005; 48(08):1620–1625.
5. Qvist N, Rasmussen L, Klaaborg KE, Hansen LP, Pedersen SA. Rectal prolapse in infancy: conservative versus operative treatment. J Pediatr Surg 1986; 21(10):887–888.
6. Koivusalo AI, Pakarinen MP, Rintala RJ. Rectopexy for paediatric rectal prolapse: good outcomes but not without postoperative problems. Pediatr Surg Int 2014; 30(08):839–845.
7. Flum AS, Golladay ES, Teitelbaum DH. Recurrent rectal prolapse following primary surgical treatment. Pediatr Surg Int 2010; 26(04):427–431.
8. Johansen OB, Wexner SD, Daniel N, Nogueras JJ, Jagelman DG. Perineal rectosigmoidectomy in the elderly. Dis Colon Rectum 1993; 36(08):767–772.
9. Lee JI, Vogel AM, Suchar AM, Glynn L, Statter MB, Liu DC. Sequential linear stapling technique for perineal resection of intractable pediatric rectal prolapse. Am Surg 2006; 72(12):1212–1215.