

The combination of sclerotherapy and anal cerclage: treatment of choice for rectal prolapse in children?

Abstract

Background: Mucosal prolapse of the rectum is a common condition in children, easily diagnosed. Its management is varied, with varying results. The authors propose to evaluate the management of this pathology in their department and the results obtained.

Method: cross-sectional study from January 2018 to December 2021 in the pediatric surgery department of CNHU-HKM. This was an exhaustive recruitment of children with prolapse during the study period.

Results: 29 patients were enrolled. Mean age was 25.4 months. The predominance was female 18/11. Prolapse was total in 100% of cases, with circumferential externalization averaging 4cm in length. Average admission time was 64.8 days. Nineteen children recurred under medical treatment, representing a 65.5% failure rate. Among the children, 19 had chronic constipation and 6 had diarrhea. The 19 children who failed medical treatment underwent sclerotherapy. Two recurred. Anal cerclage was performed in 12 children, with no recurrence observed. Hospital stay was 24h.

Conclusion: Despite the existence of standardized protocols, the management of rectal prolapse must be adapted to the context and the patient. The study shows the usefulness of sclerotherapy accompanied by cerclage for complete healing in cases of associated anal hollowness.

Keywords: child, rectal prolapse, sclerotherapy, cerclage

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Introduction

Mucosal prolapse of the rectum is defined as a slide of the herniated rectal mucosa across the anus onto the muscularis propria in the form of a bulge.¹ It is confined to the rectal mucosa in 95-98% of cases, but in certain advanced forms may involve the entire rectal wall.² It is a common condition in children.³ Diagnosis is clinical and straightforward, relying mainly on history-taking and physical examination. Treatment is based primarily on hygienic-dietary measures and medical therapy.⁴ In the event of failure, several surgical techniques, including sclerotherapy in the first instance, come into play.⁴ We present here an analysis of twenty-nine patients, nineteen of whom were treated with sclerotherapy. The aim of this work is to assess the medical treatment and efficacy of sclerotherapy at the CNHU-HKM in Cotonou (Benin).

Methods

This was a retrospective cross-sectional study in the pediatric surgery department of the Centre National Hospitalier et Universitaire Hubert Koutoukou Maga in Cotonou over a four-year period (January 2018 to December 2021). We performed an exhaustive recruitment of all patients followed for rectal prolapse. The criteria studied were the outcome of a circumferential reddish mass exiting through the anus during defecation, the time to consultation, spontaneous regression of this mass or after pressure maneuvers, nutritional status measured weight and height curves and body mass index, the presence or not of chronic constipation or diarrhea, clinical and biological anemia, sacral malformation and proposed treatment. Patients with intussusception and prolapsed pudding at the anus were excluded. Medical treatment was proposed as first-line therapy, based on reduction of the prolapse and treatment of constipation, diarrhea and malnutrition. Treatment

consisted of antiparasitic agents, imidazoles (metronidazole), multivitamins and mild laxatives (kerosene oil), as well as hygienic and dietary measures to increase dietary fiber, daily water intake and postural measures.

For children presenting with diarrhea, after assessment of hydration and nutritional status, medical treatment combined oral rehydration salts, an anti-diarrheal and an anti-anemic agent. The failure of this medical treatment, characterized by intermittent recurrence of the prolapse over a fortnight, led to the indication of sclerotherapy. The product used was lauromacrogol 400 at 2% in all patients. The concentration was diluted to 0.5%. The injection was made using a 10cc syringe with a green needle under GA, with the patient in the waist position. The surgeon's lubricated left index finger was placed in the anal canal (Figure 1). Infiltration of lauromacrogol 400 was performed at 2, 4, 6, 8 and 10 o'clock. At each injection site, 2 cc of sclerosing product were infiltrated strictly under the mucosa, guided and controlled by the intra-rectal finger (Figure 1). In the event of anal hollowness, anal cerclage (Figure 2) is performed with a non-absorbable thread, which is removed on the seventh postoperative day. Follow-up clinic appointments were scheduled at two weeks, one month, three months and six months after sclerotherapy. The success criterion is the regression of rectal prolapse episodes after sclerotherapy.

Results

A total of 29 patients were enrolled. Mean age was 25.4 months, with extremes of 4 months and 54 months. The sex ratio was 0.61. Prolapse was total (Figure 3) in 100% of cases, with circumferential externalization of lengths ranging from 1 to 10 cm, with an average of 4 cm (Figure 4).



Figure 1 Infiltration session. Introduction of the needle guided by the operator's finger. Source: CNHU-HKM, pediatric surgery 2021.



Figure 2 Anal cerclage session. Source: CNHU-HKM, pediatric surgery 2021.



Figure 3 Total rectal prolapse with reddish, wrinkled, cylindrical rectal mucosa exteriorized through the anus. Source: CNHU-HKM, pediatric surgery 2021.

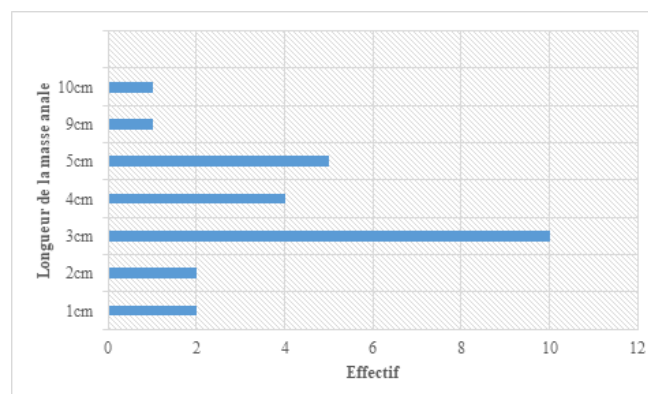


Figure 4 Distribution of children by length of externalized mass.

The average admission time was 64.8 days, with extremes of 1 hour and 330 days. Onset was abrupt in 20 cases and progressive in 9. Nineteen children had relapsed on medical treatment, representing a 65.5% failure rate, and 7 were lost to follow-up. Four children had a normal transit with at least one bowel movement a day, compared with 19 cases of chronic constipation and 6 cases of diarrhea. Malnutrition was a contributing factor in 7 cases, including one case of acute rickets. A complication of medium-abundance rectal discharge was noted in 4 cases. On rectal examination, the sphincter was loose in all 19 children with recurrences, 12 of whom had associated anal hollowness.

No parasitological examination was carried out, but systematic deworming was performed. X-rays of the sacrum were taken in 11 cases, none of which showed any malformations of the sacrum. The nineteen children who failed medical treatment underwent sclerotherapy. Two of them had recurrences (a recurrence 3 times in one child prompting further sclerotherapy sessions, with no recurrence after the 3rd session. In the second child, we noted a recurrence 4 months after sclerotherapy, necessitating a repeat session). Anal cerclage was performed on 12 children, with no recurrence noted. Four children were lost to follow-up after sclerotherapy. The average hospital stay was 24 hours. The mean follow-up was 26 months, with extremes of 14 and 48 months.

Discussion

Rectal prolapse is a benign pathology, occurring most frequently in children before the fourth year of life [4]. In our study, the mean age was 25.4 months with extremes of 4 months and 54 months, well below the data found by Ghorbel et al. and Automne et al.^{2,5} In the present study, 29 cases of rectal prolapse were recorded over a 48-month period. This represents an average admission of 7.25 cases per year. This figure is still higher than that of Ghorbel et al, suggesting a high frequency in the black African population and affecting much younger children. The predominant sex was female, with 18 cases out of 29, whereas Ghorbel and Automne^{2,5} reported a male predominance. This suggests that gender may not be particularly involved in the occurrence of rectal prolapse, as Cares et al.⁴ assert.

In clinical forms, partial rectal prolapse (mucosal rectal prolapse) involves the mucosa only, and takes the form of radial folds protruding half an inch to an inch beyond the anal margin.⁴ On the other hand, full-thickness or complete rectal prolapse (total rectal prolapse), rare in children, involves protrusion of the entire rectal wall through the anal canal, visualized as circular folds of mucosa, usually protruding more than 2 inches from the anal margin. When the rectum does not

completely prolapse through the anal canal, it is referred to as occult rectal prolapse.^{1,4,5} The mucosal form is the most common, accounting for 95–98% of cases.² Its etiologies can be grouped into five main groups: increased abdominal pressure, diarrheal diseases, parasitic infections, rectocolonic neoplasia and malnutrition, which reduces ischio-rectal adipose tissue.

Constipation and parasitic diarrhea are the main contributing factors in children.^{1,2,4,5} However, there are anatomical predisposing factors that can lead to prolapse, such as lax attachment of the mucosa to the underlying layers of the rectal wall, immaturity of receptors in the wall of the rectal ampulla and anal canal, verticality of the sacrum, and absence of an anal cape.^{1,4–6} In older children, the spine is doubly curved and the rectum is not vertical in line with the anal canal, but rather horizontal, forming a marked angle with it.¹ In infants and young children, the sacrum and coccyx are almost vertical,⁶ and the rectum is vertical in the same axis as the anal canal.

In addition to medical treatment aimed at the cause of the prolapse, manual reduction can be attempted by grasping the mucosa with lubricated fingers and pushing back the prolapse. An edematous mucosa may require firm, constant finger pressure for a few minutes to reduce swelling.^{4,7} If the prolapse returns immediately after digital reduction, taping of the buttocks may be necessary for a few hours. Sitting with knees bent will help straighten the anorectal angle and promote bowel movement. Some children may need a step stool to achieve an adequately bent knee angle.⁴

From a surgical point of view, injection sclerotherapy would be the most commonly used first-line surgical procedure for patients with recurrent rectal prolapse. The success rate of sclerotherapy in our study was 89.47%. Other less invasive techniques include linear cautery and insertion of material to fill the presacral space.⁸ A wide range of invasive surgical procedures can be performed for recurrent rectal prolapse. Rectopexy, or mobilization and fixation of the rectum to the pre-sacral fascia, resection of the redundant mucosa or of the full-thickness rectosigmoid are therapeutic options but very rarely indicated in children.⁴ Prolapse was total in 100% of cases, with circumferential externalization varying in length from 1 to 10cm, with an average length of 4cm in our study. In contrast, the literature points to the predominance of mucosal forms, as highlighted in Ghorbel's work.²

The average admission time was 64.8 days, with extremes of 1h and 330 days. This long delay may be due to the fact that parents in the present study consider rectal prolapse as hemorrhoidal bulges. They thus indulge in a variety of traditional treatments, only thinking of consulting a specialist at a much later stage, and ultimately allowing the slippage to become more pronounced. This long delay could also be the reason for the almost total form obtained in this study. Children presenting with constipation were the most represented (65.51%) of the study population, followed by cases of diarrhoea (6/29). Only 4 children had normal transit. In African literature, constipation is generally the most frequent risk factor.^{1,4–6} Malnutrition was a contributing factor in 7 cases, including one case of acute rickets. Malnutrition is thought to reduce perirectal support tissues, favouring mucosal slippage.

A complication of rectal discharge was noted in 4 cases. This case involved a child who had undergone a traditional treatment consisting in applying a leaf poultice to the prolapsed mucosa in order to reduce

it. Subsequent mucosal erosion was a source of rectal discharge. Nineteen children had relapsed on medical treatment, giving a failure rate of 65.5%, and all benefited from sclerotherapy. Of the children who benefited from sclerotherapy, two had a recurrence, necessitating further treatment. The efficacy of sclerotherapy was 89.5%. Anal cerclage was performed in 12 children, with no recurrence observed. We therefore conclude that a combination of sclerotherapy and anal cerclage using the Tiersch technique ensures 100% efficacy. The two children who recurred in the present study had the longest admission times (300 and 330 days), with a prolapse of 10cm in length and a very loose anal sphincter on examination. Although the number of cases is small, it seems that a long extra-abdominal stay of the mucosa, a long-externalized length and a loose anal sphincter are risk factors for failure of both medical treatment and sclerotherapy. In such cases, it would be advisable to plan several infiltration sessions (two or three) from the outset, in conjunction with anal cerclage.

Conclusion

Rectal prolapse in children is a frequent and benign condition, generally easy to diagnose, and the aim of treatment with sclerotherapy is to accelerate recovery without sequelae. Hygienic and dietary rules are the key management measures. This study demonstrates the usefulness of sclerotherapy combined with cerclage for complete healing.

Acknowledgments

None.

Conflicts of interest

The authors declare no conflicts of interest

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