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***Case Report***

# Complete Rectal Prolapse in Children: Case Report, Review of Literature, and Latest Trends in Management

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## Abstract

**BACKGROUND:** Complete rectal prolapse is the circumferential descent of all the layers of the rectum through the anus. It often leads to bleeding, obstructed defecation, incarceration or fecal incontinence.

**CASE REPORT:** We present a rare case of a 4-year-old child with complete rectal prolapse of 12 cm in length. The prolapsed rectum was manually repositioned after reducing the oedema. The precipitating factor was identified as excessive straining while passing stools. A change in position while passing stools was advised along with a high fibre diet and a stool softener. Recurrence was not observed in the 3 month of follow-up.

**CONCLUSION:** Most cases of pediatric rectal prolapse are managed conservatively by addressing the associated and precipitating etiological factors. Surgical intervention may be required for recurrent or persistent cases.

## Introduction

Complete rectal prolapse is a condition in which there is an extrusion of all the layers of the rectum through the anal sphincter [1]. The incidence of complete rectal prolapse is unknown in children, and there is considerable debate regarding its etiopathogenesis. Pediatric rectal prolapse occurring in the age group of 1-4 years usually resolves spontaneously or within a year of conservative management. Children not responding to conservative management may require surgical intervention [2]. We present a case of complete rectal prolapse in a 4-year-old child due to its large size and rarity. We have also reviewed the literature to discuss its up-to-date medical and surgical management.

## Case report

A 4-year-old child presented to the department of pediatrics with a complaint of a red-coloured mass protruding from his anus. The parents of the child had first observed this mass while the child was passing stools, two hours earlier. No history of chronic constipation, chronic cough, weight loss, or presence of parasites in stools was present. The vitals of the child were normal. The weight of the patient was on the 42$^{nd}$ percentile (16 kg), and the height was on the 65$^{th}$ percentile (105 cm), using WHO data. Abdominal palpation showed no tenderness. On local examination, the length of the protruding rectal wall was around 12 cm with circumferential folds and slight oedema. No ulcerations were present (Figure 1). A diagnosis of complete rectal prolapse was reached based on the clinical features and examination.

Powdered sugar was sprinkled on the extruded rectal wall to reduce the oedema, and the prolapsed rectum was repositioned manually. The HIV test, sweat test, and stool culture test of the patient were negative. The blood counts and renal function tests were within the normal range. The patient was discharged the next day with anticipatory guidance to the parents. A high fibre diet and a stool softener were also prescribed. The follow-up visits of the patient in the subsequent 3 months did not show recurrence of the rectal prolapse.

*Figure 1: A four-year-old child with complete rectal prolapse*

## Discussion

Rectal prolapse could be partial or complete. In partial rectal prolapse, a part of the rectal wall or the anal mucosa protrudes out of the anal verge, whereas incomplete rectal prolapse all the layers of rectal wall protrude out [1]. Depending on the length of the protruding rectum from the anal verge, complete rectal prolapse is classified as 1$^{st}$, 2$^{nd}$, and 3$^{rd}$ degree [3]. In our case, the complete rectal prolapse was of the 1$^{st}$ degree as the length of the protruding rectum was more than 5 cm and involved the mucocutaneous junction.

The peak age at which rectal prolapse is observed in children is 1-3 years without any sex predilection [4]. Although the pathogenesis of complete rectal prolapse not completely understood, the currently accepted hypothesis states that complete rectal prolapse starts as a circumferential intussusception of the rectum, which gradually progresses to complete rectal prolapse [5].

The anatomical factors which have been found to play a role in the higher susceptibility of rectal prolapse in children include vertical configuration of the sacrum, greater mobility of the sigmoid colon, loose attachment of the rectal mucosa to the underlying muscular, and poorly developed Houston's valves [6].

Predisposing factors contributing to rectal prolapse include chronic constipation, chronic cough, pertussis, cystic fibrosis, malnutrition, intestinal parasites, myiasis, diarrheal diseases, ulcerative colitis, CMV colitis, pseudomembranous colitis, rectal neoplasms, rectal polyps, ectopia vesicae, meningomyelocele, Ehlers-Danlos syndrome, Hirschsprung's disease, urinary obstruction, autism, and surgical procedures near the anus [2] [7]. In our case, we found that the precipitating factor could have been excessive straining while passing stools. Hence, the parents of the patient were advised to place the child on an adult-type of the toilet seat to reduce the strain. A high-fibre diet and a stool softener were also prescribed.

We considered ileocecal intussusception as one of the differential diagnosis. However, it was ruled out subsequently as abdominal tenderness was absent and the groove between the emerging mass and the margin of the anus, when a finger was inserted, was less than 3 cm. Partial rectal prolapse was ruled out by the size, thickness, and presence of characteristic concentric folds of the prolapsed rectum [3].

Most cases of pediatric rectal prolapse resolve spontaneously or may require manual reduction, as in our case. If the underlying conditions and precipitating factors are identified and addressed adequately, chances of persistence or recurrence are very low. Fortunately, recurrence was not observed in our patient in the 3-months of follow-up. Only around 10% of the cases do not respond to an a12-month trial of conservative management [2].

The procedure of choice for cases of persistent rectal prolapse unresponsive to conservative management is injection sclerotherapy, wherein a sclerosant (dextranomer microspheres, 98 % ethyl alcohol, 5% phenol in almond oil, 50% dextrose, 15-30% saline, etc.) is injected in the submucosal plane in the perirectal area [2] [5] [7]. This leads to an inflammatory reaction which causes adhesions between the rectal mucosa and the underlying muscles. Injection sclerotherapy has a success rate of 90-100%.

For pediatric cases not responding to injection sclerotherapy, a wide variety of surgical procedures are mentioned in the literature. However, no consensus is present over the choice of the surgical procedure due to an almost similar success rate. The guiding principles of each these surgical procedures, broadly classified as perineal or abdominal, are either narrowing/strengthening the anal sphincter, suspending the rectum, excising the redundant rectum, or restoring the weakened pelvic floor [3] [5]. New surgical techniques gaining acceptance include laparoscopic and robotic repair. The selection of the

procedure is largely based on the patient's clinical features and the expertise of the surgeon [2] [5] [7].

In conclusion, conservative management is the best approach for most cases of pediatric rectal prolapse. Correctly identifying and addressing the precipitating factors is the key for preventing recurrences. If unmanaged conservatively, injection sclerotherapy is the preferred procedure of choice. Invasive surgical interventions should be considered in recurrent and persistent cases.

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