

# Rectal prolapse in children: a study of 71 cases

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## Abstract

**Introduction:** Prolapse of the rectum is the herniation of the rectum through the anus, which may be categorised as mucosal or complete.

**Aim:** To evaluate the clinical manifestation, treatment, and surgical complications of children with rectal prolapse over a 6-year period.

**Material and methods:** This study was carried out on children aged < 14 years who were admitted or referred for rectal prolapse that failed to respond after medical treatment in Imam Khomeini and Abouzar Children's Hospital. Duration of the study was 6 years starting in March 2002. These cases were referred after failure of medical and conservative treatment. Age, sex, clinical manifestation, and type of procedure were recorded. Analysis was done using SPSS version 11.0 (SPSS Inc, Chicago, IL, USA). The  $\chi^2$  test was used for comparison.

**Results:** Seventy-one cases were included in this study. Of these cases, 50 (70.4%) were male and 21 (29.6%) were female ( $p < 0.0001$ ). Mean age of cases was  $4.97 \pm 3.42$  years (range: 2 days to 13 years). Of the male cases, 38% were in the age range of 3–6 years. In female cases, 57.1% were in the range of 1.5–3 years. Of all 71 cases, injection sclerotherapy was done for 50 (70.43%) for the first time. Twenty-one cases had history of injection sclerotherapy and 16 (22.53%) were treated by perineal surgery, and 5 (7.04%) had abdominal surgery. One case experienced recurrent rectal prolapse (1.40%) following injection sclerotherapy.

**Conclusions:** In girls, more than half of the cases were in the age range 1.5–3 years. Among male cases, 38% were in the age range of 1.5–3 years. The results of treatment of rectal prolapse in our hospitals was similar to that seen in developed countries.

## Introduction

Prolapse of the rectum is the herniation of the rectum through the anus, which may be categorised as mucosal or complete [1]. The mucosal type of rectal prolapse is the least serious form and is the most common type in the paediatric population [2]. Diagnosis of rectal prolapse requires physical examination and obtaining thorough history. However, diagnosis may be difficult especially in the paediatric population [3]. Most children with rectal prolapse do not require specific treatment. Treatment of constipation, treatment of parasitic infection, and avoiding excessive strain are appropriate measures for the treatment of uncomplicated rectal prolapse. Surgical procedures may be required

for cases who failed to respond to medical methods [4]. Injection sclerotherapy is the first surgical method used for the treatment of cases who failed to respond to medical treatment. Children with recurrences after injection sclerotherapy may be candidates for surgical treatment [5]. Although there are several types of surgical procedures for the treatment of refractory rectal prolapse, few of them were used for treatment in a single institution [6].

## Aim

The aim of this study was to evaluate the frequency of surgical complications of rectal prolapse among children over a 6-year period.

## Material and methods

This study was carried out on children aged < 14 years, who were admitted or referred for surgery in Imam Khomeini and Abuzar Children's Hospital of Ahvaz-Iran. All patients referred for surgery after completed workup and failure of medical and conservative treatment for rectal prolapse. The duration of the study was 6 years starting on March 20, 2002.

### Statistical analysis

Analysis was done using SPSS version 11.0 (SPSS Inc, Chicago, IL, USA). The  $\chi^2$  test was used for comparison.

## Results

Seventy-one cases were included in this study. Of all cases, 50 (70.4%) were male and 21 (29.6%) were female ( $p < 0.0001$ ). Mean age of cases was  $4.97 \pm 3.42$  years (range: 2 days to 13 years). The age distribution is shown in Table I. The clinical manifestations are shown in Table II. The methods used for surgery are shown in Table III. The recurrence rate was 1.4% (1 case). Of all

**Table I.** Age distribution among cases

Age [years]	Male, n (%)	Female, n (%)	Total, n (%)
< 1.5	6 (66.67)	3 (33.33)	9 (100)
1.5–< 3	9 (42.86)	12 (57.14)	21 (100)
3–< 6	19 (86.36)	3 (13.64)	22 (100)
6–< 9	5 (71.42)	2 (28.58)	7 (100)
9–< 13	11 (91.66)	1 (8.34)	12 (100)
Total	50 (70.42)	21 (29.58)	71 (100)

**Table II.** Clinical manifestations of cases

Manifestation	Result, n (%)
Rectal prolapse	10 (14.1)
Exteriorization mass from the rectum	49 (69)
Diarrhoea	17 (23.9)
Constipation	6 (8.5)
Vomiting	6 (8.5)
Bleeding after defecation	26 (36.6)

**Table III.** Surgical methods used for treatment

Method	Result, n (%)
Sclerotherapy	50 (70.43)
Perineal surgery	16 (22.53)
Abdominal surgery	5 (7.04)
Total	71 (100)

cases, 21 had history of recurrent rectal prolapse following injection sclerotherapy. These cases underwent surgical procedures.

## Discussion

In the current study the mean age of the cases was 4.97 years (range: 2 days – 13 years), and 31% of cases were in the range 3–6 years. In the Antao *et al.* study the mean age of the cases was 2.6 years (range: 4 months – 10.6 years) [7]. In the UK, most rectal prolapses in children were seen before 2 years of age [8]. In Rwanda, the mean age of the cases was 4.3 years [8]. The mean age of our cases was similar to Rwanda and higher than in the study by Chaloner *et al.* [8] and the Antao *et al.* [7] study from the UK.

In our study (2002–2008), 60.6% of cases had age 1.5 to 6 years. In the Sadighi *et al.* study from 1982–2000, 60% of cases had age range from 2 to 6 years [9]. This shows that the peak age in Iranian children remained constant for 26 years.

In the current study, 70.42% of cases were male and 29.58% were female. Our result was similar to that from the Bahador *et al.* study from Iran, with a male-to-female ratio of 2.39/1 [10]. In the study by Sadighi *et al.* from Tehran-Iran, of 67 cases with rectal prolapse, 50 (75%) were male [9]. In the Antao *et al.* study, of 49 cases, 25 were male [7]. Another study reported equal distribution between boys and girls [11]. This difference between our results and those from other studies needs further research.

Prolapse of mass (96%), bleeding after defecation (36.6%), diarrhoea (23.9%), prolapsed rectum (14.1%), and constipation (6%) were the most common signs and symptoms in our study. Rectal bleeding, pain with defecation, and incontinence were the most common symptoms in the study from Egypt [12]. Constipation was present in 8.5% of our cases. About 15–65% of cases with rectal prolapse have constipation [13]. The exact prevalence of constipation in our country is unclear, but it seems higher than in our study.

In our study, injection sclerotherapy was the most commonly used procedure. The recurrence rate was 1.40% in our study. In the Sadighi *et al.* study [9], sclerotherapy was used for 52% of cases, which is lower than in our study. Rahman *et al.* reported a 93.3% response to injection sclerotherapy for their patients [14]. In the Antao *et al.* study, in 14-months follow-up the recurrence rate was zero [7]. In the study by Zganjer *et al.* on 86 children with rectal prolapse, 95.3% of patients showed a response to injection sclerotherapy [6].

The perineal approach had a lower operative mortality and morbidity than the abdominal approach [15, 16]. Due to the low sample size of cases who underwent

abdominal approach, a conclusion was not possible in our study. In the study by Brown *et al.*, 10% of cases experienced recurrent prolapse [17]. Abdominal rectopexy is the method of choice for the treatment of rectal prolapse [18].

In this study we used saline as a sclerosant with more than 90% success. Ethyl alcohol [10], D50W [19], 15% saline solution [20], and cow's milk [6] were used and reported to have efficacy of more than 90% by others. Our study and most of the other studies [7] showed that injection sclerotherapy is the most common effectively used procedure for treatment.

The main limitation of this study was the retrospective method.

## Conclusions

The success rate of injection sclerotherapy in our hospital was similar to that seen in other studies. The average age of the cases was higher than in European studies. The male-to-female ratio in two studies from Iran were higher than reports from other countries. We recommend another study to clarify the high ratio of male-to-female in our country.

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## Conflict of interest

The authors declare no conflict of interest.

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