



## Cross-sectional Study

Treatment of internal rectal prolapse in children: A cross sectional study<sup>☆</sup>Salahedin Delshad<sup>a</sup>, Balal Delshad<sup>b</sup>, Parisa Mogheimi<sup>c</sup>, Ghobad Heidari<sup>d,\*</sup><sup>a</sup> General Surgeon and Pediatric Surgeon, Maryam Hospital, Karaj, Iran<sup>b</sup> General Surgeon and Breast Surgery Specialist, Maryam Hospital, Karaj, Iran<sup>c</sup> Maryam Hospital, Karaj, Iran<sup>d</sup> Department of Pediatric, Faculty of Medicine, Lorestan University of Medical Sciences, Khorramabad, Iran

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## ABSTRACT

**Objectives:** Internal rectal prolapse in children is one of the causes of annoying and drug-resistant constipation. The disease causes a type of obstructive constipation due to the appearance of mucosal folds in the distal rectum. If the diagnosis is made in time according to the methods proposed by the author, the treatment can also be done with simple techniques. In this article, the treatment methods for this well-known disease are presented.

**Methods:** This is a prospective cross-sectional study, Sixty children (36 girls and 24 boys) between the ages of 6 months and 15 years who have specific symptoms of this disease and different degrees after definitive diagnosis of anesthesia with Delshad-mash have been treated with the sclerosing solution under the rectal mucosa or excision prolapse.

**Results:** Depending on the severity of the disease, treatment with a subcutaneous injection of sclerosing solution responds well. The condition resolves after years of suffering from high degrees of prolapsed mucosal excision.

**Conclusion:** Diagnosis of internal rectal prolapse can be made based on specific symptoms and barium enema radiology before the anesthesia test for children and determine the patient's treatment path and prevent additional operations such as colostomy-pulmonary with misdiagnosis of Hirschsprung.

## 1. Introduction

Internal rectal prolapse is one of the specific diseases that cause obstructive constipation [1]. Because such patients refer to different doctors to treat constipation and try various drugs but do not get results, this disease is annoying and resistant to drug treatment with specific symptoms such as difficulty in defecation, severe pain during defecation, elimination in small and hard or soft masses, tightening of the back and redness of the face and sweating during defecation, escaping from sitting on the toilet and preferring to stand. Disposal in the corner of the room is unknown to many physicians [2,3]. It is also associated with greater economic burden and reduced quality of life [4]. Using the experiences of the last ten years about this disease, which have been published in various articles [1], while providing radiological diagnostic methods and under anesthesia and delshad mash test, the author has treated and achieved successful results. In this article, the treatment methods for this disease will be presented.

## 2. Materials and methods

This is a prospective cross-sectional study, Sixty children (36 girls and 24 boys) aged six months to 15 years with symptoms of chronic constipation and difficulty passing stools, pain and redness of the face and sweating and tightening of the back and choosing the corners of the walls to defecate and fear of sitting on the toilet and faecal excretion in the form of hard or soft masses and sometimes large masses were examined in (XXX). In the barium enema photo performed for 49 of them, the activity of the mucosa in the distal rectum and the examination and test of the delshad mash under anesthesia of mucosal prolapse was observed, and the diagnosis of internal rectal prolapse was confirmed. In proportion to the degree of prolapse, for patients with first degree (12 cases) and two (24 cases), injection of a sclerosing solution (glycerin phenike) under the rectal mucosa in the amount of 2–2.5 cc and grade 4 (15 cases) excision of the prolapsed mucosa and repair Rectal mucosa was injected twice for grade 3 (19 cases). From group 3, two cases due to recurrence of the disease after two injections required prolapse mucosal excision surgery.

<sup>☆</sup> This study was approved by the Research Ethics Board of Alborz University of Medical Sciences.

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This study was approved by the Research Ethics Board of (XXX).

The methods are stated in accordance with STROCCS 2021 guidelines [5].

Unique identifying number is: researchregistry:7990.

### 3. Results

After injection of a sclerosing solution, complete recovery was achieved in 36 cases of groups 1 and 2 (Table 1). In addition to relieving constipation, difficulty and pain during defecation and redness of the face, sweating disappeared. Fear of the toilet continued in 4 cases for up to 3 months, after which it improved, and three children under two years old with diapers which had painful lumbar tightness and defecation, after injection easily and without tightening and redness of the face and sweat. Out of 19 patients in the 3rd-degree group, 17 patients showed complete recovery after the second injection, and two others underwent excision surgery due to recurrence of the disease (Table 2). Another person had symptoms such as low back and fear of the toilet, but the pain in defecation was seen in some cases. In 5 people who underwent surgery, complete recovery was achieved, and all disease symptoms disappeared (Table 3).

### 4. Discussion

Constipation is one of the most common diseases in children, and two-thirds of referrals to pediatric gastroenterologists are for constipation. In general, constipation falls into two groups: idiopathic and requires medical treatment, and the second group, which requires surgery. Meanwhile, internal prolapse of the rectum in children, which is one of the diseases causing obstructive constipation, when referred to pediatricians and gastroenterologists, is considered idiopathic constipation and undergoes medical treatment [3,5]. Because drug treatment is ineffective for internal rectal prolapse, other drugs are tested on referrals but remain ineffective. Families of patients are turning to herbal remedies in desperation for new medicines. And barium enema radiographs are requested. In barium enema, a view similar to stenosis at the end of the rectum and a radiologist misreporting it forces the surgeon to recommend a colostomy-pulmonary-closure surgery, which is sometimes performed. At the same time, internal prolapse of the rectum is caused by folds of the distal mucosa of the rectum and causes a kind of obstructive constipation and prevents easy excretion of faecal masses [1–3]. This prolapse can be seen in two forms: Recto-rectal and Recto-anal. In terms of the severity of the disease, grading the author into four groups of mild, moderate, severe and very severe [5] helps the physician choose the type of treatment. Diagnosis of rectal prolapse in children is possible with radiology. In barium enema, the observation of filling defect shadows in the distal area of the rectum means internal prolapse of the rectum [1,2]. Examination under anesthesia by delshad mesh test and observation of rectal mucosal folds protruding from the anus opening confirms the diagnosis. Based on the author's experiences during the last ten years, especially the research project to compare patients with specific symptoms of rectal prolapse with patients who have not undergone surgery for other operations in childhood, it was found that these symptoms are specific to such patients [1].

On the other hand, they are treating these patients with methods of injection of a sclerosing solution (glycerin phenike) in the distal rectal mucosa in grades 1, 2, 3 and excision of the prolapsed rectal mucosa in

**Table 1**  
Number of Case & Age mean.

		Case
Sex	Boy	24 (40%)
	Girl	36 (60%)
<b>Total</b>		60 (100%)
<b>Age Mean (year)</b>		4.7 ± 0.45

**Table 2**

The degree of internal rectal prolapse (DIRP) in children.

Severity (Grade)	Size (Millimeter)	Decision	Number
Low (Grade 1)	≤3 mm	Injection	12 (20%)
Moderate (Grade 2)	3–5 mm	Injection	24 (40%)
High (Grade 3)	5–10 mm	Injection ± Resection	19 (32%)
Severe (Grade 4)	≥10 mm	Resection	5 (8%)
<b>Total</b>			60 (100%)

**Table 3**

The degree of internal rectal prolapse (DIRP) in children.

Severity (Grade)	Number	Results	Percent
Low (Grade 1)	12 (20%)	Injection with complete recovery	12 (100%)
Moderate (Grade 2)	24 (40%)	Injection with complete recovery	24 (100%)
High (Grade 3)	19 (32%)	Injection with complete recovery	17 (89%)
		Injection then Resection with Complete recovery	2 (11%)
Severe (Grade 4)	5 (8%)	Resection with Complete recovery	5 (100%)
			60 (100%)
<b>Total</b>			

grade and some cases, grade 3 and their recovery and relief of symptoms. The emergence of natural defecation shows that internal rectal prolapse in children is a fact and should be given special attention. Accepting this fact and taking action to treat suffering children, there is practical help in creating a normal life for the digestive system and relieving the family from the double suffering of several types of sclerosing substances to create fibrous tissue between the mucous layer and the muscular layer of the rectum. Alcohol 90, hypertonic glucose 50%, saline solution in water 20%, and phenolic glycerin solution are the most common (5, 6). For the least side effects, the author prefers glycerin (7). Injection of 2–2.5 cc in each of the points 12, 3, 6, and 12 helps create fibrosis, preventing the rectal mucosa from moving to the distal and creating wrinkles (Photo 3). The points that must be observed during the injection are careful to enter the solution into the arteries and not inject a significant amount. At high injections, an increase in the thickness of the fibrosis may impede the movement of the crystallinity. It may be another factor in the onset of stiffness with pain in defecation. If the prolapse has a high grade, i.e., 4 or grade 3, which has not improved with the injection, surgical treatment is proposed, and the prolapsed mucosa is excised. The intestinal mucosa is repaired (Photo 4). Patients in both groups have a complete result of this treatment. Only two patients in grade 3, after two injections and no results, underwent surgery, after which recovery was achieved.

Our study presents a new method for treating rectal prolapse in children with minimum complications and faster recovery. However, further studies are required to compare the outcomes of this methods with existing practices. Our study is limited to short term outcomes, small sample size and single age group only.

### 5. Conclusion

Internal rectal prolapse is one of the causes of obstructive constipation caused by folding the inner lining of the distal rectum. This disease has specific symptoms and can be definitively diagnosed by barium enema and under anesthesia with the delshad-mesh test. This painful and annoying disease can be treated by injecting a sclerosing solution under the distal rectal mucosa in mild and moderate cases or excision of the prolapsed mucosa in severe cases.

### Ethical approval

All procedures performed in this study involving human participants

were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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No funding was secured for this study.

#### Author contribution

Dr. Salahedin Delshad: conceptualized and designed the study, drafted the initial manuscript, and reviewed and revised the manuscript. Dr. Balal Delshad: Designed the data collection instruments, collected data, carried out the initial analyses, and reviewed and revised the manuscript. Dr. Parisa Mogheimi and Dr. Ghobad Heidari: Coordinated and supervised data collection, and critically reviewed the manuscript for important intellectual content.

#### Guarantor

Dr. Salahedin Delshad.

#### Consent

Not applicable.

#### Provenance and peer review

Not commissioned, externally peer-reviewed.

#### Availability of data and materials

All relevant data and materials are provided with in manuscript.

#### Human and animal rights

No animals were used in this research. All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013. This study was approved by the Research Ethics Board of Alborz University of Medical Sciences.

#### Declaration of competing interest

The authors deny any conflict of interest in any terms or by any means during the study.

#### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amsu.2022.104886>.

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