ORIGINAL ARTICLE

Outcome of sclerotherapy with 15% hypertonic saline in idiopathic rectal prolapse in children

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Abstract

Introduction: Idiopathic rectal prolapse is a relatively common self-limiting condition in infants and children. When conservative management fails, often sclerotherapy or surgical intervention is recommended. Injection 15% hypertonic saline is one of the safe, cost effective and technically readily available sclerosants.

Objective: To describe outcome of sclerotherapy with 15% hypertonic saline in patients with idiopathic partial rectal prolapse.

Setting: Department of Pediatric Surgery, The Children's Hospital and the Institute of Child Health, Lahore.

Materials and Methods: We enrolled 50 patients with idiopathic partial rectal prolapse, in whom conservative management failed, including 34 males and 16 females (M:F 1:0.5). This study carried out 18 months from January 2016 till June 2017. The mean duration of rectal prolapse was 11±6.9 months. Under GA 15% hypertonic saline was injected submucosally at 4 anal quadrants avoiding anterior anal aspects owing to close proximity with urethra or vagina. Up to three sessions were given where required and results analysed through SPSS 16.

Results: In 78% of patients resolution of prolapse occurred with single session of sclerotherapy. In 18% rectal prolapse resolved with two sessions of sclerotherapy. In 4% of patients, rectal prolapse settled with three sessions of 15% hypertonic saline sclerotherapy. One patient developed perianal abscess which was drained. There was no recurrence in any patient on follow-up of at least 6 months.

Connclusion: Injection 15% hypertonic saline is safe, easy to inject, cost effective sclerosing agent which could be prepared in hospital pharmacy. We found 100% success rate with up to three sessions of injections with 2% complication rate. Injection 15% hypertonic saline can be safely chosen as the sclerosing agent for idiopathic rectal prolapse in children.

Keywords: Idiopathic rectal prolapse; children; sclerotherapy 15% hypertonic saline; hypertonic saline.

Introduction:

Idiopathic rectal prolapse is extrusion of rectum as a whole or some of its part from the anal canal where the prolapse is not attributed to any neuromuscular abnormalities.[1] Idiopathic rectal prolapse is usually partial involving only mucosal prolapse.[2] Peak incidence of prolapse in children is between 1-3 years. Often presenting in initial years of life, idiopathic rectal prolapse is a benign condition and spontaneous resolution is common. About 50% of idiopathic rectal prolapse resolve with conservative management, however failure of resolution may require interventions. One of the recommended and widely accepted treatment option is injection sclerotherapy with various sclerosing agents such as sodium tetradecyl sulphate (STD), injection phenol in almond oil, injection ethanolamine oleate, injection 50% dextrose, injection hypertonic saline (15% and 30%), ethyl alcohol, and

cow milk etc.[3-9]

Injection 15% hypertonic saline is one of the safe, cost effective and technically readily available sclerosants. This study is performed to describe outcome of sclerotherapy with 15% hypertonic saline in patients with idiopathic partial rectal prolapse.

Materials and Methods:
The study was prospective analytical study. Total study period was 18 months from January 2016 till June 2017 and only idiopathic partial rectal prolapse resistant to conservative therapy in the childrerns from 3 to 6 years of age.

Injection 15% hypertonic saline was prepared in hospital pharmacy lab using 15gm of sodium chloride (pharmaceutical grade) dissolved in 100ml of sterile water inside laminar flow hood under aseptic measures.Under GA, 15% hypertonic saline was injected submucosally at 4 anal quadrants, avoiding anterior anal aspects owing to close proximity with urethra or vagina, under aseptic measures. About 15-20 ml of saline was used for one patient. While injecting saline needle was withdrawn slowly with injection at each location. Patient was discharged the same day. First follow up was done after 2 weeks of procedure and successive follow up every month for 6 months to declare the therapy successful. Some of the patients did require 2nd and 3rd sessions at 6 weeks interval for complete resolution.

Results:
There were total 50 patients including 34 males and 16 females (M:F 1:0.5). The mean duration of rectal prolapse was 11±6.9 months. In 32 patients (64%), the presentation was only rectal prolapse with occasional and insignificant bleeding per rectum. In 11 patients (22%), associated perianal pain and constipation were encountered. Significant bleeding per rectum was identified in 4 patients (8%) only.

In 39(78%) patients, resolution of rectal prolapse occurred with single session of sclerotherapy; whereas, 9(18%) patients required two sessions; and 2(4%) patients required three sessions of injection hypertonic saline sclerotherapy for resolution of rectal prolapse. Thus with one, two or three sessions all 50(100%) patients had total resolution. One patient (2%) had perianal abscess which was drained successfully. There was no recurrence observed on follow-up for 6 months.

Discussion:
Idiopathic rectal prolapse is a common benign condition characterized by partial or complete extrusion of rectal mucosa or the rectal wall.[10] This condition could present with pain, bleeding due to ulceration of prolapsed mucosa and may be associated with constipation. Most of the cases are self-limiting and more than 50% resolve spontaneously with conservative management. The persistent variety do not resolve with conservative management and due to recurrent prolapse, high frequency of manual reduction and patient-parent distress, these cases need sclerotherapy and occasionally surgical interventions.[11]

In our study we included patients with persistent idiopathic partial rectal prolapse for more than 3 months. Surgical procedure ranging from less invasive injection sclerotherapy to more aggressive surgery including abdominal posterior rectopexy, abdominal or perineal bowel resection, transanal suture rectopexy and posterior sagittal procedures.[11] We chose a simple and safe method that is injection sclerotherapy as a primary mode of treatment of rectal prolapse. Different types of sclerosing agents used by various researchers are 50% dextrose, hypertonic saline(15%, 25%, 30%), 5% phenol in almond oil, sodium tetradecyl sulphate, ethyl alcohol etc.[3-9]

Sclerotherapy causes an aseptic chemical inflammation leading to fibrosis and adhesion of rectal mucosa and the wall of rectum to its adjacent tissues.Injection 15% hypertonic saline could be easily prepared fresh in hospital laboratory and it has least complication even with systemic absorption of the solution. One of the most commonly used sclerosing agent is 5% phenol in almond oil with very good success rate but it does have complication of local abscess at injection

site and systemic phenol toxicity.[11]

A small study of 16 patients treated with injection 15% saline solution had a 100% success rate encouraged us to perform similar study in a larger group of patients.[7] In our study we obtained 100% cure rate after three sessions of successive injections. Being safe, easy, cost effective and easy preparation within hospital setup, injection 15% hypertonic saline could be primary treatment of choice especially in infants and children. It has 100% efficacy which could favour us to state that this agent can be treatment of choice for persistent idiopathic rectal prolapse. Although we came across one complication (perianal abscess) and the study showed variable response rate, with upto three sessions of injection all our patients were treated successfully.

Conclusion:
Injection 15% hypertonic saline could be used as primary mode of treatment for rectal prolapse in children who were non responsive to conservative management for idiopathic rectal prolapse. Till 3rd session all 100% patients had resolution of rectal prolapse with a single complication of perianal abscess. Thus our study shows injection 15% hypertonic saline as safe, inexpensive and easily available treatment for rectal prolapse in children.

Conflicts of interests: No

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Role and contribution of authors:
Kanchan Kayastha, collected the data, references and write the initial write up.

Bilal Mirza, collected the data, references and review the article and made the required changes.

Nasir Mahmood, helped in collecting the data and helped in introduction writing.

Muhammad Saleem, collected the references and helped in discussion and result writing.

Nabila Talat, collected the reference, data and helped in discussion writing.

Afzal Sheikh, collected the references and helped in introduction writing.

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