

Outcomes following sclerotherapy for mucosal rectal prolapse with oily phenol injection: single-centre review

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Abstract

Aim of the study To review the outcomes of injection sclerotherapy with oily phenol for mucosal rectal prolapse.

Methods Retrospective case note review of all children who underwent sclerotherapy with oily phenol injection as primary surgical intervention for mucosal rectal prolapse, from January 2007 to December 2015.

Main results A total of 31 patients were identified. Mean age at presentation was 4.8 years (range 5 months–12 years). 23 patients with mucosal rectal prolapse underwent injection sclerotherapy with oily phenol as primary procedure. Patients with full-thickness rectal prolapse ($n = 6$) and 2 with mucosal prolapse who had Thiersch stitch were excluded from the study. The cause for mucosal rectal prolapse was considered to be due to constipation ($n = 15$), idiopathic ($n = 7$), spina bifida ($n = 1$). Follow-up was for minimum 6 months (median = 4 years; range 6 months–17 years). Recurrence following injection sclerotherapy with oily phenol requiring further procedures was 30.4% (7/23).

Conclusions Injection sclerotherapy with oily phenol is a safe, effective and minimally invasive primary treatment option for mucosal rectal prolapse not responding to conservative management. In case of recurrence, a cautious re-examination under anaesthesia should be undertaken to exclude a missed full-thickness rectal prolapse before re-injecting.

Keywords Rectal prolapse · Sclerotherapy · Phenol

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Introduction

Rectal prolapse is a common presentation in children who are undergoing toilet training. In the UK, it is mostly related to straining during defecation, constipation and prolonged periods on the toilet. In developing countries rectal prolapse can also be secondary to diarrhoea or malnutrition [2, 3]. Initially, it is treated conservatively with diet and laxatives to soften the stool and reduce straining during defecation. Reducing the time on the toilet or a step stool in front of an adult toilet can also help resolve the prolapse non-operatively. Between 6 months and 3 years of age, about 20% of cases of rectal prolapse can be associated with cystic fibrosis [2]; hence, this should be excluded as an underlying cause.

When non-operative measures fail, a number of operative treatments have been described in the literature. Sclerotherapy with different agents including 30% saline, Deflux, 25% glucose, 5% sodium morrhuate, and even cow's milk has been described previously [1, 3]. We present the outcomes of using sclerotherapy with oily phenol in our centre over the past 9 years.

Materials and methods

A search of all patients who had undergone operative management for rectal prolapse in our centre from January 2007 to December 2015 was done. Retrospective case note review of all the patients who underwent sclerotherapy for mucosal rectal prolapse was performed. Diagnosis was assigned by the description in clinic and operation notes of either mucosal rectal prolapse or full thickness rectal prolapse. Patients undergoing treatment for full thickness rectal prolapse were excluded from the study.

Technique of sclerotherapy

5% oily phenol has been used as the sclerotherapy agent. It is injected submucosally into 3–4 quadrants. 1–4 ml of 5% oily phenol was used for injections in each patient.

Results

Thirty-one patients were identified as having operative management for rectal prolapse. None of these patients had cystic fibrosis.

Mean age at first presentation was 4.8 years (range 5 months–12 years). Fifteen patients had a preceding history of constipation. The main presenting complaint was bleeding per rectum in four patients, pain in four patients and passage of mucous per rectum in two patients; in these patients the rectal prolapse was an associated feature. Seven patients had no preceding symptoms and presented with parents noting the prolapse.

Twenty-five were described as mucosal prolapse and six patients were identified as having full thickness prolapse from clinical description in operation notes. Two of the 25 identified as mucosal prolapse had Thiersch stitch performed. Of the patients who had full thickness prolapse, four patients underwent Delorme's procedure, one had laparoscopic repair of full thickness prolapse and one patient was treated for an anal stricture after undergoing Delorme's and Thiersch stitch at another centre.

Six patients had significant associated medical history: bilateral vesicoureteral reflux, Diamond–Blackfan anaemia, perianal itching treated with anthelmintics, congenital adrenal hyperplasia and dysplastic kidneys, prematurity with developmental delay and spina bifida.

The mean duration of symptoms before any surgical intervention was undertaken was 8 months (range 12 days–3 years).

Of the 23 patients treated by sclerotherapy for mucosal rectal prolapse, 22 patients had been on laxatives, 1 patient was started on cows' milk protein-free diet, and 1 had an antegrade continent enema (ACE) procedure done in the past.

Outcomes of sclerotherapy

Patients who were underwent sclerotherapy were aged between 8 months to 12 years with a mean age of 4.7 years.

1–4 ml of 5% oily phenol was injected submucosally into 3–4 quadrants. There was documentation missing in operative notes in three cases where the location of the injection was not specified.

Sixteen patients out of 23 (69.5%) had a resolution of symptoms after a single sclerotherapy injection with oily phenol. One patient each required two and three sclerotherapy sessions before the prolapse was resolved; raising the success rate with two sclerotherapy injections to 73% and with three injections to 78.2%. The outcomes are outlined in Fig. 1.

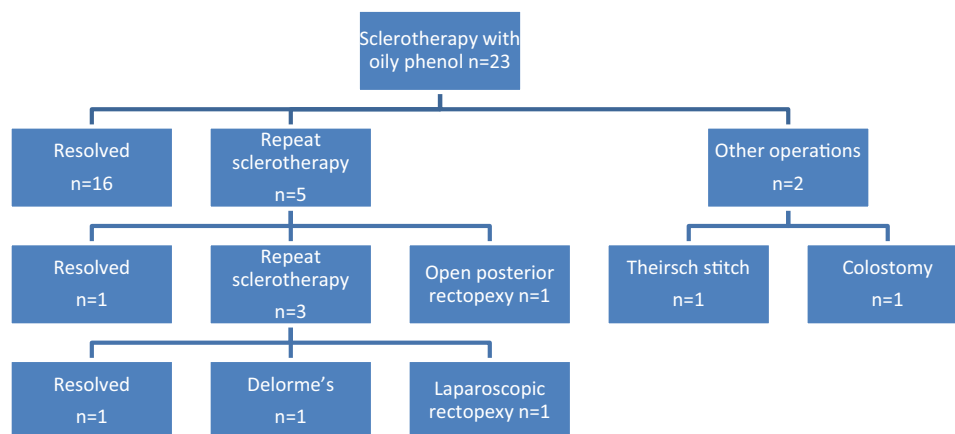
The selection of the second procedure has varied greatly with surgeon's preference.

The duration of follow-up ranged from 6 months to 17 years.

Discussion

Rectal prolapse is a common presentation in children. As in our study, they usually present with constipation, bleeding, pain and/or a witnessed mucosal. Prompt reduction is advised to prevent vascular compromise and complications of ulceration [3]. Medical management with laxatives is commenced in the first instance in the community or the surgeon assessing the child as most cases are related to

Fig. 1 Main results



straining during defecation and constipation [1]. Other causes of prolapse are cystic fibrosis, helminthic infection, polyps and malnutrition [2, 4]. None of our patients had any of these diagnoses.

In our study, operative treatment was indicated in patients who have failed medical management, have complications of prolonged prolapse (ulceration, bleeding), pain and multiple admissions, which is a similar pattern in other studies [1–3].

Whilst the use of multiple sclerosing agents has been described in literature, there is no indication of the method or reasons for selecting one over the other and this, therefore, depends on the preference of the surgeon. For mucosal prolapse refractory to medical management, the first line proposed by our study is sclerotherapy with 5% oily phenol. Other agents that have been used are 30% saline [2], Deflux [2, 3], 5% glucose [3], 5% sodium morrhuate [3] and cow's milk [1]. Success rate after use of hypertonic saline in children in one study was 83% after two injections [2]. With cow's milk protein the success rate was 95.3% after one application [1]. No complications were noted in either study.

The success rate in our study after three applications was 78.2% with no complications. Operative treatment after recurrence following sclerotherapy ranges from Thiersch stitch (one patient), Ivalon sponge implant, proctosigmoidectomy, posterior sagittal rectopexy (PSRP) (one patient), laparoscopic rectopexy (one patient), and Delorme's procedure (one patient) [1–4]. No recurrence was noted after Delorme's procedure, open and laparoscopic rectopexy and Thiersch stitch in our study; however,

35% recurrence rate has been seen with PSRP in one study [2].

This is a retrospective study of management of rectal prolapse with sclerotherapy with 5% oily phenol. There are no comparative studies involving phenol in the literature for treatment of rectal prolapse in children. Other agents have been described to have higher success rates in small number of children in different studies, a comparative study would be needed to establish superiority of one agent over another. Patient selection and surgeon's preference can bias the results. However, as a single centre, with experience with phenol, sclerotherapy can be suggested as the first-line treatment for rectal prolapse refractory to medical management.

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