

## Effectiveness of Retrograde Endoscopic Sclero Therapy (REST) for first and second degree internal hemorrhoids in children

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### ABSTRACT

**Background:** Hemorrhoids before the age of 20 is unusual. A third of patients require tailored treatment according to grades and complication of hemorrhoids, patient preference and expertise of procedure. Very scarce data is available regarding role of various nonoperative treatments in this age group.

**Aim:** To study the effectiveness of retrograde endoscopic injection sclerotherapy for first and second degree internal hemorrhoids in children.

**Method:** A prospective study conducted during Jan, 2012 to June'2013 in a study population comprising of all children with grade 1 and 2 internal hemorrhoids with complaints of bleeding per rectum were subjected to retrograde endoscopic injection sclerotherapy.

**Results:** Bleeding stopped in all children after retrograde endoscopic injection sclerotherapy at 3 months follow up.

**Conclusion:** Retrograde endoscopic sclerotherapy (REST) is a safe, well tolerated, and effective modality for management of bleeding internal hemorrhoids in children.

**Keywords:** hemorrhoids, children, endoscopic injection sclerotherapy

### INTRODUCTION

Internal hemorrhoids are the commonest cause of rectal bleeding in adults but are uncommon in children.<sup>1,2,3</sup> The most common manifestation of hemorrhoids is painless rectal bleeding associated with bowel movement. The definite diagnosis of hemorrhoidal disease is based on a precise patient history and careful clinical examination. The mucocutaneous junction of the ano-rectum, or dentate line, divides hemorrhoids anatomically into internal (above the junction) and external (below the junction). Internal hemorrhoids have been classified based on their appearance and degree of prolapsed.<sup>4</sup> A third of patients with bleeding hemorrhoids require treatment which needs to be tailored according to grades of hemorrhoids, patient preference and expertise of procedure.<sup>1</sup> Broadly, grade 1 and 2 hemorrhoids are treated with non operative treatment in the form of dietary modification, injection sclerotherapy, rubber band ligation, endoscopic band ligation, electro coagulation or infrared coagulation.<sup>1,4</sup> Surgery is indicated when non-operative approaches have failed or a complication arises. Primary goal of all forms of therapy is to

achieve fibrosis and obliteration of bleeding vessel. Injection sclerotherapy is one of the most commonly practiced, easily available forms of non surgical treatment in adults. Video endoscopic sclerotherapy is found to be a safe, well tolerated and effective treatment of bleeding internal hemorrhoids in adults.<sup>1</sup> The same has not been studied in children till date. The present study was done in eight children to determine the effectiveness of retrograde flexible video endoscopic injection sclerotherapy for first and second degree internal haemorrhoids.

### MATERIAL AND METHODS

Eight children with symptoms of bleeding per rectum of 6 to 10 months duration, presenting at paediatric outpatient department over a period of 18 months, diagnosed to have Gr. 1 -2 bleeding hemorrhoids were included in this study. There was no history of melena or hematemesis. General physical and systemic examination was normal in all except mild pallor (Hb 9 gm/dl) in one case. Liver and renal function tests and abdominal ultra sonogram were normal in all cases. After complete history and physical examination, all

children underwent a thorough perianal and proctoscopic examination to rule out anal fissure, fistula or skin tags and to ascertain the degree of hemorrhoids. All patients underwent colonoscopy with flexible video-colonoscopy to rule out any luminal source of bleeding. The colonoscopy was performed under conscious sedation or general anesthesia depending upon the age of the patient and tolerability of the procedure.

On completion of colonoscopy a standard gastro scope with 9.2 mm diameter was introduced in the rectum for 8 – 10 cms and then retroflexed by turning the tip of the instrument upward and simultaneously, gently advancing and torquing the endoscope in counter-clockwise fashion to have a clear view of the dentate line, hemorrhoids and relationship of hemorrhoids to the dentate line. The characteristics of hemorrhoids were noted. A standard 23 G, 160 cms endoscopic sclerotherapy catheter preflushed with the diluted sclerosant was used for injection. With endoscope in the retroflexed position, the hemorrhoidal complexes were viewed in retrograde fashion (from above) and the endoscope maneuvered to facilitate precise placement of the injection needle in the proximal portion of the hemorrhoidal column above the dentate line.

0.5 to 2.0 ml of 1.5% polidocanol was directly injected into each of the hemorrhoidal columns, depending upon the size of the hemorrhoids. The end point of each injection was to achieve complete blanching of the hemorrhoidal column. All columns were injected in a single sitting, one after the other, by rotating the scope in anal canal. At the end of the procedure insufflated air was suctioned so as to reduce abdominal distension. Patients were advised Sitz bath twice a day and stool softeners for one week after the procedure.

## RESULTS

Bleeding stopped after the injection in all patients at 3 months follow-up. None of them required a repeat procedure. None of them had complications at 3 months follow up.

## DISCUSSION

Hemorrhoidal disease does occur in children and adolescents, often related to a diet deficient in fibre and poor hydration. although pathophysiology of hemorrhoids is not clearly understood, various other conditions like straining, prolonged lavatory sitting, constipation, diarrhea, and conditions associated with elevated intra abdominal pressure have been implicated.<sup>3</sup> Abnormal dilatation and distortion of the vascular channels, together with destructive changes in the supporting connective tissue within the anal cushion, is a paramount finding and now considered to be the most important etiological factor for development of hemorrhoids.<sup>4</sup>

A third of patients with bleeding hemorrhoids require treatment which needs to be tailored according to grades of hemorrhoids, patient preference and expertise of procedure.<sup>1,3</sup> Primary goal of all forms of therapy is to achieve fibrosis and obliteration of bleeding vessel. Injection sclerotherapy is one of the most commonly practiced, easily available forms of non surgical treatment. Various sclerosants have been used with comparable efficacy, tolerability and excellent results. Even 50% dextrose water, if properly utilized, has been shown to offer a simple, safe and effective modality of treatment.<sup>5</sup>

Conventionally, it is performed in an ante grade fashion using a rigid proctoscope, long injector needle such as lumbar puncture needle and the sclerosant injected at the base of hemorrhoid. In contrast to the flexible video endoscope, the rigid proctoscope has limited maneuverability, has a narrower field of view, leads to more discomfort at introduction and does not allow adequate documentation. Video endoscopic sclerotherapy is found to be a safe, well tolerated and effective treatment of bleeding internal hemorrhoids in adults.<sup>1,4</sup> Our study shows the effectiveness of retrograde flexible video endoscopic injection technique for first and second degree internal hemorrhoids in children, the fact not studied in this age group till now. Further studies with large sample size should be conducted to assess

effectiveness of Retrograde Endoscopic Sclero Therapy (REST) for first and second degree internal hemorrhoids in children

## CONCLUSION

Children also suffer hemorrhoids. Although various factors have been implicated, no conclusive cause could be documented. Constipation although noted in most children, can be implicated as a cause of bleed rather than etiology of hemorrhoids. Retrograde endoscopic sclerotherapy (REST) is a safe, well tolerated, and effective modality for management of bleeding internal hemorrhoids in children.

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