

Retrograde Endoscopic Sclerotherapy for Management of Internal Haemorrhoids

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ABSTRACT

BACKGROUND

Haemorrhoids are one of the most common anorectal conditions encountered in clinical practice and are recognised as a common cause of rectal bleeding, perianal itching and anal discomfort. Therapeutic treatment of haemorrhoids needs to be tailored according to grades and complication of haemorrhoids, patient preference and expertise of procedure. Very limited data is available regarding effectiveness of retrograde endoscopic injection sclerotherapy for the management of bleeding haemorrhoids. We wanted to study the effectiveness of retrograde endoscopic sclerotherapy (REST) for the management of various grades of bleeding internal haemorrhoids.

METHODS

A prospective study, included 87 patients with Gr. I, II and Gr. III symptomatic bleeding internal haemorrhoids. They were subjected to retrograde endoscopic sclerotherapy using Inj. Polidocanol to study its effectiveness in controlling bleeding. Effectiveness of the procedure was defined by stoppage of bleeding at 3 months follow up.

RESULTS

Bleeding stopped in 95.3 % cases after retrograde endoscopic sclerotherapy at 3 months follow up. No significant complications were observed with the procedure during the study period.

CONCLUSIONS

Retrograde endoscopic sclerotherapy is a safe, well tolerated and effective modality for the management of bleeding internal haemorrhoids.

KEYWORDS

Haemorrhoids, Retrograde Endoscopic Sclerotherapy

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BACKGROUND

Haemorrhoids, also called piles or “varicose veins of the anus and rectum” is one of the most common anorectal conditions encountered in daily practice. It has been estimated that approximately 5 % of Indian population suffers from haemorrhoids and that about 50 % of the population would have had haemorrhoids at some point in their life probably by reaching 50 of age.¹ Internal haemorrhoids are the commonest cause of rectal bleeding in adults but are uncommon in children.^{2,3,4}

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 haemorrhoids anatomically into internal (above the dentate line) and external (below the dentate line). Internal haemorrhoids have been staged or graded based on their severity. Goligher has graded the haemorrhoids for the accurate treatment. Thus, first degree haemorrhoids has visible vessels, second degree haemorrhoids prolapse with defecation and restore instantly, third degree lesions prolapse but requires manual replacement and fourth degree lesions prolapse out of the anal canal.⁵

Symptomatic bleeding haemorrhoids require treatment which needs to be tailored according to grade s of haemorrhoids, patient preference and expertise of the procedure.² The emphasis these days is towards more conservative, non-operative and minimally invasive outpatient therapies for treating haemorrhoids. Primary goal of all forms of therapy is to achieve fibrosis and obliteration of bleeding vessels. Broadly, grade I and grade II haemorrhoids are treated with non-operative treatment, in the form of dietary modification, injection sclerotherapy, endoscopic rubber band ligation, bipolar diathermy, direct current electrotherapy, and heater probe coagulation or infrared coagulation.^{2,3} These non-surgical approaches are successful in 80 % - 99 % of patients with bleeding internal haemorrhoids but in non-responders, surgery can be contemplated. Surgical haemorrhoidectomy is more effective than previously mentioned non-surgical forms of therapy in Gr. III haemorrhoids, but incurs additional complications, pain, and disability. Numerous studies have been conducted to evaluate and compare different modalities of treatment, but results have been inconsistent.

Injection sclerotherapy is one of the simple, safe and non-surgical treatment of bleeding haemorrhoids in adults.^{3,4} Injection sclerotherapy using proctoscope or the rigid sigmoidoscope, have limited manoeuvrability, has a narrower field of view with less preciseness of injection and leads to more discomfort at introduction of the instrument, and does not allow adequate documentation in contrast to the flexible video endoscope.²

Sclerotherapy using flexible video endoscope has been found to be a safe, well tolerated and effective treatment of bleeding internal haemorrhoids.² Till date, only a few studies have demonstrated effectiveness of endoscopic injection sclerotherapy for treatment of bleeding internal haemorrhoids.^{2,6,7} Endoscopic sclerotherapy can be performed in both antegrade and retrograde fashion; the antegrade fashion being similar to the approach using

proctoscope. The present study was conducted to assess the effectiveness of retrograde endoscopic sclerotherapy for treatment of various grades of bleeding internal haemorrhoids.

METHODS

This is a prospective cross sectional study including patients with symptoms of bleeding of intermittent or continuous fresh blood per rectum for a duration of more than 3 months and diagnosed to have Gr. I to Gr. III internal haemorrhoids.

Study Planning

All patients diagnosed to have Gr. I to Gr. III bleeding internal haemorrhoids were counselled about the procedure, including its alternatives, complications etc. by a nurse coordinator and subsequently informed consent was taken. A detailed general and systemic examination was done in all patients to rule out any co morbid conditions.

After a thorough rectal examination, to rule out fissure, fistula or skin tags and to ascertain the degree of haemorrhoids, all patients underwent colonoscopy with flexible video colonoscope to rule out any luminal source of bleeding. The colonoscopy was done under conscious sedation or general anaesthesia depending upon patients' preference, age of the patient and tolerability of the procedure.

In each patient after completing the colonoscopy a standard gastro scope with 9.2 mm diameter and 2.8 mm working channel was used for the procedure. The instrument was introduced in the rectum for 8 – 10 cms and then retroflexed by turning the big wheel upwards, and simultaneously gently advancing and torquing the endoscope in counter clockwise fashion to view the internal anal opening. Air was then insufflated, and endoscope withdrawn gradually, till the gastroscope was at the base of haemorrhoids. This was done to have clear view of the dentate line. The haemorrhoids were thus focused and their relationship with the dentate line noted. Care was taken to rule out visual extension of the haemorrhoid beyond the dentate line. The number of columns, size of each column, cherry red spots and presence of venous channel proximal to the haemorrhoids were also noted in all patients. A standard 23 G, 160 cms endoscopic sclerotherapy catheter pre flushed with the sclerosant was used for injection. With endoscope in the retroflexed position, the haemorrhoid complexes were viewed in retrograde fashion (from above) and the endoscope manoeuvred to facilitate precise placement of the injection needle in the proximal portion of the haemorrhoidal column above the dentate line.

Once appropriate placement was apparent, the tip of the injection catheter was then slightly pushed out of the working channel, the needle extended, and injections commenced. 1.5 mL to 2.0 mL solution of 2 % polidocanol was directly injected into each of the haemorrhoidal columns depending upon the size of the hemorrhoidal column till it completely blanches. Care was taken to inject the sclerosant inside the hemorrhoidal column and not in

peri haemorrhoidal location. The end point of each injection was to achieve complete blanching of the column. All columns were injected in a single sitting one after the other, by rotating the gastroscope inside the anal canal. At the end of the procedure, insufflated air was suctioned so as to reduce abdominal distension. Patients were observed for two to three hours for any complications and subsequently discharged with an advice of sitz bath twice a day and stool softeners for one week after the procedure.

All the study subjects were initially asked to come for follow up after 2 weeks. Patients were subjected to a repeat procedure (2nd session) if the first session did not achieve complete cessation of bleeding at 2 weeks follow up and then again at 4 weeks (3rd session), if still symptomatic. The procedure was considered as treatment failure, if the bleeding could not be completely controlled even after 3rd session of REST. All the study subjects were subsequently followed up for a period of at least 3 months. The success of the sclerotherapy procedure was defined by cessation of bleeding at 3 months follow up.

RESULTS

Most of our patients had been referred from the surgical units of our hospital or elsewhere for evaluation of bleeding per rectum (PR). There were 7 paediatric patients. Of the 87 patients enrolled in the study, 72 were males and 15 females, with 21 (24.13 %) grade I, 53 (60.9 %) grade II and 13 (14.94 %) grade III bleeding internal haemorrhoids respectively. The age and gender wise distribution of haemorrhoids is depicted in Table 1. Mean age of the patients included in the study was 49.3 years. And most patients belonged to 40 to 60 years age group. Almost 82.7 % of our patients were males. The patients in our series are thus slightly older and more male predominant than other surgical series. This is expected as most surgeons recommend colonoscopies for their patients only after 50 years of age for evaluation of other causes of bleeding PR.

Only two patients of grade I haemorrhoids required repeat procedure on follow up. 25 / 53 patients (47.16 %) of grade II and all 13 / 13 (100 %) in grade III haemorrhoids required second session of REST. None of Gr. I and Gr. II and 5 / 13 (38.4 %) patients of Gr. III haemorrhoids required third session of REST. 2 / 13 (15.38 %) patients with Gr. III haemorrhoids continued to bleed and were considered a treatment failure, although the bleeding was remarkably decreased in both these patients even after the second session of REST. One patient in Gr. II category who had initially responded to the procedure had break through bleeding by the end of 3rd month follow up and was considered a treatment failure (Table 2). Rest of the patients remained stable till last follow up at six months (although this was not a part of study protocol). Thus, the average number of sessions required to stop haemorrhoidal bleeding were one session in grade I haemorrhoids, two session in grade II haemorrhoids and two to three sessions in grade III haemorrhoids.

Only two subjects experienced severe pain after the procedure, requiring analgesics, presumably due to

extravasations of sclerosant distal to the dentate line. Both responded within one week of treatment with sitz baths, local application of anaesthetic jelly besides oral administration of analgesics. None of the other subjects experienced any serious side effects requiring admission and none had any other significant complications like rectal ulceration / stenosis or infections, which are usual surgical complications of haemorrhoidectomy.⁸

In a similar surgical series of 50 patients with grade II and grade III bleeding internal haemorrhoids injected antegrade with up to 3 mL of polidocanol, cumulative remission in bleeding was noted in 43 / 50 (86 %) patients only. In 25 patients with grade II haemorrhoids. 24 / 25 (96 %) patients achieved remission after 3 sessions of sclerotherapy,⁹ whereas more than 50 % of patients in our series required only one injection and 100 % achieved remission of bleeding after 2nd session of REST. Similarly, in case of grade III haemorrhoids the success achieved was only 72 % after 3 sessions,⁹ whereas more than 60 % patients achieved remission after 2nd session of REST itself and the cumulative remission rate after 3 sessions was almost 85 %. It may be noted that the dose of polidocanol used per session in our study was almost half of that used in the surgical series i.e. (1.5 to 2.0 mL vs. 3.0 mL respectively).

Grade of Haemorrhoids	Gr. I (n = 21)	Gr. II (n = 53)	Gr. III (n = 13)	Total (n = 87)
Gender Wise Distribution of Patients with Haemorrhoids n = 87				
Males	17	44	11	72
Females	4	9	2	15
Age Wise Distribution of Patients with Haemorrhoids n = 87				
< 40 years	8	17	4	29
40 to 60 years	10	29	7	46
> 60 years	3	7	2	12

Table 1. Age and Gender Wise Distribution of Patients with Haemorrhoids

Grade of Haemorrhoids	Grade I	Grade II	Grade III	Total (%) After Each Session of REST
1 st Session	19 / 21 (90.47 %)	28 / 53 (52.83 %)	0 / 13 (0 %)	47 / 87 (54.02 %)
2 nd Session	2 / 21 (9.52 %)	25 / 53 (47.16 %)	8 / 13 (61.53 %)	82 / 87 (94.25 %)
3 rd Session	0	0	3 / 13 (38.46 %)	85 / 87 (97.70 %)
Total (%) sessions required in each grade	21 / 21 (100 %)	47 / 47 (100 %)	11 / 13 (84.61 %)	

Table 2. Outcome of Patients after REST

DISCUSSION

The success rate of conventional injection sclerotherapy using rigid proctoscope is from 60 to 90 %.¹⁰ The present study demonstrates that REST achieved even higher success

rates in controlling haemorrhoidal bleeding. Overall success rate of the procedure in present study was 84 / 87 (96.553 %). Majority of patients of Gr. I and Gr. II haemorrhoids responded to single session of REST.

When performing a flexible colonoscopy to evaluate a patient with anorectal issues, partial air insufflations and scope retroflexion, allows the anorectal pathology to become more obvious and easier to characterize⁷ and can be photographed for future consultation and reference. The reason for overall good response with REST is due to preciseness of the site of injection and adequacy of the amount of sclerosant injected into the haemorrhoid, guided accurately by endoscopic vision.

The data on injection sclerotherapy of internal haemorrhoids although sparse, does not reveal any difference in the success rates depending upon the type of sclerosant used.^{2,11,12} Ponsky et al, reported excellent results with 23.4 % saline in 19 patients with symptomatic Grade I to Grade III internal haemorrhoids.¹¹ Alatisse et al achieved 100 % results with endoscopic haemorrhoidal sclerotherapy using 50 % dextrose.¹² Nihawan et al, although used both antegrade and retrograde techniques for sclerotherapy and concluded better results with retrograde technique rather than antegrade technique.² Better visualization of the site of injection and adequacy of amount of sclerosant injected; therefore appears to be the key determinants in achieving high success rates in controlling bleeding and alleviating complications, which are best achieved with REST.

REST was found to be a safe procedure in this study when compared with conventional sclerotherapy. When compared with rubber band ligation, sclerotherapy was noted to be superior to rubber band ligation in patients with Grade I haemorrhoids.¹³ For Grade II and Grade III, although rubber band ligation may provide higher efficacy with fewer sessions and recurrences, but with higher cost and higher risk of complications like pain and delayed bleeding.^{14,15} Another study found electro coagulation to be more effective and safe for treating haemorrhoids as compared to sclerotherapy, but was more painful.¹⁶

CONCLUSIONS

REST is a safe, well tolerated and effective modality for management of grade I to grade III bleeding internal haemorrhoids. As a rule of thumb, patients with grade I internal haemorrhoids require only one session of REST, patients with grade II haemorrhoids require 2 sessions and patients with grade III require three sessions or REST. There are no significant side effects or long-term complications as expected after the procedure.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.

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