ORIGINAL RESEARCH PAPER

General Surgery

COMPARISON OF BAND LIGATION AND INJECTION SCLEROTHERAPY IN SYMPTOMATIC FIRST AND SECOND DEGREE HAEMORRHOID PATIENTS

KEY WORDS: haemorrhoids, band ligation, sclerotherapy, polidocanol

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ABSTRACT

Haemorrhoid is a very common surgical condition of the anorectal region. Symptoms include bleeding, protrusion, discharge and discomfort. Band ligation and sclerotherapy are the most common local procedures in use today. Despite being so commonly used, few studies have compared the two procedures based on their efficacy. This case series focuses on the efficacy and complications of band ligation and sclerotherapy in symptomatic early stage haemorrhoids. Patients with first and second degree haemorrhoids were randomly assigned to band ligation(group A) or sclerotherapy (group B) and followed up regularly for post procedure complications and symptoms. No complications were seen in Group B at the end of two months while two patients(8.2%) had recurrence of bleeding per rectum in Group A at the end of two months and repeat procedure had to be done. This finding was statistically non-significant (p=0.13). Immediate post procedure pain was more in Group A (54.5%) as compared to Group B (45.5%). 63.6% patients in Group A and 72.6% patients in Group B were asymptomatic at the end of two weeks. Based on our study, it can be concluded that in symptomatic early stage haemorrhoids, band ligation provides quick relief of symptoms but has a higher rate of complications and recurrence, on the other hand sclerotherapy has a delayed response with lesser complications and recurrence. Both procedures are highly effective and easy to perform on an outpatient basis with quick patient recovery.

INTRODUCTION

Haemorrhoidal disease or piles is a very common surgical condition of the anorectal region with its worldwide prevalence being 4.4%[1,2]. Symptoms include bleeding, protrusion, discharge and discomfort. The most accepted theory regarding etiology is the "sliding anal cushion theory"[3].

Treatment of haemorrhoids depends on the degree of haemorrhoids and the associated complications if present. In third and fourth degree haemorrhoids, surgical managements are the choice of treatment. For first and second degree haemorrhoids, local treatments like Band ligation, Injection sclerotherapy, Infrared coagulation, bipolar diathermy, direct current therapy, cryotherapy, etc. are being performed[4]. Rubber band ligation and injection sclerotherapy are the mainstay of local treatment due to their ease of use and cost effectiveness[5,6,7,8].

Despite being so common, very few studies have compared band ligation and injection sclerotherapy procedures to analyse efficacy. So this randomised clinical trial compares the efficacy, outcomes and complications of these procedures in symptomatic first and second degree haemorrhoids with respect to

- Post procedure symptomatic relief
- Post procedure complications / recurrence of disease

METHODS

Patients with first and second degree haemorrhoids were randomly assigned to band ligation (group A) or sclerotherapy (group B) and were then evaluated for immediate post procedure pain, and followed up regularly for post procedure complications and improvement of symptoms at 2 weeks, 1 month and 2 months. No complications were seen in Group B at the end of two months while two patients (8.2%) had recurrence of bleeding per rectum in Group A at the end of two months and repeat procedure had to be done. This finding was statistically non significant (p=0.13)

RESULTS

A total of 22 patients were included in the study (11 in banding group, 11 in sclerotherapy group).

Mean age of patients was 44.63 ± 15.59 years. Mean age of patients in the banding group was 50.18 ± 16.38 years and the sclerotherapy group was 39.09 ± 13.20 years.

Most of the patients were males (77.3%) and the rest 22.7% were females with a sex ratio of 2.7:1.

The common symptoms included per rectal bleed and constipation, perianal itching and discomfort were rarer. All the patients included in the study had per rectal bleed which was associated with constipation on and off. Perianal itching was present in 36.3% patients and perianal discomfort in 45.4% patients. Mean duration of bleeding per rectum was 105± 103.99 days and mean duration of constipation was 4.82± 3.61 months, comparable in both the groups.

Twenty-one patients (95.45%) gave a history of constipation. Mean duration of constipation in patients was 4.82 ± 3.61 months (range 0-12 months). The mean duration was comparable in both the groups.

Majority of the patients in this study had grade II haemorrhoids(59.1%) and the rest had Grade I haemorrhoids which was comparable in both the groups. Majority of the patients had haemorrhoids located at 3 and 11 o'clock positions (27.3%).

Post procedure pain at 1 hour after procedure was more in Group A (54.5%) as compared to Group B(45.5%). 63.6% patients in Group A and 72.6% patients in Group B had no

per rectal bleed at the end of two weeks. (Table 1)

Table 1: Outcome of banding vs sclerotherapy at the end of two weeks

Outcome at two weeks	Banding (Group A)		Sclerotherapy (Group B)		Test statistics
	n	%	n	%	
No complications	7	63.6	8	72.6	c 2 = 3.86 df=2 p= 0.14 (Not significant)
Post procedure Pain	4	36.4	1	9.1	
Persisting bleeding PR	0	0	2	18.2	
Total	11	100.0	11	100.0	

Post procedure pain during the follow up was more in the Group A(36.4%) as compared to the Group B(9.1%). These findings were non significant (p=0.14).

There were no complications at the end of one month.

No complications were seen in Group B at the end of two months while two patients had recurrence of bleeding per rectum in Group A at the end of two months and repeat procedure had to be done. This finding was statistically non significant (p=0.13) (Table 2)

Table 2: Outcome of banding vs sclerotherapy at two months

Outcome at two months	Banding		Sclerotherapy		Test statistics
	n	%	n	%	
No complications	9	81.8	11	100.0	c 2 = 2.2 df=1 p= 0.13 (Not significant)
Recurrence	2	8.2	0	0	
Total	11	100.0	11	100.0	

DISCUSSION

Post procedure pain at 1 hour after procedure was more in Group A (54.5%) as compared to Group B(45.5%) Outcome at the end of two weeks: In our study, 63.6% patients in the banding group and 72.6% patients in the sclerotherapy group did not have per rectal bleeding at the end of two weeks (p=0.14) Post procedure pain was more in the band ligation group(36.4%) as compared to the sclerotherapy group(9.1%).These findings were non significant (p=0.14).

Outcome at the end of one month: In our study, there were no complications at the end of one month in either of the groups and both groups had no per rectal bleed.

Pandya et al[9] reported persistence of bleeding in 15% patients in band ligation group and 38% patients in sclerotherapy group. However, their findings were not statistically significant.(Table 3)

This difference in our findings was probably because of the medical therapy which was continued in the patients after the procedure and the difference in sclerosants (polidocanol for our study and sodium tetradecyl sulphate in the study by Pandya et al[9])

Table 3- Comparison of our study and Pandya et al

	Band Ligation					
Parameters	Our study (n=11)			Pandya et al (n= 55)		
	Day 15	Day 30	Day 60	Day 15	Day 30	Day 60
Bleeding	0	0	2(18.1%)	5(9.0%)	7(12.7%)	6(10.9%)
Pain/Discomfort	4(36.3%)	0	0	6(10.9%)	5(9.0%)	4(7.2%)

	Sclerotherapy					
Parameters	Our study (n=11)			Pandya et al (n=45)		
	Day 15	Day 30	Day 60	Day 15	Day 30	Day 60
Bleeding	1(9.0%)	0	0	19(42.2%)	15(33.3%)	13(28.8%)
Pain/Discomfo	2(18.1%)	0	0	7(15.5%)	6(13.3%)	5(11.1%)

Outcome at the end of 2 months: No complications were seen in the sclerotherapy group at the end of two months while two patients had recurrence of bleeding per rectum in the band ligation group at the end of two months and repeat procedure had to be done. This finding was statistically non significant (p=0.13) Selvaraj and Balakrishnan et al10 reported slower symptomatic relief with sclerotherapy as compared to band ligation.

CONCLUSION

Based on our study, it can be concluded that in symptomatic early stage haemorrhoids, band ligation provides quick relief of symptoms but has a higher rate of complications and recurrence, on the other hand sclerotherapy has a delayed response with lesser complications and recurrence, however these findings were not statistically significant. Both the procedures are highly effective and can be easily done on an outpatient basis, with fast recovery after the procedure. The choice of procedure should be based on the surgeon's preference. Early diagnosis and local treatment can prevent further complications and reduce the need for hemorrhoidectomy or other surgical interventions.

LIMITATIONS OF THE STUDY

The sample size of our study was very low due to the COVID pandemic during our study period and large community based studies in future can give better results on preference of treatment.

Funding: None
Conflict of interest: None declared
Ethical approval: Approved

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