



General Surgery

A COMPARATIVE STUDY OF BARRON'S BANDING VERSUS SCLEROTHERAPY IN THE MANAGEMENT OF HAEMORRHOIDS

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ABSTRACT Haemorrhoid poses a surgical challenge in the anorectal region causing considerable discomfort and psychological distress to the patient. With the advent of non-surgical interventions, such as infrared coagulation and bipolar diathermy, the frequency of haemorrhoidectomies has declined. This study aims to compare the efficacy of sclerotherapy and rubber band ligation in managing haemorrhoids, focusing on post-operative complications and recurrence. Over one and half years, 100 haemorrhoid patients aged 19 to 66 years were enrolled in this study from a peripheral medical college in West Bengal, India. Patients underwent either Barron's banding or sclerotherapy with 5% phenol in olive oil. Post-operative outcomes were addressed at intervals, including pain, bleeding and infection at one week, four weeks and six months. Results revealed a significant reduction in post-operative pain in patients treated with Barron's band ligation compared to sclerotherapy ($p < 0.003$ at one week and $p < 0.001$ at one month). Additionally, fewer cases of wound infection were observed in the banding group. Recurrence rates were significantly higher in the sclerotherapy group at six months ($p = 0.03$).

KEYWORDS : Haemorrhoid, Band ligation, Sclerotherapy

INTRODUCTION:

Haemorrhoids are an extremely common surgical condition of anorectal area resulting in significant subjective discomfort and psychological stress. Prevalence is about 1 in 4 in different Indian and western literatures.^{5,9,10,12} The common complaints include bleeding, protrusion, discharge, discomfort. Though the pathogenesis is not well understood, various theories like organic obstruction to the venous return from the superior haemorrhoidal veins, heredity factors, anatomical and physiological factors, bowel and dietary factors^{3,4,7}, vascular cushions⁸, internal anal sphincter dysfunction and anal corpus cavernosum have been proposed. With the available non-surgical approaches like infrared coagulation, bipolar diathermy, direct current therapy, cryotherapy, etc. the number of haemorrhoidectomies performed has decreased significantly over time.¹ Very few studies are available to compare these wide varieties of treatment modalities.

AIM:

To compare the efficacy of sclerotherapy and rubber band ligation in the treatment of haemorrhoids for post-operative complications and recurrence.

MATERIALS AND METHODS:

Our study has been conducted for one and half years over 100 haemorrhoids patients of age 19 to 66 years. Patients are selected by stratified random sampling from Surgical IPD of a peripheral medical college of West Bengal. Pregnant women, patients with complications like prolapsed piles, thrombosed piles, fistula-in-ano & fissure-in-ano, associated medical conditions like diabetes mellitus, bleeding diathesis, inflammatory bowel disease and patients of Carcinoma rectum and anal canal are excluded from the study. Patients are distributed in 6 different age groups with classification into male and female. Presenting complaints are denoted and after a thorough clinical examination, grading of haemorrhoids is done. Among them, 50 patients are treated with Barron's banding while the rest with sclerotherapy with 5% phenol in olive oil. All of them are assessed for post-operative pain, bleeding, infection at the end of 1st week, then at 4 weeks for persistence of pain and bleeding; lastly at 6 months for recurrence.

RESULTS:

Table 1: Distribution Of Cases With Age Groups And Sex

AGE		SEX		FREQUENCY (n=%)
AGE GROUP (YEARS)	MEAN +/- SD	MALE	FEMALE	
19-24	21.5 +/- 1.7	1	1	2
25-30	27.5 +/- 1.7	4	2	6
31-36	33.5 +/- 1.7	10	8	18
37-42	39.5 +/- 1.7	33	6	39

43-48	45.5 +/- 1.7	7	5	12
49-54	51.5 +/- 1.7	6	4	10
55-60	57.5 +/- 1.7	5	3	8
61-66	63.5 +/- 1.7	3	2	5
TOTAL	42.5 +/- 1.7	69	31	100

In our study, the age group distribution of study population shows the range of 19 to 66 years with mean age is 42.5 +/- 1.7 years. Maximum cases (39%) presented in 37-42 years of age, followed by 31-36 years group (18%) and 43-48 years group (12%) and cases in both extremes of age groups; i.e., 19-24 years (2%) & 61-66 years (5%) is very less. We have 69 male and 31 female patients in our study.

Table 2: Distribution Of Cases As Per Presenting Complaints And Grades Of Hemorrhoids

PRESENTING COMPLAINTS	GRADES OF HEMORRHOIDS			TOTAL (n = %)
	ONE FREQUENCY n (%)	TWO	THREE	
BLEEDING ONLY	30 (91)	33 (54)	0	63
BLEEDING & PAIN	2 (6)	26 (43)	0	28
BLEEDING, PAIN & OTHERS (ITCHING, DISCHARGE & DISCOMFORT)	1 (3)	2 (3)	6 (100)	9
TOTAL	33	61	6	100

61% patients have grade 2 haemorrhoids, while 33% have grade 1 and only 6% have grade 3 haemorrhoids. 63% patients presented with only bleeding manifestations, while 28% have both bleeding and pain and only 9% have other associated complaints along with bleeding and pain. All grade 3 haemorrhoids presented with multiple complaints, where 91% grade 1 haemorrhoids presented with bleeding only. In grade 2 haemorrhoids cases, 54% presented with bleeding only whereas 43% presented with both bleeding and pain.

Table 3: Distribution Of Post-operative Outcomes During Follow-up

FOLLOW-UP PERIOD	OUTCOME	NAME OF THE PROCEDURE		FREQUENCY	P-VALUE
		BAND LIGATION	SCLEROTHERAPY		
1 WEEK	PAIN	YES	1	7	0.003
		NO	49	43	

	BLEEDING	TOTAL	50	50	100	0.189
		YES	4	1	5	
		NO	46	49	95	
	WOUND INFECTION	TOTAL	50	50	100	0.003
		YES	0	3	3	
		NO	50	47	97	
1 MONTH	PAIN	YES	2	8	10	0.001
		NO	48	42	90	
		TOTAL	50	50	100	
	BLEEDING	YES	3	3	6	1
		NO	47	47	94	
		TOTAL	50	50	100	
6 MONTHS	RECURRENTS	YES	2	6	8	0.03
		NO	48	44	92	
		TOTAL	50	50	100	

During follow-up visits, pain is significantly (p 0.003 at 1st week & 0.001 at 1st month) lesser in patients treated with Barron's banding; while reduction in bleeding found to be insignificant (p 0.1 at 1st week & 1 at 1st month). No wound infection found in banding group while 3 patients developed post-op wound infection in sclerotherapy group. Only 2 patients in banding group developed recurrence at 6 months, while the frequencies of recurrence in sclerotherapy group is 6 which is significantly higher (p 0.03).

DISCUSSION:

In our study, we found that maximum cases (39%) presented in 37-42 years of age, followed by 31-36 years group (18%) and 43-48 years group (12%) and cases in both extremes of age groups; i.e., 19-24 years (2%) & 61-66 years (5%) is very less.

Hyams and Philpot found that prevalence rate increased with age but tapered off over 70⁵.

Haas et al. found that prevalence of haemorrhoids was higher only after 30 years of age but no significant difference was found between age groups¹².

We have 69 male and 31 female patients in our study. Keighley et al. found similar sex distribution with 154 men and 62 women in his study.²

In our study, 63% patients presented with bleeding, 28% with bleeding and pain while 9% have bleeding, pain and other complaints.

Prabhakar et al. reported that the prevalence of presenting complaints as bleeding 70%, itching 25%, mucus discharge 23% and pain 23%¹³.

Greca et al. reported symptoms of bleeding 87.80%, discharge 48.78% and discomfort 57.3% in 82 patients¹¹.

In our study, post-operative pain is significantly (p 0.003 at 1st week & 0.001 at 1st month) lesser in patients treated with Barron's banding. No wound infection found in banding group while 3 patients developed post-op wound infection in sclerotherapy group. Only 2 patients in banding group developed recurrence at 6 months, while the frequencies of recurrence in sclerotherapy group is 6 which is significantly higher.

Iyer VS. and Shrier I. et. al. in their study found that success rates were similar for all degrees of haemorrhoids. They concluded that rubber band ligatures were safe and effective therapy for symptomatic internal haemorrhoids. The likelihood of success was lower if more than four bands are needed to eliminate symptoms.¹⁴

Marwat AA. and Amanullah A. et. al. found that rubber band ligation was safe and effective treatment for all internal haemorrhoids. It can be easily performed as a day care procedure with lesser complications and better patient acceptability¹⁵.

These results were comparable with study of Gartell et. al. which reported higher success rate for rubber band ligation compared to sclerotherapy.⁶

In a similar study by Kumar M., Roy V Prasad et. al. to evaluate the outcome of rubber band ligation they have found 89% were

symptomatically relieved and 11% of patients had residual symptoms.¹⁶

Gallo G, Picciariello A, Armellini C performed to meta-analysis of 14 randomized controlled trials to compare sclerotherapy with other conservative surgical approaches and the study revealed that sclerotherapy was not inferior to control interventions in terms of success rate and recurrence rate, while resulting in fewer complications.¹⁷

CONCLUSION:

Our study demonstrates that patients treated with banding have less post-operative complications than sclerotherapy and the recurrence is also higher in sclerotherapy. Hence, Barron's banding is more effective than sclerotherapy in the management of haemorrhoids.

Limitations:

The relatively smaller sample size might not reflect the manifestations of a comparatively larger patient population. As we have not followed up the patients over prolonged period of time, the actual prevalence of recurrence is yet to comment on.

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