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COMPARATIVE STUDY BETWEEN SCEROTHERAPY AND RUBBER BAND LIGATION IN HAEMORRHOIDS

General Surgery

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ABSTRACT

'Haemorrhoids' or 'piles' are one of the commonest aliment that afflict mankind .Piles are treated by different methods like applying soothing agents to anus, suppositories, injection of sclerosing agent, rubber band ligation, cryosurgery, infrared coagulation, manual dilatation & haemorrhoidectomy. In the present study 100 cases of internal piles treated by injection therapy, rubber band ligation (50 cases of each) were studied with following aims and objectives of To know the results of each method of treatment.To correlate the treatment modalities with the degree of hemorrhoids.To study different adverse affects of each treatment modality. On injection sclerotherapy out of 50 patients 82% showed improvement and rubber band ligation out of 50 patients 86% showed improvement. Results of two modalities were compared with other international studies suggested that recurrence increases with time after injection sclerotherapy, wherein rubber band ligation high recurrence rate after one year of procedure. Injection sclerotherapy is useful in I degree and II degree haemorrhoids where rubber band ligation is useful in II degree.

KEYWORDS

haemorrhoids, injection sclerotherapy, rubber band ligation, degree of haemorrhoids.

INTRODUCTION

- By common consent the terms, “haemorrhoids” and “piles” are used quite interchangeably
- 'Haemorrhoids' or 'piles' are one of the commonest aliment that afflict mankind from dawn of history the incidence in general population is not exactly known because many patients with few symptoms do not come to doctor & many patients with piles have no symptoms, Roughly incidence of piles in general population is about 50% at age of 50 Yrs & incidence increases with age.
- Piles are treated by different methods like applying soothing agents to anus, suppositories, injection of sclerosing agent, rubber band ligation, cryosurgery, infrared coagulation, manual dilatation & haemorrhoidectomy.
- They have been treated by various methods since many years, and no method is satisfactory seems to be applicable to all cases. Adoption of various methods for the treatment of single disease reveals that no method is perfect in itself.
- So, in present study, aims to know the results of each method of studied therapy and to correlate the treatment modalities with the degree of haemorrhoids.
- Here Studied therapies are injection sclerotherapy, Band ligation.

MATERIAL AND METHOD

The material consists of study of 100 patients with internal haemorrhoids, treated in our hospital Vadilal Sarabhai General Hospital, Ahmedabad during the period of JUNE 2015 to NOVEMBER 2017.

These patients will be treated by two methods via injection sclerotherapy, Rubber band ligation (50 cases by each method).

There was no case selection for each treatment modalities and it was on surgeon's choice.

All patients treated by whichever method are outdoor patients only few of them are admitted for some other ailments and treated simultaneously.

The interval between the treatment and review is 2 months. Each and every case will be studied in detail and will be followed up.

METHOD: First Explain whole procedure to patient and patient's relative, if patient is minor.

1. Injection sclerotherapy :-

In this procedure, lie-down the patient in left lateral position then do proctoscopy, identify the haemorrhoids & look for the degree & locations of haemorrhoids. Then after fill sclerogent in syringe (1:1 dilution) & inject sclerogent in the haemorrhoids about 2-3 ml injected, all haemorrhoids can be injected on same sitting. This procedure is painless, only slight insignificant haemorrhage present.

2. Rubber band ligation:

In this procedure, keep patient in same position as previously & look for degree & locations of haemorrhoids. Then after, hold the haemorrhoid with forcep & rubber band fixed over haemorrhoid by Rubber banding gun. All haemorrhoids are banded in same sitting. This procedure is also painless.

I will compare two methods & decide which method is better than other.

- **Statistical consideration :**

The data obtained in the study for age, sex, presenting symptoms, duration of symptoms, degree of haemorrhoids, efficacy of treatment modality and post therapy complications were presented in the specially designed 'data sheet.' Using statistic calculation, data were calculated for all quantitative variables. Inter group comparison was done using Z test for proportion. Differences were considered significant if Z test value >1.96.

- **Case Selection**
- **Inclusion Criteria**

1. Patient who has only primary internal hemorrhoid.
2. Patient age group between 12-60 years.
3. Patient of either sex.

- **Exclusion criteria :**

1. Patient who are vulnerable like pregnant women, terminally ill, seriously ill etc.
2. Patient who has secondary internal hemorrhoid.

RESULTS AND ANALYSIS

SELECTION OF PATIENTS:

All the patients are asked about detailed history and thorough systemic examination done to rule out associated systemic pathology and to confirm the diagnosis of haemorrhoids.

In all the patients basic investigations consist of haemoglobin, total count, urine analysis, stool examination, ultrasonography of abdomen done. Specific investigations are done as per the need of the patient.

Informed and written consent of the patient was taken. Pre operative preparations of the patient include:

- Shaving of the local part
- Soap water enema just 1hour prior to procedure.
- Single shot of injectable antibiotics consist of injection ciprofloxacin and metronidazole before the procedure.

Group-A: These patients are subjected to injection sclerotherapy with sclerosant agent polidocanol into the base of pile. After completion of the procedure, confirmation is done by visualizing the blanching over the local area at the injection site. At the most generally two haemorrhoids can be subjected to sclerotherapy simultaneously. Patients are asked for any complaint of pain or profuse bleeding after the procedure and kept under observation for 1 hour.

Any further need of injection sclerotherapy is decided according to the symptomatic improvement and visualizing sclerosis and fibrosis in the injected pile.

Group-B: These patients are subjected to rubber band ligation with Barron banding gun after similar pre-procedure preparation as in sclerotherapy. Similar post procedure advice is given to patient and similar follow-up is done.

Patients were called for follow up visits at weekly interval initially for one month and then fortnightly interval for next one month. During follow up visits, patients were interrogated for any complaints. Digital and proctoscopic examinations were carried out.
The results of this study were analyzed in tabulated form and conclusion derived.

RESULTS AND ANALYSIS

A total of 100 patients, who presented at Vadilal Sarabhai General Hospital Ahmedabad with diagnosis of haemorrhoids (uncomplicated) treated with two different modalities. A close follow-up of patients were kept. A record of all the findings was made in the proforma of the case study.

1) Age Distribution

Table No. 1

Age in years	No. of patients	Percentage
10- 19	4	4%
20-29	15	15%
30-39	32	32%
40-49	29	29%
50-59	10	10%
60-69	7	7%
70-79	2	2%
80-89	1	1%
TOTAL	**100**	**100%**

The age of the patients ranged from 10-89 years. Majority of the patients were in the age group of 31-50 years, which is the period of maximum physical activity.

2) Sex Distribution

Table No. 2

Gender	No. of patients	Percentage
Male	68	68%
Female	32	32%

There were 68% male & 32% female in the study. The M:F ratio was 2.1:1.

3) Presenting Complaints

Table No. 3

Symptoms	No. of patients
Bleeding per rectum	100
Prolapse	46
Pain	73
Discharge	02
Itching	00
Constipation	100
Abdominal pain	00

Mostly patients are presented with complains of bleeding per rectum (100%) and constipation (100%). Sometimes presented with complain of something coming out per anus (46%) or pain while defecation (73%).

4) Duration of symptoms

Table No. 4

Duration of symptoms (months)	Number of patients
0-6	51
7-12	30
13-18	12
19-24	06
25-30	01

Most of the patients presented within eighteen months of initial symptoms.

5) Degree of haemorroids:

Table No.5

DEGREE	INJECTION SCLEROTHERAPY	RUBBER BAND LIGATION	TOTAL	PERCENTAGE
I	39	7	46	46%
II	11	39	50	50%
III	0	4	4	04%
	50	50	100	100%

Patients with second degree are more (50%) than first degree (46%) and third degree (04%).

6) Postoperative complications

Table No. 6

Complication	Injection sclerotherapy	Rubber band ligation
Local pain	17 (34%)	46 (92%)
Bleeding per rectum	40 (80%)	34 (68%)
Discharge per rectum	00 (0%)	00 (0%)
Urinary retention	00 (0%)	00 (0%)
Incontinence of stool or flatus	00 (0%)	00 (0%)
Pain at first bowel action	00 (0%)	00 (0%)

In injection sclerotherapy, there was bleeding per rectum (80%) and local pain (34%); in rubber band ligation, local pain (92%) and bleeding per rectum (68%) and in infrared coagulation local pain (86%) and bleeding per rectum (32%). In any treatment modality, there was no discharge per rectum, urinary retention, incontinence of stool or flatus or pain at first bowel action.

7) Results

Table No.7

Therapy	Group A	Group B	Intergroup comparison
			Gr A-Gr B
Improved	41(82%)	43(86%)	No
Not improved	9(18%)	7(14%)	No

All 100 patients were kept under close follow up for 2 months and recurrence of symptoms noted in follow-up. On observation, in study of injection sclerotherapy 41 patients out of 50 are improved (82%), in rubber band ligation 43 out of 50 are improved (86%). 18%, 14% recurrence rate is noted in injection sclerotherapy and rubber band ligation respectively.

8) Number of sessions required for completion of procedure.

Table No. 8

Treatment modality	No. of patients who required >1 session
Injection sclerotherapy	8
Rubber band ligation	10

Out of 50 patients of injection sclerotherapy, 8 patients needed 2 sessions whereas in rubber band ligation, 10 patients needed 2 sessions.

9) Correlate treatment modality with degree:
Table No. 9

DEGREE	INJECTION SCLEROTHERAPY (Group A)		RUBBER BAND LIGATION (Group B)	
	IMPROVED	NOT IMPROVED	IMPROVED	NOT IMPROVED
I	36(92.30%)	3(7.70%)	5(71.43%)	2(28.57%)
II	5(45.45%)	6(54.54%)	35(89.74%)	4(10.25%)
III	0(0%)	0(0%)	3(75%)	1(25%)

In present study, on the basis of percentage, patients of degree I haemorrhoids were improved by injection sclerotherapy 92.30%, by rubber band ligation 71.43%. Patients of degree II haemorrhoids were improved by injection sclerotherapy 45.45%, by rubber band ligation 89.74%.Patients of degree III haemorrhoids were improved by rubber band ligation by 75%.

DISCUSSION

Haemorrhoids are one of the most common disease of human beings since the ancient times. Numerous investigators have attempted to improve the technique for the treatment of haemorrhoids but it is still far from the ideal. The need to treat haemorrhoids is based primarily on the severity of symptoms, but the type of treatment is based on the traditional classification of haemorrhoids. The goal of this study is to know the results of injection sclerotherapy, rubber band ligation and to correlate treatment modalities with degree of haemorrhoids.

1) Age Distribution

Study	Mean age (in years)
Present study	40.5
A. Senapati	47.8
A. Walker	45

In our study, majority of the patients were in the age group of 31-50 years (54%) with average age of around 40 years, which is comparable to other standard studies, as shown in the table.

2) Sex Distribution

Study	Male	Female
Present study	68%	32%
A. Senapati	65.1%	34.9%
A. Walker	66%	34%

Our study shows male and female distribution 68% and 32% respectively, which is not comparable to other studies. In A. Senapati study, male and female distribution are 65.1% and 34.9% respectively and in A.Walker study, 66% and 34% respectively.

3) Results of Rubber Band Ligation

Study	Improved
Present study	86%
Murie et al.	79%
Greca et al.	64%

In our study, 50 patients were allocated for rubber band ligation. Only 10 patients needed revision of the procedure due to slippage of rubber band. Most of the patients (86%) remained symptom free after the procedure, but around 14% had recurrence of one of the symptoms in follow-up of two months.

In Murie et al and Greca et al studies, improved rate were 79% and 64% in follow up of one year, whereas in Wrobleski et al study, improved rate was 69%, which implies rubber band ligation having high recurrence after one year of the procedure.

5) Comparison of post-procedure complications in Rubber Band Ligation

Study	Local pain	Bleeding P/R	Discharge
Present study	92%	68%	0%
Jose Alfredo	27%	13%	12%
C.F.S.Marques et al.	29.6%	32.4%%	0%

In our study, the main complication of rubber band ligation was local pain in around 92% of the patients, which was higher than Jose Alfredo study group (27%) and C.F.S.Marques et al. study (29.6%).

Bleeding per rectum was present in around 68% of the patients in our study, which is higher than Jose Alfredo study (13%) and C.F.S. Marques et al. study (32.4%).

6) Results of Injection Sclerotherapy

In this study, 82% of the patients remained asymptomatic in the follow-up period. 18% of the patients had a recurrence of one of the symptoms. Most of the patients required only single session for completion of injection sclerotherapy, but 8 patients needed two sessions for following reasons: (i) In some patients injection was given only at one site and they were called for injection for another site after 15 days due to bigger size of piles. (ii) Few patients persisted with symptoms after initial injection; they were reinjected for that and improved after repeated injections.

Study	Improved
Present study	82%
Cheng et al.	77%
Greca et al.	70%

Improved rates were 77% and 70% after period of 1 year of follow up in the studies of Cheng et al. and greca et al. respectively. But in our study, improved rate was 82% after 2 months of follow up, which implies that recurrence increases with the time after procedure of injection sclerotherapy.

7) Comparison of post-procedure complications in Injection Sclerotherapy

Study	Local pain	Bleeding P/R
Present study	34%	80%
Nasir Khan et al.	34.3%	70.5%

In our study, local pain 34% and bleeding P/R 80% whereas Nasin Khan et al. study local pain 34.3% and bleeding P/R 70.5% suggest that occurrence rate of various post procedure complications in injection sclerotherapy of our study are nearly same as that in Nasir Khan et al. study.

10) Results and Correlate treatment modality with degree:

(i) Injection sclerotherapy:

In this study, 36 patients of degree I haemorrhoids out of39 were improved (92.30%); 11 patients of degree II haemorrhoids were injected, only 5 patients were improved (45.45%) suggested that injection sclerotherapy is best in degree I and early II haemorrhoids.

(ii) Rubber band ligation:

In this study, 5 patients of degree I haemorrhoids out of 7 were improved (71.43%); 35 patients of degree II out of 39 were improved (89.74%); 3 patients of degree III out of 4 were improved (75%) suggested that rubber band ligation is best degree II haemorrhoids.

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