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Research Article

A COMPARATIVE STUDY OF SCLEROTHERAPY AND HEMORRHOIDECTOMY IN SECOND-DEGREE HEMORRHOIDS

NAVRATAN GAHLTOT, ASHOK KUMAR, DIWAN JAKHAR, KEDAR NATH, MONIKA PAREEK*

Department of Surgery, Sardar Patel Medical College, Bikaner, Rajasthan, India.
***Corresponding author: Dr. Monika Pareek; Email: monikapareek16061996@gmail.com**

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ABSTRACT

Objective: The objective is to compare the post-operative complications and outcome of sclerotherapy and hemorrhoidectomy in second-degree hemorrhoids.

Methods: A hospital-based prospective comparative study on 100 cases diagnosed to have second-degree hemorrhoids attending emergency or outdoor was taken between December 2021 and November 2022 at the department of Surgery, S.P. Medical College and P.B.M Hospital, Bikaner. Cases were divided into 2 groups SCL group (sclerotherapy group) and H group (hemorrhoidectomy group).

Results: The mean age in H group was 38.56±7.8 years whereas 39.08±8.2 years in SCL group. ($p>0.05$) and both groups were sociodemographically comparable. The mean duration of hospital stay in H group was 1.5±0.4 days whereas 0.9±0.3 day in SCL group ($p<0.05$). In H group, maximum 96.00% had complaints of pain and 30% had bleeding whereas in SCL maximum of 66.00% had complaints of bleeding and 38% had constipation. In H group, maximum 74% were cured whereas 96% in the group SCL ($p=0.005$*).

Conclusion: The findings of the study conclude that of the two surgical procedures employed in the study to treat hemorrhoids sclerotherapy was found to had less complications, early ambulation, short post-operative hospital stay, and cost-effective.

Keywords: Haemorrhoids, Sclerotherapy, Hemorrhoidectomy.

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INTRODUCTION

Hemorrhoidal disease (HD) is defined as the symptomatic enlargement and/or distal displacement of anal cushions [1]. Hemorrhoids are therefore the pathological term to describe the abnormal downward displacement of the anal cushions causing venous dilatation. There are typically three major anal cushions, located in the right anterior, right posterior, and left lateral aspect of the anal canal, and various numbers of minor cushions lying between them [2].

Globally, the incidence ranges from 50 to 80%, and in India, it affects around 75% of the population. Hemorrhoids generally have the peak prevalence at the age of 45–65 years and affects both the genders. Hemorrhoids are one of the most common proctological diseases [3].

The main complaints are bleeding during or after defecation, anal pain, itching, prolapse, and perianal soiling [4]. Although hemorrhoids are recognized as a very common cause of rectal bleeding and anal discomfort, the true epidemiology of this disease is unknown because patients have a tendency to use self-medication rather than to seek proper medical attention. The definite diagnosis of HD is based on precise patient history and careful clinical examination. Assessment should include a digital rectal examination and anoscopy in the left lateral position. Treatment options available are dietary and lifestyle modification, medical treatment, sclerotherapy radiofrequency ablation, rubber band ligation, and operative intervention (open/close or stapler hemorrhoidectomy) [5].

Sclerotherapy is currently recommended as a treatment option for first- and second-degree hemorrhoids. The rationale of injecting chemical agents is to create a fixation of mucosa to the underlying muscle by fibrosis. The solutions used are 5% phenol in oil, 3% polidocanol, vegetable oil, quinine, and hypertonic salt solution [6].

Excisional hemorrhoidectomy can be performed safely under perianal anesthetic infiltration as an ambulatory surgery. In clinical practice, third-degree or fourth-degree internal hemorrhoids are the main indication for hemorrhoidectomy. A major drawback of hemorrhoidectomy is postoperative pain [7].

Aim

This study aims to compare the post-operative complications and outcome of sclerotherapy and hemorrhoidectomy in second-degree hemorrhoids.

METHODS

A hospital-based prospective comparative study on 100 cases diagnosed to have second-degree hemorrhoids attending emergency or outdoor was taken between December 2021 and November 2022 at department of Surgery, S.P. Medical College and P.B.M Hospital, Bikaner. Cases were divided into 2 groups SCL group (sclerotherapy group) and H group (hemorrhoidectomy group). All patients of both genders with second-degree internal hemorrhoids with ages above 18 years were included in this study. External, thrombosed or recurrent hemorrhoids, Grade 1, 3, and 4 internal hemorrhoids, and patients of anticoagulants and antiplatelet medications were excluded from the study.

Patients who attend the outpatient department or surgical emergency with complaints of bleeding per rectum or mass per rectum were subjected to detailed history taking which included symptoms and duration of disease. Then, they were subjected to per rectal digital examination. Anoscopy was done to find out the internal hemorrhoids and its degree and position. Systemic examination and basic investigations were done. Patients of second-degree hemorrhoids were included in study according to eligibility as per inclusion and exclusion criteria.

Patients were randomly distributed into two groups and one group was subjected to hemorrhoidectomy and another to sclerotherapy. Post-operative follow-up was done for all patients up to 6 months. The data was collected from under study population through a pretested and semi-structured questionnaire, which was designed in such a manner that more information regarding sociodemography, past medical and surgical history and morbidity, clinical examination (digial rectal examination and anoscopy), and laboratory reports. Data was also collected about treatment (sclerotherapy and hemorrhoidectomy) and operative findings. Course in the hospital was assessed by post-operative pain, need of blood transfusions, morbidity, and mortality. Data were also collected during follow-up 6 months regarding any recurrent complaints. Reasons for the study were explained to the patients; before interview a written consent was taken.

Statistical analysis

The recorded data were compiled and entered in a spreadsheet computer program (Microsoft Excel 2007) and Chi-square test for qualitative data and Student's *t* test was applied for quantitative data. For all tests, confidence level and level of significance were set at 95% and 5%, respectively.

RESULTS

In H group, maximum of 44.00% were observed in 46–60 years whereas 42% in the SCL group. The mean age in H group was 38.56±7.8 years whereas 39.08±8.2 years in the SCL group (p>0.05). In H group, maximum of 76.00% were male whereas 80% in SCL group. 80.00% were urban in both groups (Table 1).

In H group, 96.00% were presented with bleeding, 84% constipation, 80% had prolapse, and 64% had anal pain whereas in SCL group, 96.00% were presented with bleeding, 84% had constipation, 80% had prolapse and 68% had anal pain (p>0.05). The mean duration in H group was 1.5±1.1 years whereas 1.4±1.2 years in SCL group (p>0.05). In H group, the mean operative time was 35.2±4.2 min (it includes the procedure of anesthesia and surgery) whereas in SCL group, the procedure time is 5.76±4.1 min (p>0.05) (Table 2)

In H group, maximum of 84.00% had 1–2 days of hospital stay whereas minimum 4% presented had 0–1 days. In SCL group, all patients were treated on an OPD basis (daycare). The mean duration in H group was 1.5±0.4 days whereas 0.9±0.3 days in the SCL group (p<0.05) (Table 3).

In H group, maximum of 96.00% were discharged from the hospital whereas minimum 4% were DOR. In SCL group, all patients were treated and discharged as daycare (p=0.043*) (Fig. 1).

In H group, maximum 96.00% had complaints of pain, followed by 66% had constipation whereas minimum 22% had itching and 30% had bleeding. In SCL maximum 66.00% had complaints of bleeding, followed by 56% had pain whereas minimum 26% had itching and 38% had constipation. The difference was statistically significant (p=0.002*) (Table 4).

In H group, maximum 74.00% were cured whereas minimum of 13% had recurrence. In SCL, maximum 96.00% were cured whereas minimum 4% had recurrence. The difference was statistically insignificant (p=0.005*). In H group, maximum 76.00% had need to follow-up up to 6 months whereas minimum 10% were follow-up for 10–12 months. In SCL, maximum 66.00% had followed up to 6 months whereas a minimum 4% followed up to 10–12 months. The difference was statistically insignificant (p=0.103) (Table 5).

DISCUSSION

In our study, In H group, maximum 44.00% were observed in 46–60 years whereas in SCL group maximum 42.00% were in 46–60 years. The mean age in H group was 38.56±7.8 years whereas 39.08±8.2 years in SCL group (p>0.05). Similarly, Ammanagi and Mathew (2019) [8] found that the occurrence of hemorrhoids was seen between the age group of 36 to 45 years. In addition, Rathore (2019) [9] found that most of the patients were in the age range of 51–60 years.

Table 1: Sociodemography of study subjects

Age (years)	H Group (NH=50)		SCL Group (Ns=50)	
	No.	Percent	No.	Percent
18–30 years	1	2.00	1	2.00
31–45 years	14	28.00	16	32.00
46–60 years	22	44.00	21	42.00
>60 years	13	26.00	12	24.00
Mean±SD	38.56±7.8		39.08±8.2	
Sex				
Male	38	76.00	40	80.00
Female	12	24.00	10	20.00
Residence				
Rural	40	80.00	40	80.00
Urban	10	20.00	10	20.00

Table 2: Clinical features of study subjects

Clinical feature	H Group (N_H=50)		SCL Group (N_s=50)	
	No.	Percent	No.	Percent
Bleeding	48	96.00	48	96.00
Anal Pain	32	64.00	34	68.00
Prolapse	40	80.00	40	80.00
Constipation	42	84.00	42	84.00
Duration of symptoms	1.5±1.1		1.4±1.2	
Duration of procedure	35.2±4.2		5.76±4.1	

Table 3: Duration of hospital stay

DOHS	H Group (N_H=50)		SCL Group (N_C=50)		p-value
	No.	Percent	No.	Percent	
OPD basis	0	0.00	50	100.00	0.0001*
0–1 days	2	4.00	0	0.00	
1–2 days	42	84.00	0	0.00	
>2 days	6	12.00	0	0.00	
Mean±SD	1.5±0.4		0.9±0.3		

Table 4: Post-operative complications among study subjects

Post-operative complications	H Group (N_H=50)		SCL Group (N_s=50)		p-value
	No.	Percent	No.	Percent	
Bleeding	15	30.00	33	66.00	0.002*
Pain	48	96.00	28	56.00	
Itching	11	22.00	13	26.00	
Constipation	33	66.00	19	38.00	
Others	12	24.00	5	10.00	

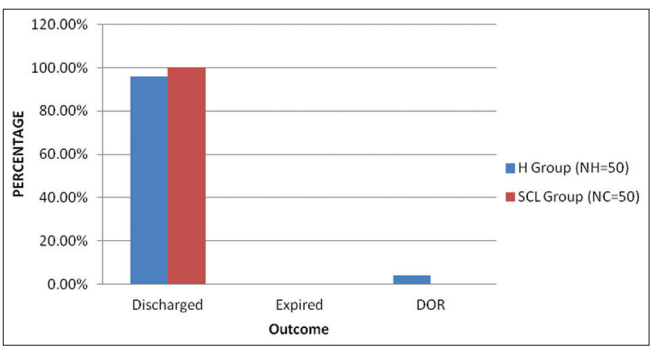

Fig. 1: Treatment outcome among study subjects

Table 5: Final outcome as observed among study subjects

Outcome	H Group (N_H=50)		SCL Group (N_s=50)		p-value
	No.	Percent	No.	Percent	
Cured	37	74.00%	48	96.00%	0.005*
Recurrence	13	26.00%	2	4.00%	

In H group, maximum 76.00% were male whereas 80% in SCL group. Similarly, Ammanagi and Mathew (2019) [8] in their study found that out of 90 patients 52 were male and 38 were female. Our study was consistent with Badal and Sharma (2019) [10] found that out of 87 patients, males were 53 and females were 34. Furthermore, male preponderance was found in a study done by Rajesh Kumar Rathore *et al*. (2019) [9].

In H and SCL group, maximum 44.00% and 46% were presented after 1–3 years of symptom appearance. The mean duration in H group was 1.5 ± 1.1 years whereas 1.4 ± 1.2 years in SCL group (p>0.05). In H group, 96.00% were presented with bleeding, 84% constipation, 80% had a prolapse and 64% had anal pain whereas In SCL group, 96.00% were presented with bleeding, 84% had constipation, 80% had prolapse and 68% had anal pain (p>0.05). Similarly, Ammanagi and Mathew (2019) [8] found that the most common presenting complaint was bleeding per rectum and mass per rectum in 33.33% of patients. Furthermore, Rajesh Kumar Badal *et al*. (2019) [10]. Common symptoms were bleeding through rectum in 72, mass through rectum in 45, soiling of clothes in 65, pain in defecation in 81 and pruritus in 37.

In H group, all procedures were done within >30min whereas In SCL group, in 1–10 min (p>0.05). In H group, maximum 84.00% had 1–2 days of hospital stay whereas in SCL group all patients were treated on OPD basis (day care). The mean duration in H group was 1.5± 0.4 days whereas 0.9±0.3 days in SCL group (p<0.05). Similarly, Amit ShivshankarAmmanagi *et al*. (2019) [8] found that postoperative hospital stay was 1 day in the groups treated with sclerotherapy and in open hemorrhoidectomy, 28 patients stayed for 3 days and 2 patients for 5 days. In our study, in H group, maximum 96.00% were discharged from the hospital whereas minimum 4% were DOR. In SCL group all patients were treated and discharge to daycare. (p=0.043*)

In H group, maximum 96.00% had complaint of pain, followed by 66% had constipation in SCL maximum 66.00% had complaint of bleeding, followed by 56% had pain (p=0.002*). In H group maximum 76.00% had need to follow-up up to 6 months whereas in SCL maximum 66.00% had followed up to 6 month. (p=0.103). Many non-operative procedures are effective in controlling symptoms from the patients' perspective; however, they all share the common problem of recurrence. sclerotherapy has the lowest recurrence rate compared to haemaroidectomy [11]. According to MacRaeand Jehan S*et al* [12,13] at 12 month of follow-up, 92.0% of patients remained symptom free following injection sclerotherapy.

In H group, maximum 74.00% were cured whereas minimum 13% had recurrence. In SCL maximum 96.00% were cured whereas minimum 4% had recurrence. The difference was statistically insignificant (p=0.005*). Similarly, Rathore (2019) [9] found that first and second-degree hemorrhoids patients 96% displayed satisfactory relief. Also Ammanagi *et al*. (2019) [8]. About 70% of patients belonging to rubber band ligation and sclerotherapy group gave excellent responses to the same.

CONCLUSION

The findings of the study conclude that of the two surgical procedures employed in the study to treat hemorrhoids sclerotherapy was found to had less complications, early ambulation, short post-operative hospital stay and cost-effective. Anal pain and recurrence were seen in a patient who underwent hemorrhoidectomy. Minimal bloody discharge from the procedure site was observed in sclerotherapy; however, cases of recurrence due to procedures from other modalities were treated with open hemorrhoidectomy.

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AUTHORS' CONTRIBUTION

All the authors have contributed equally.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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REFERENCES

1. Lohsiriwat V. Approach to hemorrhoids. Curr Gastroenterol Rep 2013;15:332. doi: 10.1007/s11894-013-0332-6, PMID 23715885
2. Thomson WH. The nature and cause of haemorrhoids. Proc R Soc Med 1975;68:574-5. doi: 10.1177/003591577506800916, PMID 1197343
3. Ali SA, Shoeb MF. Study of risk factors and clinical features of hemorrhoids. Int Surg J 2017;4:1936-9. doi: 10.18203/2349-2902.isj20172051
4. Cohen Z. Symposium on outpatient anorectal procedures. Alternatives to surgical hemorrhoidectomy. Can J Surg 1985;28:230-1. PMID 2986805
5. Johanson JF, Rimm A. Optimal nonsurgical treatment of hemorrhoids: A comparative analysis of infrared coagulation, rubber band ligation, and injection sclerotherapy. Am J Gastroenterol 1992;87:1600-6. PMID 1442682
6. Kaidar-Person O, Person B, Wexner SD. Hemorrhoidal disease: A comprehensive review. J Am Coll Surg 2007;204:102-17. doi: 10.1016/j.jamcollsurg.2006.08.022, PMID 17189119
7. Lohsiriwat D, Lohsiriwat V. Outpatient hemorrhoidectomy under perianal anesthetics infiltration. J Med Assoc Thai 2005;88:1821-4. PMID 16518980
8. Ammanagi AS, Mathew T. A comparative study of sclerotherapy and rubber band ligation versus open hemorrhoidectomy in second degree hemorrhoids. Int Surg J 2019;6:1545-8. doi: 10.18203/2349-2902.isj20191536
9. Rathore RK. Comparative study of management of second and third degree hemorrhoids with injection sclerotherapy using Polidocanol. Int J Surg Sci 2019;3:145-7. doi: 10.33545/surgery.2019.v3.i2c.30
10. Badal RK, Sharma MK. Assessment of cases of hemorrhoids in adults-a clinical study. J Adv Dent Sci Res 2019;7:39-43.
11. Tomiki Y, Ono S, Aoki J, Takahashi R, Sakamoto K. Endoscopic sclerotherapy with aluminum potassium sulfate and tannic acid for internal hemorrhoids. Endoscopy 2014;46:E114. doi: 10.1055/s-0034-1364884, PMID 24676816
12. MacRae HM, McLeod RS. Comparison of hemorrhoidal treatment modalities. A meta-analysis. Dis Colon Rectum 1995;38:687-94. doi: 10.1007/BF02048023, PMID 7607026
13. Jehan S, Ali M, Ateeq M, Bhopal FG. Sclerotherapy versus rubber band ligation; Comparative study of efficacy and compliance in the treatment of uncomplicated second degree. Prof Med J 2012;19:222-7. doi: 10.29309/tpmj/2012.19.02.2017