

Original Research Article

Efficacy of haemorrhoidectomy versus haemorrhoidectomy with internal sphincterotomy in treatment of haemorrhoids: a retrospective randomized controlled trial study

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Received: 21 December 2020

Revised: 04 February 2021

Accepted: 17 February 2021

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ABSTRACT

Background: Role of internal sphincterotomy along with hemorrhoidectomy in reducing the pain among the cases with hemorrhoids is still a debate among most of the surgeons. Hence this study was conducted to compare the efficacy of hemorrhoidectomy with or without internal sphincterotomy in reducing the post-operative pain among the patients with hemorrhoids.

Methods: A hospital based randomized controlled trial study was conducted among the patients with hemorrhoids undergoing surgical intervention for the same in department of general surgery in Sri Muthukumaran Medical College Hospital and Research Institute, Chennai, during the study period from July 2017 to December 2019. A total of sixty cases with hemorrhoids were included in the study. Patients in group A (n=30) underwent hemorrhoidectomy alone and group B (n=30) underwent hemorrhoidectomy along with internal sphincterotomy. Data entry was done using Microsoft excel and data was analyzed using Statistical Package for Social Sciences (SPSS) version 17.

Results: In the present study, mean pain scores on first three post-operative days and the duration required to resume the normal activities was found to be low in the group who underwent hemorrhoidectomy with internal sphincterotomy compared to the group who underwent hemorrhoidectomy alone. Duration of surgical procedure and the complications were found to be similar in both hemorrhoidectomy with internal sphincterotomy group and hemorrhoidectomy alone, group.

Conclusions: Hemorrhoidectomy with lateral Internal Sphincterotomy is better in terms of less pain but the complications were similar in both groups.

Keywords: Hemorrhoidectomy, Internal sphincterotomy, Pain, Hemorrhoids

INTRODUCTION

Hemorrhoids are the common pathology which refers to downward displacement of the vascular sub mucosal cushions of anal canal. Usually patients present with rectal bleeding, prolapse, pruritis ani and if not treated may develop complications.^{1,2}

Surgical treatment of hemorrhoids is hemorrhoidectomy, the most commonly practiced

method for treatment of symptomatic grade III and grade IV hemorrhoids. Also the high incidence of recurrence due to high anal pressure reduces its effectiveness.³

This procedure is associated with severe postoperative pain, bleeding, mucous discharge, urinary retention and anal stenosis.^{4,5} Though there are several causes listed that causes pain after hemorrhoidectomy such as anal packing, urinary retention and wound edema but the most important is due to the spasm of internal sphincter which

remains exposed after open hemorrhoidectomy especially in young patients with high anal tone.^{6,7}

The way to reduce the spasm and anal canal pressure is internal sphincterotomy which allows the surgeon to reduce pressure with a more graduated and reproducible fashion.^{8,9} Studies conducted by Chen et al and William et al reported that addition of internal sphincterotomy to the routine hemorrhoidectomy is unnecessary and carries the added risk of fecal incontinence.^{10,11}

But, the role of internal sphincterotomy along with hemorrhoidectomy in reducing the pain among the cases with hemorrhoids is still a debate among most of the surgeons. Hence this study was conducted to compare the efficacy of haemorrhoidectomy alone and haemorrhoidectomy along with internal sphincterectomy in reducing the post-operative pain among the patients with haemorrhoids.

Objectives

The objective of this study was to compare the efficacy of haemorrhoidectomy alone and haemorrhoidectomy along with internal sphincterectomy in reducing the post-operative pain among the patients with haemorrhoids.

METHODS

A hospital based randomized controlled trial study was conducted among the patients with haemorrhoids undergoing surgical intervention for the same in department of general surgery in Sri Muthukumaran Medical College Hospital and Research Institute, Chennai, during the study period from July 2017 to December 2019. All patients with grade IV and V haemorrhoids of both sexes were included in the study. Patients with grade I and II haemorrhoids and who underwent previous surgical interventions for haemorrhoids were excluded from the study. With mean VAS for pain as 2.7 and 3.5 and sigma of 1.1, alpha 0.05 and power of 0.80, the sample size was calculated as thirty in each group. Hence a total of sixty cases with haemorrhoids were included in the study. All the participants who underwent surgery during the study period were included in the study, till the desired sample size was reached.

The individual participants were explained about the study and they were also assured that, their identity would be kept strictly confidential and they have the option to refuse participation in the study. Written informed consent was obtained from the study participant's parents prior to the interview. Every effort was made, to be sure that all information collected from the participants, remain confidential.

All the patients were randomised to either group A or group B with thirty patients in each group, based on the computer generated random numbers. All the patients in

the group A underwent haemorrhoidectomy alone whereas all the patients in group B underwent haemorrhoidectomy along with internal sphincterectomy. After allocation of the patients in each group, the principal investigator collected the clinical history and conducted a detailed examination of the patients. The study was conducted using a proforma with the demographic and clinical details noted on it, Patients were evaluated for clinical presentation and surgical outcome in terms of pain, operating time and complications.

Primary outcome measure was postoperative pain which was measured using visual analog scale (VAS) with score ranging from 0-10. Secondary outcome measures include operative time, and postoperative complications. Data entry was done using Microsoft excel and data was analyzed using statistical package for social sciences (SPSS) version 17. All descriptive data were described as frequency, percentage, mean and standard deviation. The significant difference in the mean and categorical values between the two groups was tested using the independent sample t test and z test respectively. Statistical testing was undertaken considering p value <0.05 to be significant.

RESULTS

In the present study, from the group A, 33.3%, 30%, 20% and 16.7% of participants were belongs to age groups, 31-40 years, 41-50 years, less than or equal to 30 years and 51-60 years, respectively. Similarly, in the group B, there were 40%, 26.7%, 23.3% and 10% of participants in the age groups of 31-40 years, 41-50 years, less than or equal to 30 years and 51-60 years, respectively. There were 60% of male participants and 40% of female participants in the group A and 63.3% of male participants and 36.7% of female participants in the group B. on assessing the severity of haemorrhoids, there were 73.3% of cases with grade III and 26.7% of cases grade IV haemorrhoids, in groupA whereas there were 66.7% and 33.3% of grade III and grade IV haemorrhoids, respectively reported in the group B (Table 1).

Table 1: Characteristics of patients in both groups.

Variables	Group A (n=30)	Group B (n=30)
Age group (years)		
≤30	6 (20)	7 (23.3)
31-40	10 (33.3)	12 (40)
41-50	09 (30)	08 (26.7)
51-60	05 (16.7)	03 (10)
Sex		
Male	18 (60)	19 (63.3)
Female	12 (40)	11 (36.7)
Severity of disease		
Grade III	22 (73.3)	20 (66.7)
Grade IV	08 (26.7)	10 (33.3)

Figure 1, shows the proportion of patients with different presenting complaints (multiple responses) in group A and group B.

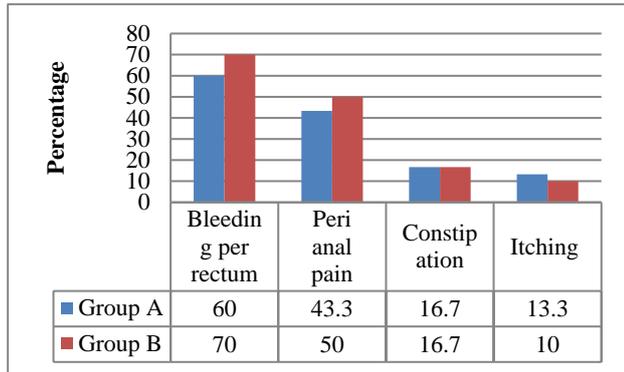


Figure 1: Proportion of cases with different presenting complaints.

On assessing the pain scores on day 1 of post-surgery, cases in the group A reported the mean (\pm SD) pain score as 6.2 ± 2.3 and cases in the group B reported 4.5 ± 1.9 . The mean difference in pain score on day 1 between group A and group B was found to be statistically significant ($p=0.0028$). The pain scores on day 2 in the group A and group B was 3.6 ± 1.4 and 2.3 ± 0.8 , respectively and the difference was statistically significant ($p<0.0001$). On day 3 the pain scores were reported as 2.5 ± 1.1 and 1.9 ± 0.7 in group A and group B, respectively ($p=0.0145$) and low pain scores were noted in group B on all the first 3 post-operative days. Mean operating time was reported as 29.8 ± 11.4 minutes and 35.4 ± 10.3 minutes in group A and group B, respectively and the difference was not found to be statistically significant ($p=0.0506$). Also duration taken to return to normal activity was found to be 18.8 ± 4.2 days and 15.3 ± 3.1 days in group A and group B, with significant early resuming of activities noted in group B ($p=0.0005$) (Table 2).

Table 2: Comparison of different operative variables between two groups.

Variables	Group A	Group B	P value
Post-operative day 1-pain score	6.2 ± 2.3	4.5 ± 1.9	0.0028*
Post-operative day 2-pain score	3.6 ± 1.4	2.3 ± 0.8	<0.0001*
Post-operative day 3-pain score	2.5 ± 1.1	1.9 ± 0.7	0.0145*
Operating time (mins)	29.8 ± 11.4	35.4 ± 10.3	0.0506
Return to normal activities (days)	18.8 ± 4.2	15.3 ± 3.1	0.0005*

*Significant

Table 3: Proportion of patients with complications in both groups.

Complications	Group A	Group B	P value
No. of cases with complications	10 (33.3)	09 (30)	0.7852
Individual complication			
Bleeding	5 (16.7)	6 (20)	0.7433
Urinary retention	2 (6.7)	3 (10)	0.6469
Fecal incontinence	4 (13.3)	1 (3.3)	0.1639
Wound infection	1 (3.3)	1 (3.3)	1.000

On assessing the incidence of complication between the two groups, group A reported to have 33.3% and group B with 30% of cases with one or more complications. But the difference in proportion of cases with complications between two groups was found to be statistically insignificant ($p=0.7852$).

Also in group A, there were 16.7%, 6.7%, 13.3% and 3.3% of cases reported with bleeding, urinary retention, fecal incontinence and wound infection, respectively whereas in group B, 20%, 10%, 3.3% and 3.3% of cases reported with bleeding, urinary retention, fecal incontinence and wound infection, respectively.

Also it was found that the difference in proportion of individual complication in group A and group B was found to be statically insignificant (Table 3).

DISCUSSION

In the present study, mean pain scores on first three post-operative days and the duration required to resume the normal activities was found to be low in the group who underwent haemorrhoidectomy with internal sphincterectomy compared to the group who underwent haemorrhoidectomy alone. Duration of surgical procedure and the complications were found to be similar in both haemorrhoidectomy with internal sphincterectomy group and haemorrhoidectomy alone, group.

Similar to the findings to this study, Sumaira et al¹² in their study, reported the mean age of the patients was 42 ± 10.2 . Male were 77 (66.4%) and 39 (33.6%) were female with male to female ration was 2:1.

Seyed et al reported that one week following surgery, there was no statistically significant differences in the frequency of postoperative complications like pain and urinary incontinence between the two groups except for fecal incontinence which was more frequent in haemorrhoidectomy with sphincterectomy group.¹³

Consistent with this study, Kamruzzaman et al found that haemorrhoidectomy with internal sphincterectomy group reported less postoperative pain as compared to haemorrhoidectomy alone group. They concluded that lateral internal sphincterotomy combined with hemorrhoidectomy is more suitable procedure than Lateral internal sphincterotomy alone.¹⁴

Diana et al reported that internal sphincterotomy reduces significantly pain only in the first postoperative period, but not in the medium-long term follow up.¹⁵

Das et al reported that post-operative pain score was found to be less among patients underwent haemorrhoidectomy with internal sphincterectomy than haemorrhoidectomy alone.¹⁶ Postoperative complications like urinary retention was seen in eight patients from haemorrhoidectomy alone group and in one patient from haemorrhoidectomy with internal sphincterectomy group.

Raza et al reported that significant number of patients who underwent haemorrhoidectomy with lateral internal sphincterotomy were completely pain free at the end of their study when compared to patients who underwent haemorrhoidectomy alone.¹⁷

Abedidost et al reported that in terms of reduction in pain with sphincterotomy, there was a significant relationship between the two groups on the first, second, and fifth postoperative days.¹⁸

In contradicting to these studies, Mathai et al reported there were no significant differences in postoperative pain scores and they concluded that addition of lateral internal sphincterotomy to routine haemorrhoidectomy is unnecessary and carries the added risk of incontinence.¹⁹

Limitations

Lack of long term follow up is a considerable limitation of this study, which could address the recurrence of sinus, pain and need for medical or surgical interventions.

CONCLUSION

The findings of this study show that haemorrhoidectomy with lateral internal sphincterotomy is better in terms of less pain and reduced fecal incontinence but bleeding rate was similar in both groups. So, lateral internal sphincterotomy, combined with haemorrhoidectomy, can be adopted as a regular surgical technique to reduce pain to achieve maximum patient satisfaction.

ACKNOWLEDGEMENTS

I would like to thank all, who has guided me by extending their knowledge and experience right from the inception to the completion of the work. Also, I would like to acknowledge the medical superintendent and all the staffs, for their support during the study period. Last but not least I am thankful to my study participants, without whom, this study would not have been possible.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Quraishy SM, Idris F, Sultan N. Outpatient treatment of hemorrhoids with electronic coagulator: initial experience with 103 patients. *Med Spectrum.* 1999;21:20-2.
2. Suchdev S, Ghayassuddin M, Younus SM, Mirani AJ, Ghias N, Qazi A, et al. Calcium Channel Blockers for pain relief after haemorrhoidectomy; a randomized controlled trial from Karachi, Pakistan. *Pak J Surg.* 2014;30(2):187-92.
3. McConnell JC, Khobchandani IT. Long-term follow-up of closed hemorrhoidectomy. *Dis Col Rect.* 1983;26:797-9.
4. Safwan AT. Routine internal sphincterotomy with the hemorrhoidectomy for third and fourth degree hemorrhoids greatly improves the outcome. *Int J Geo-Enginee.* 2003;4(1):48-51
5. Davies J, Duffy D, Boyt N, Aghahoseini A, Alexander D, Leveson S. Botulinum toxin (botox) reduces pain after hemorrhoidectomy: results of a double-blind, randomized study. *Dis Colon Rectum.* 2003;46:1097-102
6. Di Bella F, Esteinne G. Indications for internal medioposterior with anoplasty of lateral sphincterectomy during hemorrhoidectomy, our experience. *Minerva Chirurgica,* Mar 1990, 45(6):361-3
7. Rotholtz NA, Bun M, Mauri MV, Bosio R, Peczan CE, Mezzadri NA. Long term assessment of fecal incontinency after lateral internal sphincterotomy. *Tech Coloprocto.* 2005; 9:115-8.
8. Mortensen PE, Olsen J, Pedersen IK, Christiansen J. A randomized study on hemorrhoidectomy combined with anal canal dilatation. *Dis Col Rect.* 1987;19:755-7.
9. Eisenhammer S. Internal anal sphincterotomy plus free dilatation versus anal stretch with special criticism of the ananal stretch procedure for hemorrhoids: the recommended modern approach to hemorrhoid treatment. *Dis Col Rect.* 1974;17:493-522.
10. Chen WS, Leu SY, Wang FM. The roles of hemorrhoidectomy and lateral internal sphincterotomy in the treatment of hemorrhoids:

- clinical and manometric study. *Zhonghua Yi Xue Za Zhi.* 1989;43:255–60.
11. William A, Zbar A, Kmiot W. *Anorectal Investigation. A Companion to Specialist Surgical Practice Colorectal Surgery.* 2nd ed. Philadelphia: W.B. Saunders; 2001.
 12. Otho S, Dalwani AG, Memon KN, Shaikh NA, Sushel C, Syed BM. Haemorrhoidectomy with internal sphincterotomy: A useful method to relieve post operative pain. *J Liaquat Uni Med Health Sci.* 2015;14(02):73-7.
 13. Hosseini, seyed V, KH Sharifi, Azadeh A, parvaz SH B, Saeideh P, Mosalaei M. Role of internal sphincterotomy in the treatment of hemorrhoids: a randomized clinical trial. 2007:504-8.
 14. Kamruzzaman M, Rashid MH, Kabir N, Rahman MM, Khan MM. A Comparative Study Between open Hemorrhoidectomy with Lateral Internal Sphincterotomy And Hemorrhoidectomy Without Lateral Internal Sphincterotomy. *Int Organizat Scient Res.* 2018;57-60
 15. Diana G, Guercio G, Cudia B, Ricotta C. Internal sphincterotomy reduces postoperative pain after Milligan Morgan haemorrhoidectomy. *Bio Med Cent Surg.* 2009;9(1):16.
 16. Das DK, Choudhury UC, Lim ZS. Effectiveness of internal sphincterotomy in reducing post open hemorrhoidectomy pain: a randomized comparative clinical study. *Int J Collaborat Res Inter Medic Pub Heal.* 2013;5(6).
 17. Raza MW. Haemorrhoidectomy with and without lateral internal sphincterotomy. *J Rawalp Medic Col.* 2013;17(2):189-91.
 18. Abedidost S, Poya M, Shafe SM. The effect of internal sphincterotomy on post hemorrhoidectomy pain. *Arak Med Univ J.* 2011;14(56):58-63.
 19. Mathai V, Ong BC, Ho YH. Randomized controlled trial of lateral internal sphincterotomy with haemorrhoidectomy. *Brit J Surg.* 1996;83(3):380-2.

Cite this article as: Selvarajan R. Efficacy of haemorrhoidectomy versus haemorrhoidectomy with internal sphincterotomy in treatment of haemorrhoids: a retrospective randomized controlled trial study. *Int Surg J* 2021;8:839-43.