

Efficacy of Haemorrhoidectomy with Internal Sphincterotomy in Case of Hemorrhoids

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ABSTRACT

BACKGROUND

The role of internal sphincterotomy along with haemorrhoidectomy in reducing the pain among the cases with haemorrhoids is still a debate among most surgeons. Hence this study was conducted to compare the efficacy of haemorrhoidectomy with or without internal sphincterotomy in reducing the postoperative pain among the patients with haemorrhoids.

METHODS

A hospital-based prospective comparative study was conducted among the patients with haemorrhoids undergoing surgical intervention for the same in the Department of General Surgery in Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research, Melmaruvathur, from January 2021 to June 2021. A total of a hundred and twenty cases with haemorrhoids were included in the study. Patients in group A (N=60) underwent haemorrhoidectomy alone and group B (N=60) underwent haemorrhoidectomy along with internal sphincterectomy. 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 the first three postoperative days and the duration required to resume the normal activities was found to be low in the group that underwent haemorrhoidectomy with internal sphincterectomy compared to the group that 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.

CONCLUSIONS

Haemorrhoidectomy with lateral internal sphincterotomy was better in terms of less pain but the complications were similar in both groups.

KEY WORDS

Haemorrhoidectomy, Internal Sphincterotomy, Pain, Haemorrhoids.

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BACKGROUND

Haemorrhoids are the common pathologies that refer to downward displacement of the vascular sub mucosal cushions of the anal canal. Usually, patients present with rectal bleeding, prolapse, pruritis ani and if not treated may develop complications.

Surgical treatment of haemorrhoids is haemorrhoidectomy, the most commonly practised method for treatment of symptomatic grade III and grade IV haemorrhoids. Also, the high incidence of recurrence due to high anal pressure reduces its effectiveness.^[1]

This procedure is associated with severe postoperative pain, bleeding, mucous discharge, urinary retention and anal stenosis.^[2,3] Though there are several causes listed that cause pain after hemorrhoidectomy such as anal packing, urinary retention and wound oedema, the most important is due to the spasm of the internal sphincter which remains exposed after open hemorrhoidectomy, especially in young patients with high anal tone.^[4,5]

The way to reduce the spasm and anal canal pressure is internal sphincterotomy which allows the surgeon to reduce pressure in a more graduated and reproducible fashion.^[6,7] Studies conducted by Chen et al. and William et al. reported that the addition of internal sphincterotomy to the routine haemorrhoidectomy is unnecessary and carries the added risk of faecal incontinence.^[8,9]

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

METHODS

This is a prospective comparative study conducted among the patients with grade 3 and 4 haemorrhoids undergoing surgery in the Department of General Surgery, Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research, Melmaruvathur and who were willing to participate in the study from January 2021 to June 2021. All the subjects who underwent previous surgical interventions for haemorrhoids were excluded from the study.

The study was initiated after obtaining ethical clearance from the institutional ethical committee. A sample size of 104 was estimated based on the formula $n = z^2 (pq/d^2)$, where, $z = 1.96$ at 95 % confidence interval, $p = 9.0$ % (prevalence of haemorrhoids according to previous study), $q = 100 - p$ (91.0 %) and $d =$ absolute precision (5.5 %). Considering 15 % of 104 as a non-response rate, i.e. $15.6 \approx 16$, a total sample size of 120 was calculated. The study was conducted among 120 study subjects using purposive sampling technique among those who were diagnosed to be having grade III & IV internal haemorrhoids and were undergoing surgery during the study period among whom 60 subjects underwent open haemorrhoidectomy and other 60 subjects underwent open haemorrhoidectomy with lateral sphincterotomy.

After obtaining the written informed consent, the data was collected using a semi-structured questionnaire consisting of demographic and clinical details. The data was obtained by the principal investigator and all the patients were subjected to detailed examination. With all the preparation of the patient in the pre-operative period, 60 subjects underwent open haemorrhoidectomy via Milligan and Morgan technique and the other 60 underwent open haemorrhoidectomy via Milligan and Morgan technique and lateral internal sphincterotomy. Patients were evaluated for clinical presentation and surgical outcome in terms of pain, operating time and complications.

Postoperative pain was measured using a visual analogue scale (VAS) with scores ranging from 0 to 10. Operative time and postoperative complications were assessed as a secondary outcome. After entering all the data into Microsoft Excel, it was analyzed using a statistical package for social sciences (SPSS) version 18.0. All the descriptive data were described in terms of frequency, percentage, mean and standard deviation. The significant difference in the means between the two groups was tested using the independent sample t-test and the association between the categorical variables was assessed using the chi-square test. A P value of less than 0.05 was considered statistically significant.

RESULTS

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

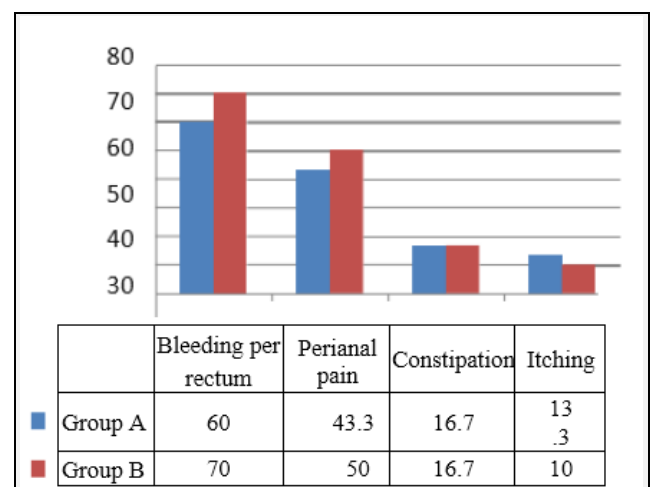


Figure 1. Patients with Different Presenting Complaints (Multiple Responses) in Group A and Group B

Variables	Group A (N=60)	Group B (N=60)
Age group (years)		
≤30	12 (20)	14 (23.3)
31-40	20 (33.3)	24 (40)
41-50	18 (30)	16 (26.7)
51-60	10 (16.7)	06 (10)
Sex		
Male	36 (60)	38 (63.3)
Female	24 (40)	22 (36.7)
Severity of disease		
Grade III	44 (73.3)	40 (66.7)
Grade IV	16 (26.7)	20 (33.3)

Table 1. Characteristics of Patients in Both Groups

On assessing the pain scores on day 1 of post-surgery, cases in group A reported the mean $\pm$ SD pain score as 6.2 ± 2.3 and cases in group B reported as 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 group A and group B were 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 postoperative 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, the 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 respectively with significant early resuming of activities noted in group B ($P=0.0005$) (Table 2).

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*

Table 2. Comparison of Different Operative Variables between Two Groups

*Significant

Complications	Group A	Group B	P-Value
No. of cases with complications	40 (33.3)	36 (30)	0.7852
Individual complication			
Bleeding	20 (16.7)	24 (20)	0.7433
Urinary retention	8 (6.7)	12 (10)	0.6469
Faecal incontinence	16 (13.3)	4 (3.3)	0.1639
Wound infection	4 (3.3)	4 (3.3)	1.000

Table 3. Proportion of Patients with Complications in Both Groups

On assessing the incidence of complications between the two groups, group A reported having 33.3 % and group B with 30 % of cases with one or more complications. But the difference in the proportion of cases with complications between the 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, faecal incontinence and wound infection, respectively whereas in group B, 20 %, 10 %, 3.3 % and 3.3 % of cases reported with bleeding, urinary retention, faecal incontinence and wound infection, respectively. Also, it was found that the difference in the proportion of individual complications in group A and group B was found to be statically insignificant (Table 3).

DISCUSSION

In the present study, mean pain scores on the first three

postoperative days and the duration required to resume the normal activities were found to be low in the group that underwent haemorrhoidectomy with internal sphincterectomy compared to the group that 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 of this study, Sumaira et al.^[10] in their study, reported the mean age of the patients as 42 ± 10.2 . Males were 77 (66.4 %) and 39 (33.6 %) were females with a male to female ratio of 2:1.

Sayed 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 faecal incontinence which was more frequent in haemorrhoidectomy with sphincterectomy group.^[11]

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 haemorrhoidectomy is a more suitable procedure than lateral internal sphincterotomy alone.^[12]

Diana et al. reported that internal sphincterotomy reduces pain significantly only in the first postoperative period, but not in the medium-long term follow up.^[13]

Das et al. reported that postoperative pain score was found to be less among patients who underwent haemorrhoidectomy with internal sphincterectomy than haemorrhoidectomy alone.^[14] Postoperative complications like urinary retention were seen in eight patients from the haemorrhoidectomy alone group and in one patient from haemorrhoidectomy with internal sphincterectomy group.

Raza et al. reported that a 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.^[15]

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.^[16]

In contradicting to these studies, Mathai et al. reported that there were no significant differences in postoperative pain scores and they concluded that the addition of lateral internal sphincterotomy to routine haemorrhoidectomy was unnecessary and carried the added risk of incontinence.^[17]

CONCLUSIONS

The findings of this study show that haemorrhoidectomy with lateral internal sphincterotomy is better in terms of less pain and reduced faecal incontinence but the 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.

Limitations

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

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