ORIGINAL ARTICLE

Outcome of Stapled Haemorrhoidectomy Versus Open Haemorrhoidectomy: A Randomized control trial

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ABSTRACT

Aim: To evaluate stapled haemorrhoidectomy as a better choice than open haemorrhoidectomy.
Methods: 160 consecutive patients of 3rd and 4th degree haemorrhoids fulfilling the inclusion criteria were randomly divided into Group A (Stapled Haemorrhoidectomy) and B (Open Haemorrhoidectomy). The main outcome variables are post-operative pain. Post-operative bleeding and length of hospital stay among two groups. For pain Visual analogue scale was used which ranges from 0 to 5.
Results: Both the Groups were comparable and there is statistically no significant difference among them in terms of Age, Gender and clinical presentation.Adequate pain relief was observed in 53.75% in Group A and in 18.75% in Group B within 48 hours of surgery. The mean pain score in patients of Group A at 48 hours was 1.65±0.813 while in patients of Group B was 2.58±1.04, which is statistically highly significant (p value 0.001).In terms of bleeding PR, only 06(7.5%) in group A and 55(68.75%) in group B persistently had complain of small amount of bleeding PR at 3 weeks and the P value is 0.000 (<0.0001) is highly significant from Group A 69(86.25%) patients were discharged from hospital on the second day of surgery while only 43(53.7%) patients from Group B went home on second day of surgery, the difference between two in terms of p value is highly significant (0.004).
Conclusion: On the basis of this study, it was conclude that stapled haemorrhoidectomy is the treatment of choice for 3rd and 4th degree haemorrhoids. It cures haemorrhoids in majority of patients with very low rate of complications and excellent post-operative results.
Keywords: Haemorrhoids, Stapled Haemorrhoidectomy, Open Haemorrhoidectomy,

INTRODUCTION

Haemorrhoids are normal vascular structures underlying the distal rectal mucosa and anoderm[1, 16]. In the general population, more than 1 in every 8 people suffers from hemorrhoids[2,3] usually more common during pregnancy[4,5] and with the maximal incidence between 45 and 65 years of age[6]. The exact cause of haemorrhoids is unknown[7]. Several contributing factors have been implicated, including the upright posture of humans, aging, pregnancy, heredity, constipation or chronic diarrhoea, and spending excessive periods of time on the toilet (i.e., reading, straining)[8,14,15]. Patients frequently complain of bleeding with or without defecation, a swelling, mild discomfort or irritation. Symptomatic haemorrhoidal tissues located above the dentate line are referred to as internal haemorrhoids and produce bleeding and prolapsed. Beside haemorrhoidal symptoms, many patients with Grade 3–4 haemorrhoids have other functional bowel symptoms, possibly associated with the irritable bowel syndrome[9].

10-20% of the individuals presented with hemorrhoids require surgery[10]. Stapled hemorrhoidectomy (procedure for prolapse and hemorrhoids [PPH]) is a newly developed method for the surgical management of hemorrhoids[11]. Spasm through the internal anal sphincter is one of the supposed causes for pain after hemorrhoidectomy. Stapled hemorrhoidectomy avoids the need for wounds in the sensitive perianal area thus reducing post-operative pain considerably, and facilitates a speedier return to normal activities[12,13]. It does not accompany the pain that usually occurs after resection of the sensitive anoderm. One of the previous studies showed earlier return to work and daily activity after stapled hemorrhoidectomy[17] Stapler Hemorrhoidectomy is a simple, quick & safe procedure that gives benefit in terms of reducing the postoperative complications namely pain & its sequelae with early return to activity[18,19].

MATERIAL AND METHODS

The study was conducted at the department of Surgery, Shalamar Hospital, Lahore. 160 patients of either sex, aged between eighteen to sixty years with 3rd and 4th degree haemorrhoids presenting to OPD from 1st February 2013 to 31st January 2014 were randomly allocated into two groups. Data was recorded in terms of age, gender, clinical presentation, post-operative pain, post-operative bleeding, length of hospital stay and anal stenosis.

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Patients with 1st and 2nd degree haemorrhoids, patients who had other concomitant anal pathology with haemorrhoids, patients with ASA III or above and those who were pregnant were excluded from the study.

An informed written consent was obtained from patients for performing open or stapled haemorrhoidectomy. The demographic information like age and sex were recorded. Presenting complaints like bleeding per rectum, mucosal prolapse, constipation and pruritus ani were recorded. Haemorrhoids were confirmed by proctoscopy in every case. Doubtful cases were examined under GA just before surgery especially in those who were susceptible of having cancer.

Routine investigation which includes complete blood count, hepatitis screening and X-ray chest poster-o-anterior view were done for all cases. ECG was done for selected cases aged >40 years.

After informed written consent all patients were operated day after admission. Under spinal or GA, digital rectal examination and proctoscopy were done to confirm haemorrhoids. Prophylactic single dose of antibiotic, inj Flagyl 500 mg was given to all patients. Then depending on the group in which the patient belonged,open or stapled hemorrhoidectomy was done. In open hemorrhoidectomy patients, pyodine soaked gauze was placed in the incised wound with a xylocain gel soaked pack in the anal canal for pressure effect to control post-operative bleeding that was removed in the evening of the operation day. All patients had uneventful postoperative recovery.

All patients were discharged 48 to 96 hours after surgery with advice of sitz baths and analgesics as per requirement along with stool softeners. Duration of hospital stay in days and post-operative bleeding were recorded. Post-operative pain was measured at 48 hours post -surgery by using visual analogue scale; ranges from 0 to 5. Based on the result of the scale the pain was taken as a quantitative variable divided into four categories which were, “No pain”(0), “Mild pain”(1-2), “Moderate pain”(3-4), & “Severe pain”(5) respectively. All of them were later followed in OPD at third and sixth weeks after discharge from the hospital and then at 6 months after surgery.

They were asked for any pain during and after defecation. Main outcome measures were pain relief, absence of bleeding PR and duration of hospital stay in number of days. The collected information was entered in SPSS version 17 and analyzed through it. For age and post-operative pain, mean ± standard deviation is presented. The qualitative variables in the study i.e., gender, number and degree of haemorrhoids, postoperative bleeding, presentation in outpatient department, hospital stay and anal stenosis were determined and presented as percentages and frequencies. For comparison of outcome among both groups chi-square test is applied as a test of significance. P value of ≤ 0.05 is considered as statistically significant.

RESULTS

A total of 160 cases were allocated randomly into open and stapled groups. All patients were followed-up at 48 hours, 3rd and 6th weeks after discharge from the hospital. Age of the patients ranges from 18 to 60 years with the mean age of 38.21(10.57) and 38.10(9.59) in group A and group B respectively. The maximum number of patients belongs to age group of 31-50 years (66.25%).(Table 1). 112 (70.0%) patients were male and 48 (30.0%) were female.(Table 2)

All of the patients had symptoms of bleeding per rectum and mucosal prolapsed (3rd or 4th degree haemorrhoids). Constipation was present in 88.12% and 71.87% of patients had complain of pruritus ani also (Table 3). Both the groups are comparable, as shown by significant p values

Table 1: Basic demographic data of patients with Haemorrhoids (n=160)

Age in years	Group A	Group B
20-30	20	17
31-40	28	33
41-50	23	22
51-60	9	8
Mean age	38.21(10.57)	38.10(9.59)

P value: 10.571

Table 2: Gender(n=160)

Groups	Males	Females
Group A	60	20
Group B	52	28

P value: 0.193

Table 3: Clinical presentations of patients with Hemorrhoids (n=160)

Presentation	Group A	Group B
Bleeding P/R	80	80
Mucosal prolapse	80	80
Constipation	74	67
Pruritis ani	55	60

P value: 0.1333, 0.339

Among all patients, 13 patients had single haemorrhoid, 53 patients had two haemorrhoids and 94 patients had haemorrhoids at all three primary positions (Table 4).

Table 4: Number of Hemorrhoids in patients (n=160)

Groups	Number of haemorrhoids		
	One	Two	Three
A	5	27	48
B	8	26	46

P value: 0.677

Prolapsed i.e., forth degree haemorrhoids were present in 67 patients while 93 patients presented with third degree haemorrhoids (Table 5).

Table 5: Degree of hemorrhoids in patients (n=160)

Groups	3rd degree	4th degree
Group A	42	38
Group B	51	29

P value: 0.154

In patients of Group A, 43(53.75%) had no pain at first follow up i.e.48 hours after operation. 24(30%) had mild pain, 11(13.75%) had moderate pain while only 2(2.5%) patients complained of severe pain. Among the patients of Group B, 15(18.75%) had no pain after 48 hours of surgery. 22(27.5%) had mild pain, 25(31.25%) had moderate pain and 18(22.50%) complained of severe pain. The p value calculated is found to be highly significant. (Table 6a)

Table 6(a): Pain score at 48 Hours post-operatively

Pain score	Group A	Group B
0	43	15
1-2	24	22
3-4	11	25
5	2	18
Mean pain	1.65(0.813)	2.58(1.04)

P value: 0.001

In patients of Group A, 61(76.25%) had no pain at second follow up i.e. three weeks post-operatively. 18(22.50%) had mild pain, 1(1.25%) had moderate pain while no patient complained of severe pain.

Among the patients of Group B, 40(50%) had no pain after three weeks of surgery. 15(18.75%) had mild pain, 13(16.25%) had moderate pain and 12(15%) still had complain of severe pain. The p value calculated is found to be highly significant (Table 6b). Significantly comparable results were found at the third follow up as well (Table 6c).

Table 6(b): Pain score at 3 weeks post-operatively

Pain score	Group A	Group B
0	61	40
1-2	18	15
3-4	1	13
5	0	12
Mean pain	1.25(0.46)	1.96(1.13)

Table 6(c): Pain score at 6 weeks post-operatively

Pain score	Group A	Group B
0	73	54
1-2	7	15
3-4	0	9
5	0	2
Mean pain	1.09(0.28)	1.49(0.79)73

P value: 0.001

Bleeding per rectum at 3 weeks and 6 weeks after haemorrhoidectomy was checked (Table 7). All patients presented with bleeding per rectum at admission while only 06(7.5%) in group A and 55(68.75%) in group B persistently had complain of small amount of bleeding PR at 3 weeks and the P value is 0.000 (<0.0001) is highly significant. None of the patients in group A has bleeding PR at 6 week's follow up while in group B 17(21.25%) patients complained of occasional bleed.

Table 7: Comparison of groups for bleeding per rectum at 3 weeks and six weeks post-operatively

(a): At 3 weeks

Bleeding P/R	Group A	Group B
Present	06	74
Absent	55	25

P value: 0.000

(b): At 6 weeks

Bleeding P/R	Group A	Group B
Present	0	80
Absent	17	63

P value: 0.0001

Regarding hospital stay most of the patients 69(86.25%) in Group A were discharged on first post-operative day while in Group B 43(53.7%) patients were allowed to go on first post-operative day. The p value calculated is highly significant. (Table 8)

Table 8: Comparison of duration of hospital stay in two groups

Groups	Hospital stay in days		
	2	3	4
A	69	11	0
B	43	34	2

P value: 0.004

None of the patients 0 in Group A had any complications while 1(1.25%) patient in Group B developed anal stenosis (Table 9)

Table 9: Comparison of anal stenosis in 2 groups (n=160)

Anal stenosis	Group A	Group B
Yes	0	1
No	1	79

P value: 0.0001

DISCUSSION

This study has shown the significant difference in post-operative pain score between two groups. Similarly there is significant reduction in post-operative bleeding per rectum as it is clearly indicated by P value less than 0.0001. One patient in Group B had anal stenosis that was managed by conservative measures. From the above mentioned results it can be concluded that stapled

haemorrhoidectomy is a safe and reliable procedure as it has a better outcome in terms of relief of patient's symptoms and no complications in patients with 3rd and 4th degree haemorrhoids as compared to Milligan Morgan haemorrhoidectomy. This can be explained as follow:

In stapled haemorrhoidectomy the surgery is done above the dentate line, quite away from the sensitive anoderm. That leads to pain free immediate post-operative period, which is the most satisfactory feeling for the patients as their agony is over. Sometime patients may complain of mild pain in case a part of staple line incorporates the dentate line which is very rare as the purse string stitch is taken at least 4cm above the dentate line.

Stapled haemorrhoidectomy has high rates of early rehabilitation with a low recurrence rate. Milligan Morgan haemorrhoidectomy also known to have good healing rate but it has its own disadvantages owing to involvement of perianal skin during the procedure. The most important among these being post op pain and delayed hospital stay owing to that. Therefore it has significantly high rates of analgesia usage. Persistent haemorrhoids have also been noted in significant number of patients who underwent open haemorrhoidectomy.

The follow up protocol were also comparable as, pain relief, hospital stay in number of days and anal stenosis were defined nearly similarly. Although follow up time was up to 6 months in present study, which is less as compared to other studies, but many wounds heal and many of the stenosis and recurrences can be seen during this time. However short follow up time in present study may miss some of the recurrences. These studies are also comparable to present study regarding mean age and gender distribution of patients.

In present study there was adequate pain relief in 43(53.75%) patients after about 48 hours of surgery. Rest of the 24(30%) patients were discharged with mild pain and 11(13.75%) patients were discharged with moderate pain. Only 2(2.5%) patients complained of severe pain. This shows quick pain relief in majority of the patients which is also supported by other studies. There were no complications related to anaesthesia. This can be explained by the fact that the procedure can be completed in very short time if surgeon is experienced and familiar with the technique.

CONCLUSION/RECOMMENDATIONS

It has been concluded on the basis of results and literature review that, stapled haemorrhoidectomy has better outcomes in terms of post-operative pain and early return to work. Studies with longer follow ups are required to see the long term outcome of this procedure.

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