

Stapled Versus Closed Haemorrhoidectomy in the Treatment of 3rd and 4th Degree Haemorrhoids

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ABSTRACT

Haemorrhoids are the cushions of the tissue within the anal canal that contain blood vessels and their surrounding supporting tissue made up of muscle and elastic fibres. It is classified into four degrees. 1st degree haemorrhoids bleed but do not prolapse, 2nd degree haemorrhoids prolapse on defaecation and reduce spontaneously, 3rd degree haemorrhoids prolapse on defaecation and require manual reduction and 4th degree haemorrhoids remain permanently prolapsed. Haemorrhoids may cause symptoms including bleeding, soiling, discharge, itching, prolapse and pain if haemorrhoids are thrombosed. **Methodology:** This Quasi experimental study was carried out in the Department of General Surgery at Lahore General Hospital, Lahore. A total of 190 patients with 3rd and 4th degree haemorrhoids were enrolled and divided in two equal groups i.e. 95 group A (stapled haemorrhoidectomy) & 95 group B (closed haemorrhoidectomy). **Results:** Among 95 patients in group A, 59 were male and 36 female patients with a mean age of 41.36 years and in group B, 55 male and 40 female patients, with a mean age of 41.33 years. The mean duration of hospital stay was 1.09 days in group A and 2.16 days in group B and p value 0.000. The mean operative time was 23.25 minutes in group A and 43.13 minutes in group B with a p value 0.000. Minor complications were occurred in group A in 8 patients (8.4%). Post operative pain was significantly lower in group A and pain was significantly high in group B. Mean return to work in group A was 7.38 days and in group B was 16.67 days. **Conclusion:** Stapled haemorrhoidectomy compared to closed haemorrhoidectomy offers less post operative pain, shorter hospital stay, less operative time and earlier return to work. Stapled haemorrhoidectomy is a costly procedure for the patient and rate of recurrence after stapled haemorrhoidectomy are higher than closed haemorrhoidectomy but in our follow up of four months no recurrence was noted in either group.

Key words: Haemorrhoids, closed haemorrhoidectomy and stapled haemorrhoidectomy, band ligation.

INTRODUCTION

Haemorrhoids are the cushions of the tissue within the anal canal that contain blood vessels and their surrounding supporting tissue made up of muscle and elastic fibres. Haemorrhoids result from disruption of the suspensory ligaments permitting downward prolapse of the cushions into and beyond the anal canal during defaecation.¹

Haemorrhoids are classified into four degrees. First degree haemorrhoids bleed but do not prolapse, second degree haemorrhoids prolapse on

defaecation and reduce spontaneously, third degree haemorrhoids prolapse on defaecation and require manual reduction, fourth degree haemorrhoids remain permanently prolapsed.² First degree haemorrhoids are treated by conservative management and injection sclerotherapy, 2nd degree haemorrhoids are treated by band ligation, while 3rd & 4th degree haemorrhoids are treated by operative procedures like, open, closed and stapled haemorrhoidectomy.²

Haemorrhoids are usually uncommon in rural areas in contrast to urban areas. There is also

increased prevalence of haemorrhoids amongst higher socioeconomic groups. Haemorrhoids may cause symptoms including bleeding, soiling, discharge, itching, prolapse and pain if haemorrhoids are thrombosed.³ Stapled haemorrhoidectomy or procedure for prolapse haemorrhoids was presented as a novel technique for the treatment of prolapsed haemorrhoids by Antonio. It has gained popularity for the treatment of 3rd and 4th degree haemorrhoids largely due to reduced postoperative pain, shorter hospital stay and earlier return to work than the closed haemorrhoidectomy.⁴ However some studies have reported a high recurrence rate when performed for 4th degree haemorrhoids and during learning curve. It is more costly procedure for the patient and this factor is important in our circumstances.

MATERIAL AND METHODS

This was a Quasi Experimental study carried out in the Department of General Surgery at Lahore General Hospital, Lahore Unit-II during a period of one year from December 2009 to December 2010. Patients were included in both groups of study who fulfill the inclusion criteria. Ninety five patients were operated by Stapled haemorrhoidectomy technique and 95 patients were operated by Closed haemorrhoidectomy technique and followed up for next four months (1st week, 2nd week, 1st month, 2nd month and 4th month) for surgical complications of the treatment and return to normal activity of life. All these information were collected through a specially designed proforma. All the patients were informed pre-operatively about the nature of the disease, surgical procedure and complications. Informed consent was taken. Data was analyzed using SPSS version 20. The variables to be analyzed included demographic (age, gender, etc.), history of illness (duration, symptoms), clinical examination (degree of haemorrhoids). They were presented as simple descriptive statistics. The outcome measures (pain, duration of hospital stay, bleeding, urinary retention, operative time and return to work.) were presented as frequency tables. Student t test was applied for age, hospital stay, operative time and return to work.

RESULTS

Fifty nine patients were male and 36 female with a mean age of 41.36 years in group A and 55 male and 40 female patients, with a mean age of 41.33 years in group B. The mean duration of hospital stay was 1.09 days in group A and 2.16 days in group B and p value was <0.05 which is significant. The mean operative time was 23.25 minutes in group A and 43.13 minutes in group B with a p value was <0.05 which is significant (Table 1). The main indications were bleeding per rectum which was 68.4% in group A and 63.2% in group B, perianal discharge was 12.6% in group A and 14.7% in group B, pain was 10.5% in group A and 13.7% in group B, itching was 8.4% in both groups and prolapsed haemorrhoids with 3rd degree were 63.2% in group A and 61.1% in group B, and 4th degree prolapsed haemorrhoids were 36.8% in group A and 38.9% in group B (Table 2). Minor complications occurred in group A in 8 patients (8.4%). Acute retention of urine in 2 patient (2.1%), bleeding from anastomotic site in 4 patients (4.2%) and significant pain having visual analogue score of 7 requiring prolong hospital stay of 3 days in 2 patients (2.1%). Minor complications occurred in group B in 20 patients (21.1%), acute retention of urine in 2 patients (2.1%), bleeding in 3 patients (3.2%) and significant post operative pain with VAS of 8 requiring prolong hospital stay of 3 days in 15 patients (15.8%) (Table 3). Postoperative pain was significantly lower in group A patients having VAS of 3 on the operative day in 93 patients requiring only tab. paracetamol to control the pain. Two patients had severe pain with VAS of 7 on the operative day and they needed narcotic analgesia for two days and were discharged on 3rd postoperative day with VAS of 1, when no analgesia was required (Table 4). Postoperative pain was significantly high in group B in 80 patients with VAS 6 as compared to group A patients. Severe pain occurred in 15 patients with VAS 8 and they needed narcotic analgesia for two days and were discharged on the 3rd postoperative day with VAS of 1 when no analgesia was required (Table 4). Mean return to work in group A was 7.38 days and in group B mean return to work was 16.67 days. P value was 0.000 which is significant as shown in table 2. Post

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operative follow up at fourth month showed significant resolution of problems of patients regarding bleeding, perianal discomfort, pain and itching in both the groups.

Table 1: Comparison of variables of group A and B.

Variables	Mean		Mean		P value
	Group A	Group B	Group A	Group B	
Age (years)	41.36	41.33	4.087	4.362	0.959
Hospital stay (days)	1.09	2.16	0.585	0.367	0.000
Operative time (minutes)	23.25	43.13	4.809	4.170	0.000
Return to work (days)	7.38	16.67	4.064	3.866	0.000

Table 2: Preoperative presentations of patients of group A and Group B (n=190).

Symptoms	Group A (n=95)		Group B (n=95)	
	No.	%	No.	%
Prolapsed haemorrhoids	95	100	95	100
3 rd degree	60	63.2	58	61.1
4 th degree	35	36.8	37	38.9
Bleeding per rectum	65	68.4	60	63.2
Peri anal discharge	12	12.6	14	14.7
Pain	10	10.5	13	13.7
Itching	8	8.4	8	6.4

Table 3: Comparison of complications of group A & B

Variables	Group A		Group B		P Value
	No.	%	No	%	
Pain	2	2.1	15	15.8	0.001
Bleeding	4	4.2	3	3.2	0.700
Retention of urine	2	2.1	2	2.1	1.00

Table 4: Post operative pain by VAS in patients of Group A & B.

Day	Group A (n=95)		Group B (n=95)	
	n=2	n=93	n=15	N=80
Operative day	7 (7-10)	3 (3-6)	8 (7-10)	6 (3-6)
First day	5 (3-6)	1 (1-2)	5 (3-6)	3 (3-6)
Second day	3 (3-6)	-	3 (3-6)	1 (1-2)
Third day	1 (1-2)	-	1 (1-2)	-

DISCUSSION

There were 59 male and 36 female patients in group A and 55 male and 40 female in group B. The mean age of patients was 41.36 years in group A and 41.33 years in group B, where as mean age in the study in stapled haemorrhoidectomy group was 51 years and in closed haemorrhoidectomy group was 44 years.⁵ Sobrado et al.⁶ reported mean age of 40.6 years which is comparable with our study. The mean hospital stay in our study in group B was 2.16 days which is comparable with the study of Lau⁷ in which the hospital stay was 2.5 days.

The maximum pain in our study in group A according to VAS was 3 in 93 patients which is comparable with other similar studies of Basdanis et al⁸ in which the maximum pain reported according to VAS was 3. The maximum pain in our study in group B according to VAS was 6 in 80 patients which is comparable with the study of Basdanis⁸ in which the maximum pain reported according to VAS was 6. Patients were discharged on the 2nd postoperative day when no injectable analgesia was required. The analysis of postoperative complications in our study showed pain in 2 patients in group A (2.1%) with VAS of 7 on the operative day. They required narcotic analgesia for two days and were discharged on the 3rd postoperative day when no injectable analgesia was required. It seems that the cause of persistent pain after stapled haemorrhoidectomy in a small number of patients remain obscure.⁹ Pavlidis et al¹⁰ the maximum pain reported in stapled haemorrhoidectomy group by VAS was 0.7. The maximum pain reported in stapled haemorrhoidectomy group by VAS was 1.8 which is less than our study. The reported rates of

maximum pain are higher in closed haemorrhoidectomy group as compared to the stapled haemorrhoidectomy as reported by the studies of Cheetham et al.¹¹

The patients who bleed from stapled line during surgery have an increased chance of post operative bleeding and they should be managed by haemostatic suture placement at the bleeding point as shown in the study of Koh et al.¹². However some studies have reported rare complications *e.g.* intra-abdominal bleeding, rectal bleeding and retro peritoneal bleeding after stapled haemorrhoidectomy and they have blamed stapled haemorrhoidectomy to cause intra abdominal bleeding due to staples cutting through an enterocele or bleeding may be due to the residual staples.^{13,14}

Bleeding occurred in 3 patients (3.2%) in group B and managed conservatively with blood transfusions and anal wound packing and were discharged satisfactorily on 3rd post operative day after ensuring there was no bleeding from the anal wound. However according to the study of Correa-Rovelo et al¹⁵ no patient required surgical intervention to control bleeding and were managed conservatively which is comparable with our study.

The mean operative time in our study in group A patients was 23.25 minutes which is comparable with the study of Pavlidis et al¹⁶ in which the operative time was 23 minutes. The mean operative time in our study in group B patients was 43.13 minutes which is comparable with the study of Hetzer et al.¹⁷ in which the operative time was 43 minutes. However most of the studies have reported less operative time in stapled haemorrhoidectomy group than the closed haemorrhoidectomy group *e.g.* Krska et al.¹⁸ reported operative time of 28 minutes in stapled haemorrhoidectomy group and 46 minutes in closed haemorrhoidectomy group. Complications are expected during early learning phase of the stapled haemorrhoidectomy. Although the stapled haemorrhoidectomy is a simple procedure but the critical step is the placement of the purse string suture so that the staple line is between 3-4 cm above the dentate line to avoid complications.^{19,20}

The mean duration to return to work in our study was 7.38 days in group A and 16.67 days in group B which is comparable with the studies of

Racalbuto et al²¹. Racalbuto et al²¹ showed return to work of 8 days in stapled haemorrhoidectomy group and 16.9 days in closed haemorrhoidectomy group. Reported rates of recurrence after stapled haemorrhoidectomy are high as compared to closed haemorrhoidectomy.⁹ The reported rate of recurrence after stapled haemorrhoidectomy is four times higher than closed haemorrhoidectomy and it is interesting to note that the number of re-interventions reported after stapled haemorrhoidectomy and closed haemorrhoidectomy are similar. Therefore closed haemorrhoidectomy can not be completely replaced by stapled haemorrhoidectomy.²² Chung et al²³ reported no recurrence in either group which is comparable with our study. There was no case of recurrence reported in our study at four months regular follow up.

Stapled haemorrhoidectomy has definite short term advantages with reference to reduced postoperative pain, early recovery, shorter hospital stay, less operative time, earlier return to work and patient's acceptance and satisfaction are also high. However it is more costly procedure for the patient and this factor is important in our circumstances as also reported in the study.²⁴

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