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POSTOPERATIVE RECOVERY; STAPLED HAEMORRHOIDOPEXY VERSUS CONVENTIONAL HAEMORRHOIDECTOMY.

Ashar Ahmad Khan[1], Tania Mahar[2], Muhammad Kashif Adnan[3], Abdul Rasheed Surahio[4], Abdul Manan[5], Irfan Ahmad[6]

1. FCPS, MRCS
Assistant Professor
Department of Surgery
Nishtar Medical University/Hospital, Multan.
2. FCPS
Senior Registrar
Nishtar Medical University/Hospital, Multan.
3. FCPS
Consultant Surgeon
Shahbaz Sharif Hospital, Multan.
4. FCPS
Assistant Professor
Department of Surgery
LUMHS, Jamshoro.
5. FCPS
Assistant Professor
Department of Surgery
Nishtar Medical University/Hospital, Multan.
6. FCPS, FRCS
Assistant Professor
Department of Surgery
Nishtar Medical University/Hospital, Multan.

Correspondence Address:
Dr. Ashar Ahmad Khan
Department of Surgery
Nishtar Medical University/ Hospital, Multan.
asharahmad71@hotmail.com

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ABSTRACT… Conventional haemorrhoidectomy, a usual procedure for haemorrhoids in our set up have many short and long term complications. Some patients complained pain many weeks after surgery and are unable to do their routine work. Anal stenosis and recurrence are long term issues. There is need for some other procedure which can decrease postoperative pain and hospital stay. **Objectives:** To compare the postoperative recovery between stapled hemorrhoidopexy and conventional haemorrhoidectomy. **Study Design:** Randomized Clinical trial. **Setting:** Surgery Department of Nishtar Medical University Multan. **Period:** from 01-01-2018 to 31-12-2018. **Material & Methods:** Randomly 02 equal groups of the patients, A and B were made. Stapled haemorrhoidopexy (SH) and conventional haemorrhoidectomy was done in group A and B respectively. SPSS version 20 used for data analysis. Mean and standard deviation were used for quantitative variables including postoperative pain, age and hospital stay. Independent Student t test used for comparison of hospital stay and postoperative pain. Effect modifier including gender, age, duration and grade of haemorrhoids were controlled by stratification and Chi square test was applied. P value less than 0.05 was taken as significant. **Results:** Out of 60 patients, 32 were males and 28 females. In Group A (Stapled Haemorrhoidopexy), mean age was 37.37 $\pm$ 6.36 years and 39.17 $\pm$ 5.53 years in Group-B. Postoperative pain in Group A was 3.60 $\pm$ 1.27 and 6.03 $\pm$ 1.73 in Group B. Postoperative pain was significantly high in Group B (CH) and P value =0.000. Mean hospital stay was 0.90 $\pm$ 0.48 days in Group A and 1.87 $\pm$ 0.57 days in Group B with P value= 0.000. **Conclusion**: Stapled haemorrhoidopexy is associated with shorter hospital stay and decrease postoperative pain irrespective of age, sex and grade of the haemorrhoids.

Key words: Conventional Haemorrhoidectomy, Hospital Stay, Postoperative Pain, Stapled Haemorrhoidopexy.

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INTRODUCTION

Haemorrhoids are formed by hypertrophy and congestion of the anal cushions which later on prolapsed with advancement of disease. Exact etiology is unknown but increasing age, dilatation of veins of internal haemorrhoidal plexus and destruction of the supporting tissue are supposed to be the main causes. Other contributing factors are heredity, diet, constipation, occupation and pregnancy.[1]

About 5% of the general population has some degree of haemorrhoidal disease especially those elder than 40 years.[2] Haemorrhoids can be external or internal relative to dentate line.[3] Internal haemorrhoids are divided in to four grades by Goligher system.[4] If patient present with bleeding per rectum only, Grade1, Bleeding with protrusion of haemorrhoid that reduce spontaneously Grade2, If haemorrhoid do not reduce itself but need manual reduction, Grade3 and if protrude permanently, Grade4. Some patients may present with further complications of haemorrhoid like thrombosis, gangrene, ulcer and infection.

Early haemorrhoids can be treated simply by dietary changes and by avoiding constipation. Other treatment options in Grade 1 and 2 haemorrhoids are injection sclerotherapy,

cryotherapy, elastic band ligation, infrared and laser photocoagulation. Usually operative treatment is required for grade3 and 4 haemorrhoid. Mostly performed procedure is open haemorrhoidectomy by Milligan – Morgan technique.[5] In this technique, after surgery patient is left with large, painful perianal wound which take long time to heal. This results in prolong hospital stay and delay in return to work or daily activity. There is another technique in which perianal wound is closed called Ferguson technique of closed haemorrhoidectomy.[6] This technique is technically more demanding and studies showed same degree of post-operative pain as that was found in open technique.[7]

In 1998, Antonio Longo present alternative way of haemorrhoidectomy ie stapled haemorrhoidectomy.[8] Rim of mucosa from anal canal is excised just above the dentate line by using circular staple gun. It reduce the blood supply of the haemorrhoid, elevate and reposition the anal cushions. There is no wound on highly sensitive perianal skin. Many studies reported short hospital stay, decrease postoperative pain and early return to work after stapled haemorrhoidectomy. Many changes were made in the name of the procedure and now finally accepted by international committee is staple haemorrhoidopexy.[9]

In our setup, mostly haemorrhoidectomy is performed by open technique. Many of our patients are complaining postoperative pain even after a month of surgery and this results in delay in return to work and daily life activities. This drive us to do a research to compare new staple haemorrhoidopexy technique with our conventional open haemorrhoidectomy.

MATERIAL AND METHODS

This randomized clinical trial was conducted at Surgery department of Nishtar Medical University and hospital, Multan from 01-01-2018 to 31-12-2018. Using non-probability consecutive sampling, 60 patients more than 12 years of age, having internal haemorrhoid of grade 3 or 4 and admitted through OPD were included in this study. They were having disease for less than 2 year duration. Patients with history of anorectal surgery, concomitant anorectal disorder, fecal incontinence, pregnancy, colorectal malignancy, unfit for surgery and refused to participate were excluded from the study.

Before starting the study approval was taken from the hospital ethical committee. Informed consent was taken from the patients. Patients were divided randomly in to two equal groups of 30, A and B by Draws method. Group A patients allocated for stapled haemorrhoidopexy (SH) and Group B for conventional haemorrhoidectomy (CH). All the operations were done by senior registrars or above. Researchers did the follow up of the patients and entered the data on preformed proforma. Mean postoperative pain was assessed on VAS 24 hours after the surgery and hospital stay was counted from the operative day till discharge.

SPSS version 20 was used for data entry and analysis. Mean and standard deviation were calculated for quantitative variables including postoperative pain, age and hospital stay. Qualitative variables like gender were presented as percentage and frequency. Independent Student t test was used for comparison of postoperative pain and hospital stay. Effect modifier including gender, age, duration and grade of haemorrhoids were controlled by stratification and Chi square test was applied. P value less than 0.05 was taken as significant.

RESULTS

Total 60 patients were divided in to two equal groups, Group A underwent stapled hemorrhoidopexy (SH) and Group B underwent conventional haemorrhoidectomy (CH). Mean age in our study was 37.37 $\pm$ 6.36 and 39.17 $\pm$ 5.53 years in Group A and B respectively. Postoperative pain in Group A was 3.60 $\pm$ 1.27 and 6.03 $\pm$ 1.73 in Group B. Postoperative pain was very high in Group B (Stapled haemorrhoidopexy) and P value =0.000. Mean hospital stay was 0.90 $\pm$ 0.48 days in Group A and 1.87 $\pm$ 0.57 days in Group B with P value= 0.000. There were 32 (53.3%) males and 28(46.67%) females in our study.

Stratification was done on the effects of gender, age and duration of haemorrhoids on surgical outcome. Stapled haemorrhoidopexy was associated with better outcomes regarding postoperative pain and hospital stay in all age groups regardless of their gender, duration and severity of haemorrhoids. Results are shown on Table. No. II and III.

Variables	Groups	Number of Patients	Minimum	Maximum	Mean	Standard Deviation (SD)
Post-operative pain (VAS)	Stapled Haemorrhoidopexy (SH)	30	2.0	6.0	3.60	1.27
	Conventional Haemorrhoidectomy (CH)	30	3.0	9.0	6.03	1.73
Hospital Stay (Days)	Stapled Haemorrhoidopexy (SH)	30	0.00	2.0	0.90	0.48
	Conventional Haemorrhoidectomy (CH)	30	1.0	3.0	1.87	0.57

Table-I. Descriptive statistic of postoperative pain and hospital stay. (n=60)

Variables		Group-A,Stapled Haemorrhoidopexy (SH)	Group-B, Conventional Haemorrhoidectomy (CH)	P- Value
Gender	Male	3.53 ± 1.27	7.50 ± 1.37	0.000
	Female	4.0 ± 1.41	5.57 ± 1.63	0.05
Haemorrhoids	Grade 3	3.50 ± 1.46	6.29 ± 1.80	0.000
	Grade 4	3.71 ± 1.06	5.69 ± 1.65	0.002
Disease Duration	1-6 Months	3.73 ± 1.55	6.77 ± 1.48	0.001
	7-12 Months	3.54 ± 1.03	5.36 ± 1.96	0.01
	13-24 Months	3.50 ± 1.30	5.66 ± 1.36	0.013

Table-II. Stratification of post-operative pain (VAS), n=60

Variables		Group-A,Stapled Haemorrhoidopexy (SH)	Group-B, Conventional Haemorrhoidectomy (CH)	P- Value
Gender	Male	0.88 ± 0.43	1.83 ± 0.75	0.03
	Female	1.00 ± 0.82	1.57 ± 0.53	0.04
Haemorrhoids	Grade 3	0.94 ± 0.44	1.88 ± 0.44	0.000
	Grade 4	0.85 ± 0.53	1.85 ± 0.55	0.000
Disease Duration	1-6 Months	0.91 ± 0.53	1.69 ± 0.48	0.000
	7-12 Months	0.90 ± 0.54	1.90 ± 0.54	0.00
	13-24 Months	0.87 ± 0.35	2.16 ± 0.75	0.007

Table-III. Stratification of hospital stay in days (n=60)

DISCUSSION

Conventional haemorrhoidectomy has many post-operative complications like bleeding, pain, urinary retention, anal stenosis and incontinence. Many modification have been proposed in the past to improve the post-operative outcome especially to reduce the postoperative pain. In 1998, Longo started an alternative technique, PPH for the surgical treatment of haemorrhoids.[8] He used the circular staple gun to excise the rim of redundant mucosa of the rectum above the dentate line. The goal is to cut the arterial supply of the haemorrhoid and to lift the redundant anal cushions. In this method, no surgery done on sensitive anal skin which is the cause of pain after conventional haemorrhoidectomy. Many studies done in the past which showed that SH has many benefits like shorter operative time, decrease postoperative pain, decrease chances of urinary retention and early return to work and normal activity.[9]

In our study, two equal groups of 30 patients were made, Group A in which all the patients underwent stapled haemorrhoidopexy (SH) and Group B in which all the patients underwent conventional haemorrhoidectomy (CH). Mean age with SD in our study was 37.37 $\pm$ 6.36 and 39.17 $\pm$ 5.53 years in Group A and B respectively. Khan NF from Karachi mentioned mean age of 40.7 $\pm$ 11.6 years in his study.[10] Bikhchandani J mentioned mean age of the patients 46.02 years (SD=12.33) in SH and 48.64 years (SD=14.5) in open haemorrhoidectomy group.[11] Shalaby R showed mean (SD) age of the patients in SH and open CH groups 44.1(3.2) and 49.1(12.2) years respectively.[12] Result from another study from Saudi Arabia showed mean age of 39.6 years.[14]

In this study there were 32(53.3%) males and 28(46.7%) females with M: F ratio 1.14:1. Rafaqat Bota from Civil Hospital, Karachi mentioned 83(69.1%) males and 37(30.9%) females in his study.[13] Salman Yousuf Guraya et al mentioned total 30 patients, 21 (70%) males and 9 (30%) females in his study.[14] In our study patients presented with haemorrhoids of grade 3 were 72.8% and grade 4 were 27.2%. Rafaqat Bota reported 76.6% patients with grade3 and 23.4% with grade 4 haemorrhoid. Salman Yousuf Guraya reported this as 86% and 14%.

In this study, mean operating time was 22 minutes in SH group and 45 minutes in CH group. Rafaqat Bota et al and Salman Yousuf Guraya et al reported operating time 15-50 minutes (Median=32) and 21.7 minutes (Range 17-36) respectively after stapled haemorrhoidopexy. This study showed mean hospital stay of 0.90 days in Group A with standard deviation of 0.48 and in Group B was 1.87 days with standard deviation of 0.57 (p=0.000). Khan NF et al mentioned mean hospital stay in SH group 2.03 $\pm$ 0.81 and in open haemorrhoidectomy group 3.37 $\pm$ 2.2 days with significant p value = 0.003.[10] Rafaqat Bota et al and Salman Yousuf Guraya et al mentioned hospital stay of 1-3 days (Median=34 H) and 1.9 days respectively after stapled hemorrhoidopexy.

In our study, mean pain score in Group A was 3.60 $\pm$ 1.27 while in Group-B was 6.03 $\pm$ 1.73 with P=0.000. In SH group, 11 patients and in CH group 08 patients have excellent outcome. Our results showed clear dominance of SH over CH in regards of postoperative pain. Similar results were shown by many studies. Khan NF report postoperative pain score 4.43 $\pm$ 1.25 in SH group and 7.37 $\pm$ 0.72 in open haemorrhoidectomy group.[10] Rafaqat Bota et al reported very less postoperative pain and need of analgesia after stapled haemorrhoidopexy and 78 out of 120 patients (65%) were able to be discharged on 1st postoperative day and remaining 42 out of 120 (35%) were discharged on 2nd postoperative day.[13] Salman Yousuf Guraya et al mentioned the same trend that mild anal pain after defecation was reported by 7% of the patients.[14] E. Aytac compared the results of Ferguson haemorrhoidectomy and SH and report no difference in long term anorectal pain (p=0.6) in both groups in his longest follow up study.[15] Angus J M et al mentioned the comparable results of postoperative pain 2% in SH and 3% in traditional haemorrhoidectomy.[16]

Rafaqat Bota reported some complications other than the postoperative pain were recurrence in 4.16%, anal stenosis in 0.83% and bleeding in

0.83% of the patients. Three out of 120 patients required readmission for the treatment of their complications.[13] Salman Yousuf Guraya mentioned 3% postoperative bleeding and 3% prolapse after stapled haemorrhoidopexy.[14] Col. S.S. Jaiswal reported some rare complications like rectal perforation and postoperative thrombosis of external haemorrhoid in 2.5% patients.[9] Angus J M et al[16] mentioned in his study that SH was less painful postoperatively in short term only and increased recurrence rate after SH as compared to traditional haemorrhoidectomy. After 12 months, recurrence rate was 32% in SH group and 14% in traditional excision group. After 24 months, it was 25% and 42% respectively. Further surgical intervention was required in 9% patients of SH group and 6% patients of traditional excision group. According to Argus J M et al SH was associated with increased cost, recurrence, tenesmus and worst continence. Overall quality of life was better in traditional haemorrhoidopexy.[16] A Sturiale et al also mentioned high rate of complications after SH, recurrence in 9.3%, incontinence in 39% and tenesmus in 38.2% patients.[17] We found short hospital stay and decrease postoperative pain in SH group as compared to CH group. We tried to check the effects of gender, age and grade of haemorrhoid on surgical outcome in both groups and we found no difference in trends. Simillis C mentioned in his meta-analysis study that SH was associated with faster recovery and decrease postoperative pain but high recurrence rate.[18]

LIMITATIONS

Sample size is small and there is short follow up. There is need of further clinical trial with large sample size and long follow up.

CONCLUSION

Stapled haemorrhoidopexy is associated with shorter hospital stay and decrease postoperative pain irrespective of age, sex and grade of the haemorrhoids.

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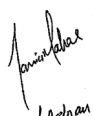
AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Ashar Ahmad Khan	Data collection, Study design, Interpretation, Principal Investigator, final reading.	
2	Tania Mahar	Data collection, Interpretation, Principal Investigator, final reading.	
3	M. Kashif Adnan	Study design, Interpretation, Principal Investigator, Final reading.	
4	Abdul Rasheed Surahio	Study design, Interpretation, Principal Investigator, Final reading.	
5	Abdul Manan	Data collection, Study design, Interpretation, final reading.	
6	Irfan Ahmad	Data collection, Study design, Interpretation, Principal Investigator.