

Original Research Article

Comparative Study of Outcome of Surgical Treatment of Haemorrhoid between Open Haemorrhoidectomy and Stapled Haemorrhoidopexy

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Abstract: Background: Hemorrhoids are anal cushions that enlarge, bleed, thrombose, prolapse, and result in clinical complaints. Surgery is the recommended course of action for people with grade III or grade IV haemorrhoids. The purpose of this study was to evaluate the clinical characteristics, operating time, hospital stay, and postoperative complications of the two haemorrhoid surgery procedures: open hemorrhoidectomy and stapled haemorrhoidopexy. **Methods:** A retrospective cross-sectional study was carried out at the department of Surgery in Kumuduni Women's Medical College, Tangail from January 2020 to January 2021. The current study covered all 84 patients, 42 of which underwent open surgery and 42 of which underwent stapled treatment. Version 20 of SPSS was used for the statistical analysis. In order to compare the results between the groups, both parametric and non-parametric tests were performed. **Result:** The mean age of patients was 39.05 ± 5.29 years for the stapled haemorrhoidopexy group and 39.52 ± 5.22 years for the open hemorrhoidectomy group. Most 23(54.8%) participants were male and 19(45.2%) were female in the stapled group whereas 25(59.5%) were male and 17(40.5%) were female in the open hemorrhoidectomy group. The stapled haemorrhoidopexy group's mean \pm SD of intraoperative bleeding was 48.44 ± 9.42 ml, the average hospital stay was 1.42 ± 0.94 days and the average surgical duration was 1.42 ± 0.94 minutes. The mean \pm SD of intraoperative blood loss for the open hemorrhoidectomy group was 72.65 ± 11.92 ml, the mean hospital stay was 3.3 ± 2.9 days, and the mean operational time and standard deviation were 49.12 ± 6.46 minutes. It was discovered that the open group had a higher rate of urine retention. Six (14.3%) patients in the stapled group experienced post-operative bleeding, compared to nine (21.4%) in the open group. In addition to 31% of patients in the stapled group, 57.1% of patients in the open group reported pain. **Conclusion:** In conclusion, this study reveals that stapled haemorrhoidopexy is preferable to open hemorrhoidectomy in terms of intraoperative and immediate postoperative issues, with an early return to normal activities. There are no recurrences, chronic prolapses, or incontinence. Thus, stapler haemorrhoidectomy rather than open hemorrhoidectomy may take the position of the gold standard for the treatment of second to third-degree haemorrhoids.

Keywords: Haemorrhoid, Open Haemorrhoidectomy, Stapled Haemorrhoidopexy.

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INTRODUCTION

Haemorrhoids are anal cushions that enlarge, bleed, thrombose, prolapse, and result in clinical complaints [1]. In contrast to internal haemorrhoids, which originate from the anal canal's sub-epithelial plexus above the dentate line, external haemorrhoids are collections of congested external perianal vascular

plexus that are covered by perianal skin [2]. Internal haemorrhoids can be divided into four categories based on the degree of prolapse, although this may not accurately indicate how bad a patient's symptoms are. A feeling of fullness and an incomplete evacuation are related to the symptoms, which also include discomfort, itching, mucous discharge, bleeding, pain, and prolapse [3]. Conservative therapy can be used to treat

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symptomatic haemorrhoids, and it entails dietary and lifestyle changes as well as the use of various pharmaceutical agents, including lotions, office-based non-operative procedures, and other items [4]. Surgery is the recommended course of action for people with grade III or grade IV haemorrhoids who are not responding to other types of treatment [5-7]. The disease is caused by a variety of factors, not just the stated male predominance in older people [8]. It is advised to avoid surgery if you have first- or second-degree haemorrhoids because it is not a viable treatment option. On the other hand, the Milligan-Morgan hemorrhoidectomy is the most popular surgical method for treating third and fourth-degree hemorrhoids and is the current Gold Standard because it has the least amount of postoperative problems, is more economical, and has greater long-term results [9, 10]. However, open hemorrhoidectomy, the standard treatment for haemorrhoids, is reportedly a painful process for a benign condition that necessitates a 2 to 3 days hospital stay, postoperative discomfort, and at least a one-month convalescence [11, 12]. A more recent procedure known as stapled haemorrhoidopexy marks a paradigm shift in haemorrhoid treatment [13]. However, it has generated interest as well as criticism [14]. Shorter operating times, less postoperative pain, earlier return to work, and higher patient satisfaction is all benefits of stapled hemorrhoidectomy [11, 12, 15–17].

OBJECTIVE OF THE STUDY

The purpose of this study was to evaluate the clinical characteristics, operating time, hospital stay, and postoperative complications of the two haemorrhoid surgery procedures: open hemorrhoidectomy and stapled haemorrhoidopexy.

MATERIALS AND METHODOLOGY

A retrospective cross-sectional study was carried out at the department of *Surgery* in Kumuduni Women's Medical College, Tangail from January 2020 to January 2021. The current study covered all 84 patients, 42 of which underwent open surgery and 42 of which underwent stapled treatment. Patients have been fully informed of the advantages and disadvantages of each approach. Significant grade III and grade IV haemorrhoids were included in the study's participants. Patients with gangrenous thrombosed piles, internal + external haemorrhoids, refusal to take part in the trial, comorbid illnesses, concurrent gastrointestinal issues, and those who were not physically capable of having the surgery were all excluded. Every case is reviewed following a detailed plan, or proforma, which contains information on the problem. In addition, a thorough history of the type and length of the complaints being presented, information about any prior treatments, a family history, a personal history, a physical examination, etc. Hb, TLC, DLC, urine recurring, X-ray chest, blood urea, blood sugar, and ECG tests were done to ascertain the patient's general health. The patients have been assigned to one of the treatment groups after the examination. Version 20 of SPSS was used for the statistical analysis. In order to compare the results between the groups, both parametric and non-parametric tests were performed. Means, standard deviation, unpaired student t-test and chi-square test were used to assess significance levels. A p-value less than 0.05 were regarded as indicating a significant difference.

RESULT

Table1: Age distribution of the study patients

Age (Years)	Stapled		Open		p-Value
	Frequency	Percentage	Frequency	Percentage	
20-30	9	21.4	10	23.8	
31-40	13	31.0	12	28.6	
41-50	15	35.7	13	31.0	
51-60	4	9.5	5	11.9	
61-70	1	2.4	2	4.8	
Mean ± SD	39.05±5.29		39.52±5.22		0.98

Out of 42 patients in the stapled haemorrhoidopexy group, 9 (21.4%) were in the age range of 20 to 30 years, 13 (30%), 31 to 40 years, 15 (35.7%), 41 to 50 years, 4 (9.5%), 51 to 60 years, and 12.4% in the age range of 61 to 70 years. 10 (23.8%) of the participants in the open hemorrhoidectomy group were in the 20–30 age range, 12 (28.6%) in the 31– 40

range, 13 (31%) in the 41–50 range, 5 (11.9%) in the 51–60 range, and 2 (4.8%) in the 60–70 range. The mean age of patients was 39.05±5.29 years for the stapled haemorrhoidopexy group and 39.52±5.22 years for the open hemorrhoidectomy group. The difference between the two groups was not statistically different (p-value = 0.98).

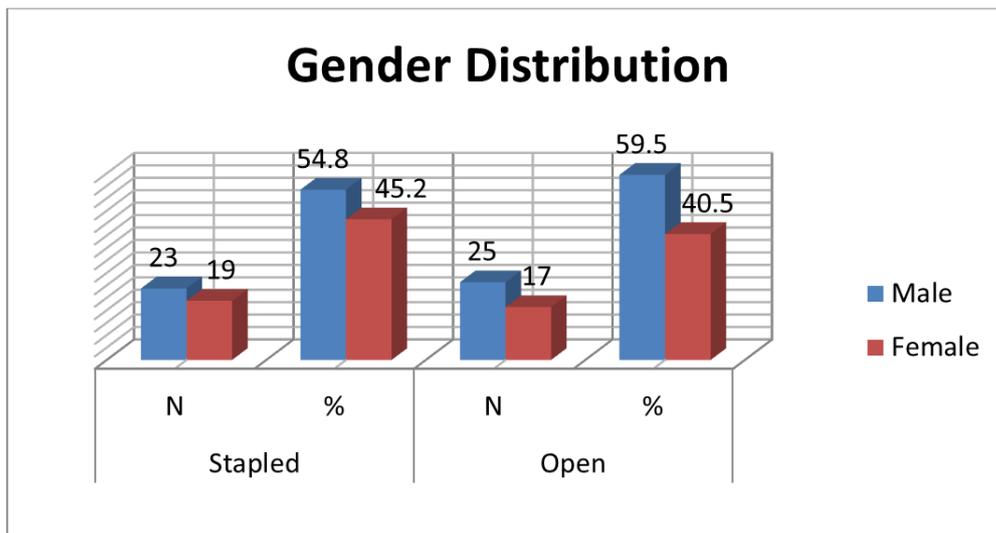


Figure 1: Gender distribution of the study patients

This figure shows the gender distribution of the study patients. Most 23(54.8%) participants were male and 19(45.2%) were female in the stapled group

whereas 25(59.5%) were male and 17(40.5%) were female in the open haemorrhoidectomy group.

Table 2: Clinical feature of the study patients

symptoms	Stapled		Open	
	Frequency	Percentage	Frequency	Percentage
Bleeding	12	28.6	13	31.0
Prolapse	20	47.6	22	52.4
Pain	10	23.8	11	26.2
Constipation	29	69.0	25	59.5
Grade				
III	20	47.6	23	54.8
IV	22	52.4	19	45.2

In this study, constipation was the most common symptom (69%) and was followed by haemorrhoids prolapse (47.6%), rectus bleeding (28.6%), and pain (23.8%) in the stapled hemorrhoidectomy group. whereas in the group of patients who had open hemorrhoidectomy, 59.5% of patients complained of constipation, 54.2% of prolapse,

31% of bleeding, and 26.2% complained of pain. 47.6% of patients had Grade III haemorrhoids in stapled haemorrhoidectomy and 54.8% in open hemorrhoidectomy groups, 52.4% had grade IV haemorrhoids in stapled haemorrhoidectomy and 45.2% in open hemorrhoidectomy groups.

Table 3: Comparison of the study patients according to Operative time and duration of hospital stay in days

variable	Stapled		Open		p-Value
	Mean	SD	Mean	SD	
Operation time(Minute)	38.21	8.96	49.12	6.46	0.86
Intraoperative bleeding (ml)	48.44	9.42	72.65	11.92	0.92
Duration of hospital stay					
<2	33	78.6	2	4.8	
2-4	9	21.4	31	73.8	
>4	0	0.0	9	21.4	
Mean ± SD	1.42±.94		3.3±2.9		0.001

The stapled hemorrhoidectomy group's mean ± SD of intraoperative bleeding was 48.44±9.42 ml, the average hospital stay was 1.42±.94 days, and the average surgical duration was 1.42±.94 minutes. The mean ± SD of intraoperative blood loss for the open

hemorrhoidectomy group was 72.65±11.92 ml, the mean hospital stay was 3.3±2.9 days, and the mean operational time and standard deviation were 49.12 ± 6.46 minutes.

Table 4: Comparison of two groups of patients according to Visual analogue scores (VAS)

Pain scores (VAS)	Stapled	Open	p-Value
6 hours	1.83±0.72	2.91±0.89	0.001
12 hours	1.88±0.63	2.22±0.84	0.043
24 hours	1.51±0.66	1.90±0.82	0.004

Patients' pain scores were kept below 3 throughout. At 6 hours, 12 hours, and 24 hours the pain

scores were considerably greater in the open group (p-value was 0.001, 0.043, 0.004 respectively).

Table 5: Comparison of two groups according to complications of the study patients

Variable	Stapled		Open		p-Value
	Frequency	Percentage	Frequency	Percentage	
Retention	7	16.7	13	31.0	0.091
Bleeding	6	14.3	9	21.4	0.331
Pain	13	31.0	24	57.1	0.004
Incontinence	0	0.0	2	4.8	0.435
Recurrence	1	0.0	4	9.5	0.322

No substantial postoperative issues were found during our examination. It was discovered that the open group had a higher rate of urine retention. Six (14.3%) patients in the stapled group experienced post-operative bleeding, compared to nine (21.4%) in the open group. In addition to 31% of patients in the stapled group,

57.1% of patients in the open group reported pain. Two patients in the open group reported incontinence to flatus and faeces and four patients developed recurrences but no incontinence was seen in the stapled group.

Table 6: Comparison of time taken to return to work in days in two groups of patients

Return to work in days	Stapled		Open		p-Value
	Frequency	Percentage	Frequency	Percentage	
<7days	20	47.6	0	0	
7-14 day	18	42.9	14	33.3	
>14days	4	9.5	28	66.7	
Mean ± SD	13.1	7.1	22.08	9.9	0.001

Comparing the number of days, it took for the two patient groups to continue work; it took 13.1±7.1 days for the stapled group and 22.08±9.9 days for the open group. 47.6% of the stapled group had returned to work at the end of the first week, and the rest by the end of the second. Only 4 patients require 16 days to return to work. In the open group, 33.3% of patients returned to work by 2 weeks and rest after 2 weeks.

DISCUSSION

This one-year-long hospital-based retrospective cross-sectional study was carried out in the general surgery department of Kumuduni Women's Medical College. In this retrospective research, the treatments of grade 3 and 4 haemorrhoids were compared between open hemorrhoidectomy and stapled haemorrhoidopexy. Our study included 84 patients who met the criteria and were having surgery for haemorrhoids. In our study, the group's mean and SD ages were 39.05± 5.29 and 39.52 ±5.22, respectively. The mean age of patients in the stapled and open groups in research by Shalaby R and Desoky A was 44.1± 3.2 and 49.1± 12.2 years, respectively [18]. The mean age in research by Khan NF *et al.*, was 40.7±11.6 years [19]. In the group receiving an open hemorrhoidectomy, there were 54.8% men and 45.2% women, while in the

group receiving a stapled haemorrhoidopexy, there were 59.5% men and 40.5% women. 47.6% of patients had Grade III haemorrhoids in stapled haemorrhoidopexy and 54.8% in open hemorrhoidectomy groups on the other hand 52.4% had grade IV haemorrhoids in stapled haemorrhoidopexy and 45.2% in open hemorrhoidectomy groups. The majority (53.3%) of patients in research by Khan NF *et al.*, had third-degree haemorrhoids [19]. In the stapled group, the mean SD operative time was 38.21± 8.96 min, whereas, in the open group, it was 49.12± 6.46 min. Operations time is not significantly longer in the stapled group (P=0.86). Similarly to this, Khan NF *et al.*, stated that there was no statistically significant difference between the open and stapled groups in terms of the average operating time [19, 20]. However, the studies by Tjandra JJ *et al.*, Stolfi *et al.*, and Hetzer FH *et al.*, found that the difference in operative time between the groups was statistically significant [16, 21, 22]. According to several other research, the open hemorrhoidectomy group's procedure time is 5 to 10 minutes longer [11, 12, 23, 24]. In this present study, Urinary retention, bleeding and pain were found to be higher in the open group. Two patients in the open group reported incontinence to flatus and faeces. No report of incontinence in the stapled group. According

to a Cochrane Database Systematic Review by Jayaraman S *et al.*, stapled haemorrhoidopexy is linked to a higher long-term risk of haemorrhoid recurrence and prolapse symptoms, even if treatment is associated with comparable short-term results [25]. Stapled haemorrhoidopexy is safe with many short-term benefits, according to a comprehensive review by Tjandra JJ, and the long-term outcomes are comparable to those of traditional surgery [21]. Stapled haemorrhoidopexy has been linked to decrease bleeding and less post-operative pain, according to Laughlan K *et al.*, but it also increases the risk of recurrent prolapse [26]. Using a visual analogue scale, postoperative pain was measured in this study (VAS). The objective was to maintain a sufficient level of analgesia with a VAS score below 3 according to the WHO classification (WHO). Using the VAS score as a basis, analgesics were given. The open group's pain scores were significantly greater at 6 hours, 12 hours and 24 hours (p-value was 0.001, 0.043, 0.004 respectively). Similar findings were reported by Tjandra JJ *et al.*, Laughlan K *et al.*, and Rowsell M *et al.*, [12, 21, 26] according to Stolfi *et al.*, In the first two surgical days, postoperative discomfort was similar [22]. Cheetham *et al.*, reported significantly more pain in the stapled group [27]. The low staple line was likely the cause of the pain. In this study, the stapled group's average hospital stay was 1.42±0.94 days, compared to 3.3±2.9 days for the open group. The Stapled group's hospital stay duration was significantly shorter (p-value 0.001). Our research confirms that patients undergoing stapled haemorrhoidopexy experience shorter hospital stays than those described by Tjandra JJ *et al.*, Laughlan K *et al.*, and Khan NF *et al.*, [19, 21, 26]. In the stapled group, it took less time to get back to work than in the open group (13.1±7.1 vs. 22.08±9.9). Similar results have been found in studies by Hetzer FH *et al.*, Khan NF *et al.*, Mehigan BJ *et al.*, and Rowsell M *et al.*, [11, 12, 16, 19].

CONCLUSION

In conclusion, this study reveals that stapled hemorrhoidopexy is preferable to open hemorrhoidectomy in terms of intraoperative and immediate postoperative issues, with an early return to normal activities. There are no recurrences, chronic prolapses, or incontinence in the stapled group. Thus, stapler haemorrhoidectomy rather than open hemorrhoidectomy may take the position of the gold standard for the treatment of second to third-degree haemorrhoids.

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