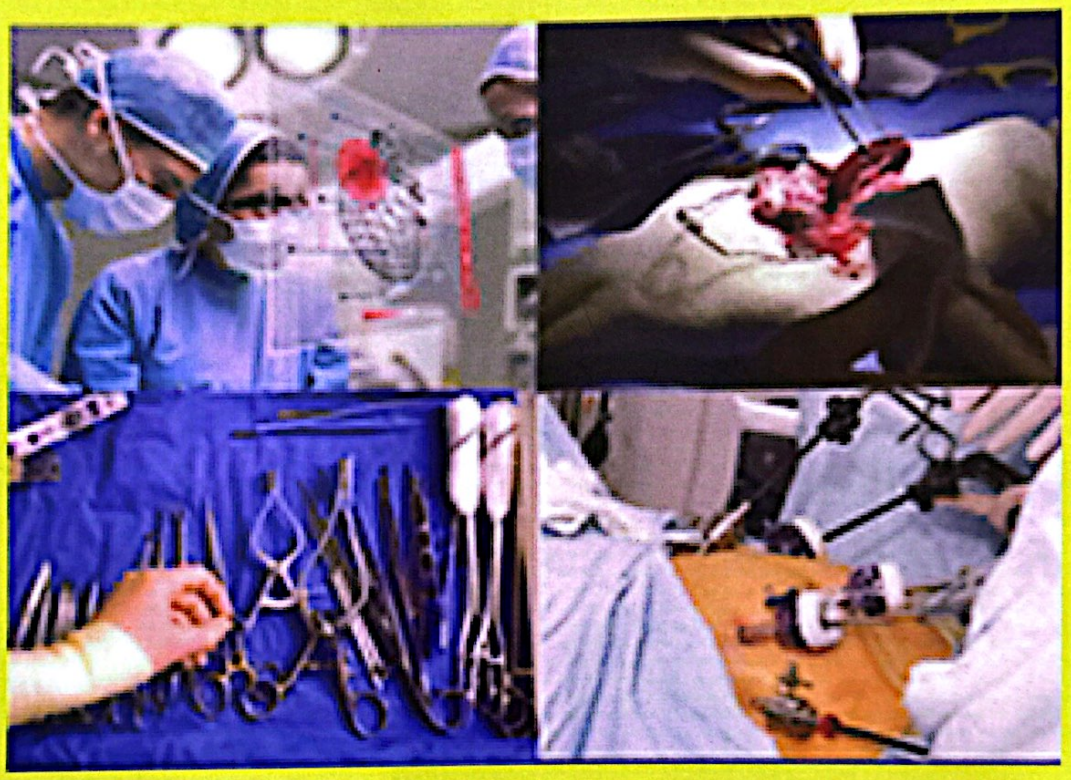
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A Comparison between Stapled Hemorrhoidopexy and Conventional Milligan Morgan Procedure in the Treatment of Hemorrhoids

Shafiquzzaman H. N[1*], Suman A. A[2], Akter S[3], Haque S[4], Ali S[5], Ahmed I[6]

[1]Dr. Habibun Nobi Md Shafiquzzaman, Assistant Professor, Department of Surgery, Rajshahi Medical College, Rajshahi, Bangladesh
[2]Dr. Ariful Alam Suman, Assistant Professor, Department of Colorectal Surgery, Rajshahi Medical College, Rajshahi, Bangladesh
[3]Dr. Salma Akter, Junior Consultant, Department of Gynaecology and Obstetrics, Adhunik Sadar Hospital, Natore, Bangladesh
[4]Dr. Md Shamsul Haque, Assistant Professor, Department of Surgery, Pabna Medical College Hospital, Pabna, Bangladesh
[5]Dr. Mohd. Shahjahan Ali, Assistant Professor, Department of Surgery, Rajshahi Medical College, Rajshahi, Bangladesh
[6]Dr. Istiak Ahmed, Registrar surgery, Rajshahi Medical College Hospital, Rajshahi, Bangladesh

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***Corresponding author:** Dr. Habibun Nobi Md. Shafiquzzaman
Assistant Professor, Department of Surgery, Rajshahi Medical College, Rajshahi, Bangladesh

Abstract **Original Research Article**

Background: Hemorrhoids is a very common anorectal condition distinct as the symptomatic enlargement and distal displacement of normal anal cushions. Several factors have been claimed to be associated with hemorrhoidal development, including prolonged straining and constipation. Several treatment methods along with the Milligan-Morgan procedure are applied in treating hemorrhoids. ***Aim of the study:*** The aim of this study was to compare the effectiveness and outcomes of stapled hemorrhoidopexy and conventional Milligan Morgan procedure in treating hemorrhoids. Methods: This comparative observational study was conducted at the Department of Surgery, Rajshahi Medical College, Rajshahi, Bangladesh during the period from January 2019 to December 2019. In total 100 patients with grade 3 or 4 hemorrhoids who fulfilled the criteria were included in the study subjects. In total 50 patients were denoted as group A patients who underwent stapled hemorrhoidopexy and the other 50 patients denoted as group B underwent conventional open (Milligan Morgan Procedure) hemorrhoidectomy. Patients were reviewed immediately after surgery and at 1, 3, 6 weeks, and 6 months post-operatively. All data were processed, analyzed, and disseminated by MS Office and SPSS programs as per need. ***Results:*** In this study, the mean ± (SD) duration of hospital stay was 2.88 ± 0.48 days in group B which was extremely significantly higher than that (1.77 ± 0.12 days) of group A (P <0.0001). After 6, 12 and 24 hours of surgery the pain scores in group A were significantly lower than those in group B (P-Values: 0.001, 0.005, and 0.014 respectively). The mean (±SD) patient satisfaction score was found extremely significantly higher in group A (4.13 ± 0.61) than that of group B (3.27 ± 0.57) where the P-value was <0.0001. The mean (±SD) 'time taken to return to work in days was found extremely significantly lower in group A (9.06 ± 2.43 days) than that of group B (16.66 ± 2.79 days) where the P-value was <0.0001. Conclusion: As per the findings of this study, we can conclude that stapled hemorrhoidopexy is a comparatively safer treatment method than open hemorrhoidectomy with many short-term as well as long-term benefits like shorter hospital stays, lower pain, and better patient satisfaction.

Keywords: Milligan Morgan, Conventional, Hemorrhoids, Stapled hemorrhoidopexy.

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1. INTRODUCTION

Hemorrhoids are a very common anorectal condition distinct as the symptomatic enlargement and distal displacement of normal anal cushions. Several treatment methods along with the Milligan-Morgan procedure are applied in treating hemorrhoids. Hemorrhoidal is an extremely regular anorectal problem, happens in around 5% of everybody, and more often in patients who are more established than 40 years [1, 2]. Several treatment methods are utilized in the treatment of hemorrhoidal ailment. Ferguson's shut hemorrhoidectomy and open Milligan-Morgan hemorrhoidectomy are randomly used for such purposes. Ordinary strategies integrate Ferguson's hemorrhoidectomy, as well as open Milligan-Morgan hemorrhoidectomy, which can be used with a surgical blade or electrocautery [3]. Traditionally third and forward leveled hemorrhoids are overseen by

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hemorrhoidectomy, where the prolapsing portions of the hemorrhoids are expelled and ligated at their base. Even two decades ago, this method was observed as the highest quality level in treating hemorrhoidal maladies [4]. On the other hand, stapled hemorrhoidopexy is a newer method that represents a paradigm change in the treatment arena of hemorrhoids [5]. However, it has been met with both skepticism and interest [6]. Stapled hemorrhoidectomy ensures better short-term outcomes, shorter operating times, early return to work, less postoperative pain, greater patient satisfaction [7]. In a study they claimed, patients undergoing stapled hemorrhoidopexy had reduced, hospital stay, postoperative pain, analgesic requirements and returned earlier to work [2-5].

2. METHODOLOGY

This comparative observational study was conducted at the Department of Surgery, Rajshahi Medical College, Rajshahi, Bangladesh during the period from January 2019 to December 2019. In total 100 patients with grade 3 or 4 hemorrhoids who fulfilled the criteria were included in the study subjects. In total 50 patients were denoted as group A patients who underwent stapled hemorrhoidopexy and the other 50 patients denoted as group B underwent conventional open (Milligan Morgan Procedure) hemorrhoidectomy. Data was collected by using a predesigned proforma. According to the exclusion criteria of this study, cases with acute hemorrhoidal episodes with thrombosis, with prior hemorrhoidectomy patients with intercurrent anal pathology like fistula anal fissure, prolapse of single anal cushion, and anal stenosis. All the patients were clinically assessed and routine laboratory diagnoses were done preoperatively. As per the guidelines of the French Anaesthesia Society, post-operative pain was managed. The pain was assessed by VAS (Visual analog scale) where a score of 0 represented no pain and a score of 10 represented the worst pain. The pain scores were recorded 6 hourlies during the first postoperative day, at the time of first motion, and daily until the end of the first week. The target of the treatment procedure was to keep the VAS (Visual analog scale) score <5 with adequate analgesia. Besides analgesics, patients were advised proper antibiotics in oral form, metronidazole 400 mg thrice daily and syrup lactulose 20 ml at bedtime for at least two weeks. Patients undergoing the open hemorrhoidectomy were also advised Sitz bath twice a day for two weeks. All the patients were reviewed one week after surgery. Patients were also reviewed at 1 week and 3 weeks and between 6-10 weeks postoperatively. On the follow-up, all the patients were asked to rate in controlling their symptoms, degree of continence to flatus and/or feces, duration of returning to their normal activities, and any other problems they had. The outcome measures were postoperative pain, operative time, analgesia requirement, hospital stay, continence, patient, complications, and satisfaction. All data were processed, analyzed, and disseminated by MS Office and SPSS programs as per need. Significance was assessed at a 5% level of significance.

3. RESULT

In this study, most of the patients were from the 21-50 years, age group. In group A, 56% of participants were male whereas the rest 44% were female. On the other hand, in group B, 52% of participants were male whereas the rest 48% were female. As per the grade of hemorrhoids distribution we observed, in group A, 44% of patients were with grade 3 and the rest 56% were with grade 4 hemorrhoids. On the other hand, in group B, 48% of patients were with grade 3 and the rest 52% were with grade 4 hemorrhoids. As per the immediate post-operative findings among the participants we observed that the frequencies of Bleeding, supportive stitch, and residual prolapse were higher in group B than those in group A. In group A, those signs were found among 16%, 12%, and 4% respectively whereas the frequencies were found as 24%, 20%, and 28% respectively in group B. In this study, the mean ± (SD) duration of hospital stay was 2.88 ± 0.48 days in group B which was extremely significantly higher than that (1.77 ± 0.12 days) of group A and the P-value was found <0.0001. After 6 hours of surgery, the mean (±SD) pain score was 2.07 ± 0.68 in group A, 2.81 ± 0.82 in group B and the P-Value was 0.001. After 12 hours of surgery, the mean (±SD) pain score was 1.83 ± 0.66 in group A, 2.43 ± 0.79 in group B and the P-Value was 0.005. After 24 hours of surgery, the mean (±SD) pain score was 1.39 ± 0.57 in group A, 1.88 ± 0.77 in group B and the P-Value was 0.014. So, after 6, 12, and 24 hours of surgery the pain scores of group A patients were significantly lower than those in group B (P-Values: 0.001, 0.005, and 0.014 respectively). In analyzing the postoperative complications in two groups of patients it was observed that the frequencies of retention, bleeding, pain, anal tags, incontinence, and anal stenosis were lower among group A patients than those in group B. In this study, as final outcomes, the mean (±SD) patient satisfaction score was found extremely significantly higher in group A (4.13 ± 0.61) than that of group B (3.27 ± 0.57) where the P-Value was <0.0001. Besides this, the mean (±SD) 'time taken to return to work in days was found extremely significantly lower in group A (9.06 ± 2.43 days) than that of group B (16.66 ± 2.79 days) where the P-Value was <0.0001.

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Table 1: General characteristics of the participants (N=100)

Variables	Group A (n=50)		Group B (n=50)		Total (n=100)	
	n	%	n	%	n	%
Age distribution						
21-30	10	20	6	12	16	16
31-40	14	28	12	24	26	26
41-50	16	32	18	36	34	34
51-60	6	12	10	20	16	16
>60	4	8	4	8	8	8
Total	50	100	50	100	100	100
Gender distribution						
Male	25	56	26	52	54	54
Female	22	44	24	48	46	46
Grade of hemorrhoids distribution						
Grade 3	22	44	24	48	46	46
Grade 4	28	56	26	52	54	54

Table 2: Immediate post-operative findings among the participants (N=100)

Findings	Group A (n=50)		Group B (n=50)		Total (n=100)	
	n	%	n	%	n	%
Bleeding	8	16	12	24	20	20
Supportive stitch	6	12	10	20	16	16
Residual prolapse	2	4	14	28	16	16

Table 3: Comparison of duration of hospital stay in days (N=100)

Days	Group A (n=50)		Group B (n=50)	
	n	%	n	%
<2	40	80	6	12
2-4	8	16	32	64
>4	2	4	12	24
Mean ± (SD)	1.77 ± 0.12		2.88 ± 0.48	
P-Value	<0.0001			

Table 4: Comparison of pain scores in two groups of patients (N=100)

VAS scores	Group A	Group B	P-value
6 hours	2.07 ± 0.68	2.81 ± 0.82	0.001
12 hours	1.83 ± 0.66	2.43 ± 0.79	0.005
24 hours	1.39 ± 0.57	1.88 ± 0.77	0.014

Table 5: Comparison of complications in two groups of patients (N=50)

Complications	Group A		Group B	
	n	%	n	%
Retention	4	8	8	16
Bleeding	3	6	6	12
Pain	1	2	6	12
Anal tags	2	4	6	12
Incontinence	1	2	3	6
Anal stenosis	1	2	4	8

Table 6: Final outcomes regarding patient's satisfaction and return time to work in days (N=100)

Outcomes	Group A		Group B		P-Value
	n	%	n	%	
Patient satisfaction score					
Mean ± SD	4.13 ± 0.61		3.27 ± 0.57		<0.0001
Time taken to return to work					
Mean ± SD	9.06 ± 2.43		16.66 ± 2.79		<0.0001

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4. DISCUSSION

The aim of this study was to compare the effectiveness and outcomes of stapled hemorrhoidopexy and conventional Milligan Morgan procedure in treating hemorrhoids. In total 50 patients with grade 3 or 4 hemorrhoids who fulfilled the criteria were included in the study subjects. In total 25 patients denoted as group A, patients underwent stapled hemorrhoidopexy and the other 25 patients denoted as group B underwent conventional open (Milligan Morgan Procedure) hemorrhoidectomy. In our study, most of the patients were from the 21-50 years age group. In a study (By Shalaby R and Desoky A), the mean (SD) age of participants in the stapled and open groups was 44.1 (3.2) and 49.1 (12.2) years respectively [9]. In another study conducted by Khan NF et al., the mean age was 40.7 ± 11.6 years [10]. In our study, in group A, 56% of participants were male whereas the rest 44% were female. On the other hand, in group B, 52% of participants were male whereas the rest 48% were female. As per the grade of hemorrhoids distribution we observed, in group A, 44% of patients were with grade 3 and the rest 56% were with grade 4 hemorrhoids. On the other hand, in group B, 48% of patients were with grade 3 and the rest 52% were with grade 4 hemorrhoids. In a study conducted by Khan NF *et al.*, a majority (53.3%) of patients had third-degree hemorrhoids [10]. Jayaraman S *et al.*, did a Cochrane Database Systematic review on only Stapled versus conventional surgery for hemorrhoids as well as noted that, though associated with comparable short-term results, 'stapled hemorrhoidopexy' is associated with a higher and long-term risk of hemorrhoid recurrence as well as the symptom of prolapse [11]. In a review study by Tjandra JJ, Chan MK stated that 'stapled hemorrhoidopexy' is safe with many short-term benefits, as well as long-term results, which are similar to conventional procedures [12]. In another study Laughlan K et al., reported, stapled hemorrhoidopexy is associated with reduced post-operative pain as well as less bleeding but an increased rate of recurrent prolapse [13]. In our study, as per the immediate post-operative findings among the participants, we observed that the frequencies of Bleeding, supportive stitch, and residual prolapse were higher in group B than those in group A. In group A, those signs were found among 16%, 12%, and 4% respectively whereas the frequencies were found as 24%, 20%, and 28% respectively in group B. In this study, the mean ± (SD) duration of hospital stay was 2.88 ± 0.48 days in group B which was extremely significantly higher than that (1.77 ± 0.12 days) of group A and the P-Value was found <0.0001. After 6 hours of surgery, the mean (±SD) pain score was 2.07 ± 0.68 in group A, 2.81 ± 0.82 in group B and the P-Value was 0.001. After 12 hours of surgery, the mean (±SD) pain score was 1.83 ± 0.66 in group A, 2.43 ± 0.79 in group B and the P-Value was 0.005. After 24 hours of surgery, the mean (±SD) pain score was 1.39 ± 0.57 in group A, 1.88 ± 0.77 in group B and the P-Value was 0.014. So, after 6, 12, and 24 hours of surgery the pain scores of group A patients were significantly lower than those in group B (P-Values: 0.001, 0.005, and 0.014 respectively). Tjandra JJ *et al.*, Laughlan K *et al.*, and Rowsell M *et al.*, reported similar findings [14]. Stolfi *et al.*, reported, postoperative pain on the first two postoperative days was similar [15]. On the other hand, Cheetham *et al.*, reported significantly more pain in the stapled group [16]. In this study, analyzing the postoperative complications in two groups of patients it was observed that, the frequencies of retention, bleeding, pain, anal tags, incontinence, and anal stenosis were lower among group A patients than those in group B. In this study, as final outcomes the mean (±SD) patient satisfaction score was found extremely significantly higher in group A (4.13 ± 0.61) than that of group B (3.27 ± 0.57) where the P-Value was <0.0001. Besides this, the mean (±SD) 'time taken to return to work in the day' was found extremely significantly lower in group A (9.06 ± 2.43 days) than that of group B (16.66 ± 2.79 days) where the P-Value was <0.0001. The time taken for return to work was also shorter in the stapled group as compared to the open group. Studies by Hetzer FH *et al.*, Khan NF *et al.*, Mehigan BJ *et al.*, and Rowsell M et al have reported similar findings [17].

Limitation of the study

This was a single-centered study with a small-sized sample. So, the findings of this study may not reflect the exact scenario of the whole country.

5. CONCLUSION & RECOMMENDATION

As per the findings of this study, we can conclude that stapled hemorrhoidopexy is a comparatively safer treatment method than open hemorrhoidectomy with many short-term as well as long-term benefits like shorter hospital stays, lower pain, and better patient satisfaction. For getting more specific information regarding this issue we would like to recommend conducting more studies in several places with larger-sized samples.

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