

The Safety, Efficacy, Patient Satisfaction and the Outcome of the Stapled Hemorrhoidectomy in the Bangabandhu Sheikh Mujib Medical University, Bangladesh

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Abstract

Original Research Article

Background: Hemorrhoid is a common disease in our country. But its conventional surgical treatment is associated with severe pain and open wound for a long time. Patients are very much frightened to undergo this kind of operation. A new method of hemorrhoid operation i.e. stapled Hemorrhoidectomy does not involve excision of the hemorrhoid and is thereby expected to have less pain and no open wound. **Aim of the study:** The aim of the study is to investigate the safety, efficacy, patient satisfaction, and outcome of the stapled hemorrhoidectomy operation in the Bangabandhu Sheikh Mujib Medical University, Bangladesh, and different private hospitals in Dhaka city. **Methods:** 50 patients were selected randomly who were admitted to Bangabandhu Sheikh Mujib Medical University, Bangladesh, and different private hospitals in Dhaka city. They were evaluated by short history, clinical examination, and appropriate investigations. With adequate preoperative preparation, they underwent Stapled Hemorrhoidectomy. They were followed up postoperatively and for 2 months after the operation. **Results:** 38 patients left the hospital within 36 hours of operation, 6 patients stayed for 4 days, 4 patients for 6 days, and only 2 patients stayed for more than 5 days. 1 patient had 2nd-degree hemorrhoid, 44 had 3rd hemorrhoid and 5 had 4th-degree hemorrhoid the average operating time was 25.30 minutes. The highest time required was 45 minutes and the slowest time was 20 minutes. Initial postoperative pain was common but it didn't continue for more than 24 hours, only 3 patients complained of occasional pain after discharge. 48 patients had complete relief of symptoms and 2 had a small residual lump. The urgency of defecation was complained about by 5, which subsided with time. No other serious complications like infection or sphincter damage were seen. 49 patients had full satisfaction during follow-up. **Conclusion:** Stapled Hemorrhoidectomy is associated with significantly less pain immediate postoperative period and also restored surgical anatomy to normal. It has few complications and patients' compliance is high.

Keywords: Hemorrhoid, Hemorrhoidectomy, Stapled Hemorrhoidectomy.

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INTRODUCTION

Hemorrhoids have been described since the beginning of medical history. The first known documentation is from around 2250 BC in the Code of King Hammurabi in Babylon where symptoms of hemorrhoids are described. The first topical treatment is described in an Egyptian papyrus in 1700 BC and the first surgical excision is described by Hippocrates in the Hippocratic treatises in 460 BC [1]. The word hemorrhoid is derived from ancient Greek (haima = blood and rrhein = flowing). It is said that the French emperor, Napoleon Bonaparte suffered from hemorrhoids. At the battle of Waterloo Napoleon had difficulties riding his horse and spent most of the time

in bed. When he walked around it was noted that he walked with difficulties with the legs spread apart. Historians mean that this "crise hemorrhoidaire" impaired his battlefield conduct and made him lose the battle [2]. Hemorrhoids are dilated veins occurring in relation to the anal canal also known as piles. Hemorrhoids are a common disease in the western world and Asian populations. The incidence is estimated at 8%, and the prevalence at 10%. The male: female ratio is 1:4 [3]. They affect people of any age and gender, and most commonly occur between the ages of 45 and 65 years. It is estimated that at least 50% of individuals over 50 years of age have at some time experienced symptoms related to Hemorrhoids [4]. Hemorrhoids develop from engorgement and prolapse

the of submucosal anal cushion, which is composed of an interlacing arterio-venous hemorrhoidal plexus, supported by connective tissue and minute muscle fibers [5]. The bulk of the anal cushion is located above the dentate line, which is devoid of sensation. The pressure within the anal cushion contributes to approximately 15 percent of perfect anal continence [6]. It is reported that continence disturbance co-exists in 40 percent of patients with haemorrhoids [7] and disrupting the anal cushion during hemorrhoid treatment may further worsen it.

The hemorrhoidal disease is common, but there is still no consensus on optimal treatment. The most appropriate treatment is tailored to the individual patient [8]. Treatments include conservative management; non-excisional interventions; and surgical hemorrhoidectomy. Hemorrhoidectomy is typically used when conservative management or non-excisional interventions fail [9]. A range of techniques are used including Milligan-Morgan, Ferguson, Parks, Fansler-Arnold, and Fansler-Anderson; Milligan-Morgan is most commonly used. But pain and prolonged postoperative recovery following excisional hemorrhoidectomy has motivated surgeons to search for alternative methods of treating patients with symptomatic hemorrhoidal disease. Although hemorrhoidal disease is a benign condition. The related symptoms such as prolapse, bleeding, lump development, itching, and burning sensation sometimes bother patients seriously and may be intolerable. The disease can be life-threatening when it becomes gangrenous. It is estimated that at least 50% of individuals over 50 years of age have at some time experienced symptoms related to hemorrhoids. Surgical ablation is the preferred method for treating prolapsed hemorrhoids. Postoperative pain is the most common morbidity among others, such as bleeding, urinary retention, and stool impaction. In an attempt to minimize postoperative pain, in 1993, Antonio Longo [11], Department of Surgery, University of Palermo, Italy, devised a surgical technique for hemorrhoids by reducing the anal mucosal prolapse by means of a circular stapler in which a circumferential portion of the mucosa is excised above the dentate line by a stapling instrument which is called stapled hemorrhoidectomy (SH). This is also known as stapled hemorrhoidopexy, circumferential mucosectomy, Longo operation, and stapled apoplexy. Researchers have compared this operation with the older ways of removing hemorrhoids. One summary of the research is that people who had an operation using staples were able to go home from the hospital sooner than those having other hemorrhoid operations [6]. Recently, it has been demonstrated that surgical treatment of hemorrhoids on a day-care basis is possible and safe [10]. The pain after stapled hemorrhoidectomy was low, recovery was rapid, complications were few, and the patient was high [6]. Longo's technique of stapled Satisfaction hemorrhoidectomy has revolutionized the management

of symptomatic hemorrhoids. However, several problems have been identified in the original Longo technique. In the particular, recurrence of hemorrhoidal tissue has been found to be significantly higher and some disadvantages in the risk of intervention were greatest during the first year after a stapled hemorrhoidectomy and its cost [5].

In our country, a significant number of patients were suffering from hemorrhoid diseases. But people have an old belief that hemorrhoid diseases cannot be successfully treated by operation. But with the development of treatments and consciousness among the people, they rush to take appropriate treatment for hemorrhoid diseases. In our country sclerotherapy, rubber band ligation, and open hemorrhoidectomy is being practiced for a long time [11]. There is a great demand by the patient that the hemorrhoid treatment should be painless and must be a complete cure. But conventional hemorrhoidectomy is attended with severe pain, postoperative bleeding, pruritus, open wound, and longtime absence from work. In the backdrop of this situation stapled hemorrhoidectomy has been introduced in parts of the world as well as in our country. The aim of the study is to investigate the safety, efficacy, patient satisfaction, and outcome of the stapled hemorrhoidectomy operation in the Bangabandhu Sheikh Mujib Medical University, Bangladesh, and different private hospitals in Dhaka city.

General Objective

To investigate the safety, efficacy, patient satisfaction, and the outcome of the stapled hemorrhoidectomy operation in the Bangabandhu Sheikh Mujib Medical University, Bangladesh.

Specific Objectives

- To investigate the relief of the symptoms after performing Stapled Hemorrhoidectomy.
- To observe Intra and postoperative bleeding after stapled Hemorrhoidectomy.
- To calculate the period of the hospital stay and return to normal activity after performing stapled Haemorrh dectomy.
- To observe patient satisfaction after stapled hemorrhoidectomy.
- To observe the early complications of stapled hemorrhoidectomy.

METHODS

This is a prospective observational study, conducted from 1st September 2007 to 31st August 2008, a period of twelve months. This study was carried out at Bangabandhu Sheikh Mujib Medical University, Bangladesh, and different private hospitals in Dhaka city. The patients were admitted through There are 50 patients in this study, who were selected randomly irrespective of age, sex, height, nutritional conditions, socio-economic status, and who presented with per

rectal bleeding, palpable lump after defecation, pruritus ani, and mucous discharge. Patients who presented with other rectal anal and perianal discharge for example fistula, fissure, carcinoma of rectum, abscess, and complication of hemorrhoids were excluded. In each case, information was obtained in a pre-formed questionnaire. A detailed history of bleeding was also taken including its period, frequency, character, amount, etc. Each case was then thoroughly examined including general examination, digital rectal examination, and proctoscopy examination. Those who were second, third and fourth-degree hemorrhoids were planned for Stapled Hemorrhoidectomy. Investigations were done for anesthetic fitness. After counseling informed consent was taken. All of the operations were done by high-quality surgeons and in several operations, I assisted and observed. They were followed up postoperatively regarding urinary retention, bleeding, anal pain, and any other complications. Clinical evaluations, including complete proctologic examination, were routinely repeated at postoperative follow-up on 5 to 7 days, 3 weeks, and 2 months after surgery. At the time of postoperative visits, patients were examined and questioned about hemorrhoid symptoms and bowel habits as well as feelings of satisfaction, improved quality of life, and any other complaints through a detailed history, digital rectal examination (DRE), and proctoscopy examination. It was made up to two months.

Inclusion Criteria

Patients with second-degree, third-degree, and 4th-degree hemorrhoids.

Exclusion Criteria

Patients with fistula, fissure, carcinoma rectum, abscess, and complications of hemorrhoids.

Stapled Hemorrhoidectomy (Longo)

In 1998, Longo described a conceptually new technique for hemorrhoid surgery.' The new concept was based on the lining and sliding theory for the pathogenesis of the disease. The procedure, unlike the conventional methods, aims to restore the anal anatomy by anchoring the cushions in their normal position rather than excising the piles. Using a circular stapler device, a circumferential excision of redundant rectal mucosa above the cushions is made (polypectomy). The mucosal anastomosis is targeted at 2 cm above the dentate line 22-24. A higher or lower staple line affects the outcome in various ways 25-27. The mucosal anastomosis is proposed to re-anchor the cushions to the rectal wall.

Data Analysis

The study coordinators performed random checks to verify data collection processes. Completed data forms were reviewed, edited, and processed for computer data entry. Frequencies and percentages were used for descriptive analysis. The data analysis was

performed using Statistical Package for the Social Sciences (SPSS) Version 25.0.

RESULTS

Among the study population (N=50), 45(90%) patients were male and 5(10%) were female. Male to female ratio was 9:1 (Table I). The maximum number of patients was in the age group 41-50 years (50%). The mean age was 42.35 years. The age range was 18-85 years (Table- II). Out of 50 cases, 15(30%) belonged to the upper class, 28 (56%) to upper-middle-class, and 7(14%) to middle-class families. Incidence was more in the upper-middle class (Table III). 39(78%) had constipation, 6(12%) had both constipation and ingestion of spicy food, 4(8%) had a pregnancy, and 1(2%) had no risk factors (Table IV). 44(88%) patients complained of bleeding per rectum; 42(84%) symptomatic prolapse; 24(48%) had pruritus; 19(38%) had pain; 2(4%) patients presented with severe anemia, requiring blood transfusion, before operation (Table V). 44(88%) patients had 3rd degree, 5(10%) had 4th degree and 1(2%) patients had 2nd-degree hemorrhoids (Table VI). While digital rectal examination (DRE) was conducted, in 18 (36%) patients, there was no blood in the index finger, in 2(4%) patients, the examination was painful, and in 20(40%) patients both discharge and tenderness were found, remaining 10(20%) patients had normal DRE (Table VII). Table VIII showing 68% of patients had per rectal bleeding during the defecation. The average time for the whole series was 19.30 minutes. The Highest time required was 24 minutes and the slowest time was 15 minutes (Table IX). Table X shows the average time for the whole series was 19 minutes 30 seconds. The highest time required was 24 minutes and the slowest time was 15 minutes. Restoration of surgical anatomy in 46(92%), 3(6%) complained of some residual lump and 1(2%) complained of definitive protrusion of single hemorrhoid. Post-operative complications were developed in 32% of patients (Table XI). 38(76%) patients stayed for 2 days, 6(12%) patients stayed for 3 days, 4(8%) stayed for 4 days, and 2(4%) stayed for 5 days in the hospital after the operation (Table XII). 42 patients had complete relief of symptoms. 2 patients had small residual skin tags and 2 patients had anal bleeding on the first postoperative follow-up visit. The remaining 4 (8%) patients could not be followed up because they did not attain post-operative follow-up. 44 patients had complete relief of symptoms and 2 patients had small residual skin tags, remaining 4(8%) patients could not be followed up because they were not available (Table XIV and Table V)). 6(12%) patients return to work within 3-5 days, 30(60%) within 6-10 days. 10(20%) return to work within 11-15 days. The remaining 4(8%) patients could not be followed up because they were not available (Table XVI). 45(90%) patients are completely satisfied. Moreover, 1(2%) patients are not satisfied with the operation. The remaining 4(8%) patients could not be followed up because they were not available (XVII).

Table I: Distribution of Study Population Based on Sex incidence (N=50)

Sex	Frequency (N)	Percentage (%)
Male	45	90
Female	05	10

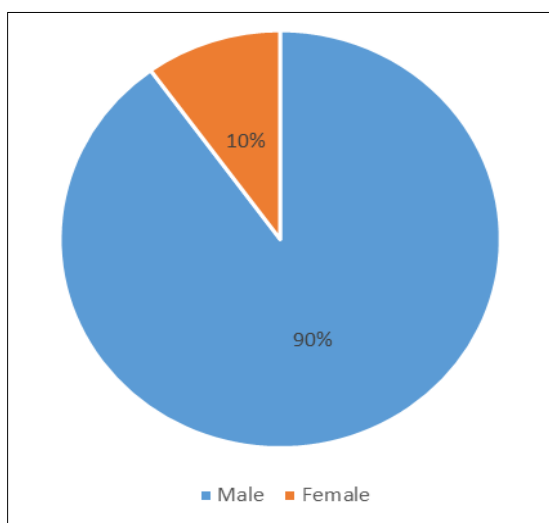


Fig 1: Distribution of Study Population Based on Sex (N=50)

Table- II Distribution of Study Population Based on Age Distribution (N=50)

Age group	Frequency (N)	Percentage (%)
11-20	1	2
21-30	2	4
31-40	10	20
41-50	25	50
51-60	8	16
61-70	3	6
71-80	1	2
>80	0	0

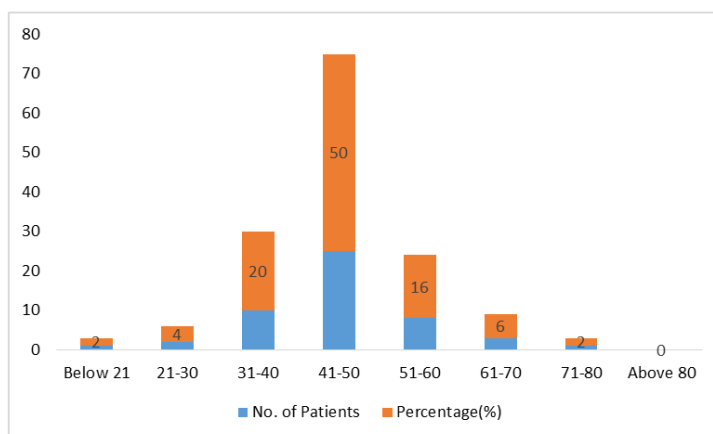


Fig 2: Distribution of Study Population Based on Age Distribution (N=50)

Table III: Distribution of Study Population Based on Socioeconomic Status (N=50)

Socio-economic condition	Frequency (N)	Percentage (%)
Upper class	15	30
Upper middle class	28	56
Middle class	7	14
Poor class	0	0

Table IV: Distribution of Study Population Based on Risk Factors of Hemorrhoids (N=50)

Risk factors	Frequency (N)	Percentage
Constipation	39	78
Constipation and spice food	6	12
Pregnancy	4	8
No risk factors	1	2

Table V: Presenting Complaints of Study Population (N=50)

Symptoms	Frequency (N)	Percentage (%)
Bleeding per rectum	44	88
Symptomatic prolapse	42	84
Pruritus	24	48
Pain	19	38
Severe anemia requiring blood transfusion	2	4

Table VI: Degree of Hemorrhoids (N=50)

Degree	Frequency (N)	Percentage (%)
2 nd degree	1	2
3 rd degree	44	88
4 th degree	5	10

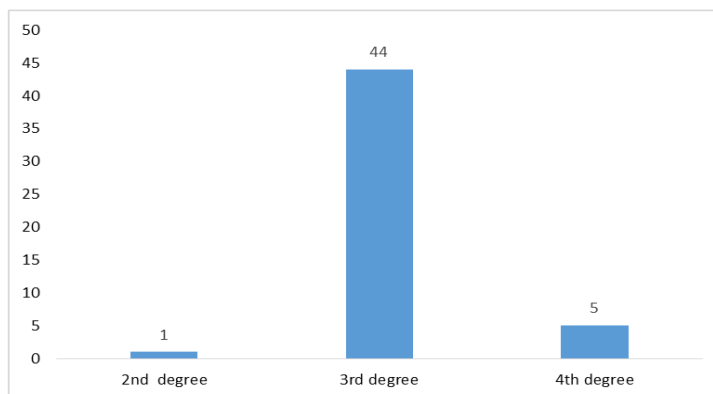


Fig 3: Distribution of study Population Based on Degree of Hemorrhoids (N=50)

Table VII: Distribution of Study Population Based on Findings of Digital rectal examination (on admission) (N=50)

Examination findings	Frequency (N)	Percentage (%)
Normal	10	20
Discharge	18	36
Tender	2	4
Both discharge and tender	20	40

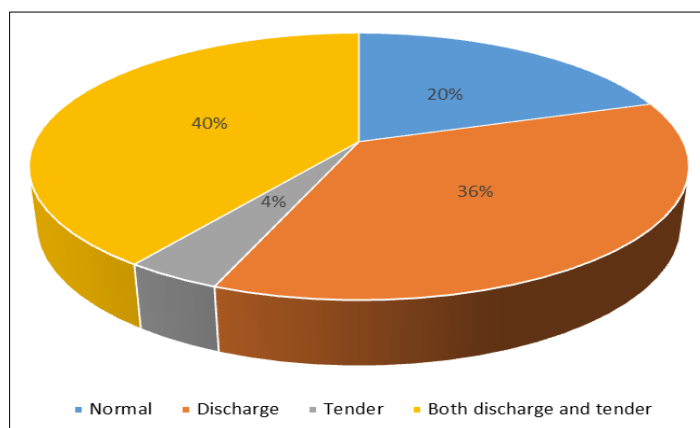


Fig 4: Distribution of Study Population Based on Findings of Digital rectal examination (on admission) (N=50)

Table VIII: Distribution of Study Population-based on per rectal bleedings (N=50)

Per-rectal Bleeding	Frequency (N)	No patients a (postoperative)
During defecation	34	68
During micturition	6	12
Irrespective of defecation	4	8
No bleeding	6	12

Table IX: Operation time (From field preparation to dressing application) (N=50)

Average time of operation (Minutes)	Highest time (Minutes)	Lowest time (Minutes)
19.30	24	15

Table X: Operation time (From field preparation to dressing application) (N=50)

Average time of operation (Minutes)	Highest time (Minutes)	Lowest time (Minutes)
19.30	24	15

Table XI: Restoration of surgical anatomy after the operation (n=50)

Complete restoration of Anatomy	Residual lump	Protrusion of single
46 (92%)	3(6%)	1 (2)

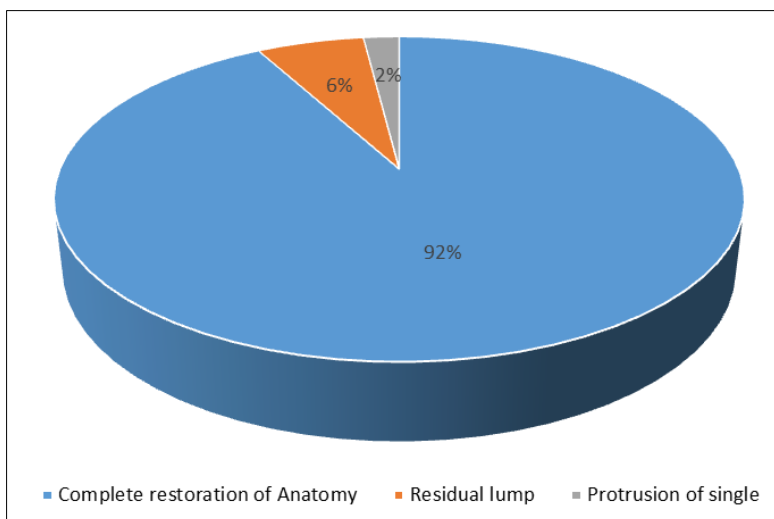


Fig 5: Distribution of study Population Based on Surgical Anatomy after the operation (N=50)

Table XII: The postoperative complication of stapled Hemorrhoidectomy (n=50)

Complications	Frequency (N)	Percentage (%)
Urgency of defecation	5	10
Urinary retention	8	16
Anal stenosis	0	0
Anal pain	2	4
Reactionary Hemorrhage	3	6
Pelvic cellulitis, tetanus	0	0
No complication	32	64

Table XIII: Duration of hospital stay (postoperative)

2 days	3 days	4 days	5 days
38 (76%)	6 (12%)	4 (8%)	2(4%)

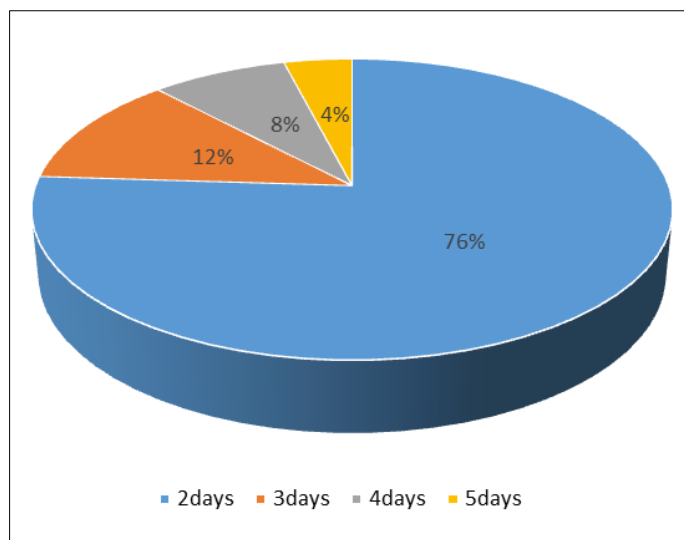


Fig 5: Distribution of study Population Based on Hospital stay (N=50)

Table XVI: 1st follow-up findings of stapled Hemorrhoidectomy (N=50)

Results	Frequency(N)	Percentage
Complete relief Of symptoms	42	84
Anal bleeding	2	4
Residual skin tag	2	4

Table XV: Outcome of stapled Hemorrhoidectomy (after 2 months) (N=50)

Results	Frequency(N)	Percentage
Complete relief of symptoms	44	88
Residual external skin tag	2	4
Lost to follow-up	4	8

Table XVI: Required time return to work (N=50)

Time	Frequency	Percentage
3-5	6	12
6-10	30	60
11-15	10	20

Table XVII: Patients satisfaction (N=50)

Patients satisfaction	Frequency(N)	Percentage
Have complete satisfaction	45	90
Not satisfied	01	02
Lost to follow-up	4	8

DISCUSSION

In this study, the male-to-female ratio was 9:1 compared with a study from São Paulo University Medical School, São Paulo, Brazil in which it was 1.68:1 [12]. In this study, ages ranged from 18 years to 85 years. Maximum patients were in the age group 41-50 years (50%). The mean age was 42.35 years. This finding when compared with another study, found average age was 39.5 years (range 21-67 years) [12]. In this study, 15(30%) belonged to the upper class, 28(56%) to upper-middle-class, 7(14%) to middle-class families. Incidence was more in the upper-middle class. The community-wide prevalence of hemorrhoid in the United States is associated with higher socioeconomic

status, but this association may reflect differences in health-seeking behavior rather than true prevalence [7].

In the present study, 39(78%) had constipation, 6(12%) had both constipation and ingestion of spicy food, 4 (8%) had a pregnancy, and 1(2%) had no risk factors. In this study, 44 (88%) patients complained of bleeding per rectum; 42(84%) had symptomatic prolapse; 24(48%) had pruritus; 19(38%) had pain; 2(4%) patients presented with severe anemia, requiring blood transfusion, before operation. In this study, 44(88%) patients had 3rd degree, 5(10%) had 4th degree and 1(2%) patient had 2nd-degree hemorrhoids. In the current study, the average time for performing of operation was 19.30 minutes. The highest time required was 24 minutes and the lowest time was 15 minutes.

This study when compared with a study from São Paulo University Medical School, São Paulo, Brazil it was found mean operative time was 23 minutes (16 to 48 minutes) [12]. In the present study, as in most other studies [13-23], more rapidly surgical procedure was completed. Restoration of surgical anatomy after stapled hemorrhoidectomy in 46 patients (92%). 3(6%) complained of some residual lump and 1(2%) complained of definitive protrusion of a single hemorrhoid. When compared with a study from São Paulo University Medical School, São Paulo, Brazil it was found restoration of anatomy, 94%, and 6% had small residual prolapsed mucosa [12]. In this study, 5(10%) have urgency of defecation, 8 (16%) have urinary retention, hemorrhage 3(6%), 2(4%) have anal pain immediately after operation; No patients have pelvic cellulitis, tetanus or anal stenosis. In comparison to the study from São Paulo University Medical School, São Paulo, Brazil it was found that 3.9% of patients had urinary retention required catheterization, pain in 23.8% of patients and 7.2% of patients had a reactionary hemorrhage [12].

In this study, it was found that after stapled hemorrhoidectomy postoperative pain was significantly less. But only 2 of them complained of pain, especially after defecation. Oral analgesics required were prescribed as and when necessary.

In the study, 38 (76%) stayed for 2 days, 6(12%) stayed for 3 days, 4(8%) stayed for 4 days, and 2(4%) stayed for 5 days in the hospital. It was found that 6(12%) patients returned to work within 3-5 days, 30(60%) within 6-10 days and 10(20%) returned to work within 11-15 days after stapled hemorrhoidectomy. The mean duration of resumption to work was 8.33 days (range 3-15 days). In comparison to the study from São Paulo University Medical School, São Paulo, Brazil it was found that resume of normal activities and return to work took place after 3 to 14 days, with a mean period of 6 days [12].

It was found that 42 patients had complete relief of symptoms, 2 patients had a small residual skin tag and 2 patients had anal bleeding on the first postoperative follow-up visit. The remaining 4 (8%) patients could not be followed up because they were not available. In this study, 2 months after operation (2nd postoperative follow-up visit) it was found that 44 patients had complete relief of symptoms and 2 patients had small residual skin tag. Although rarely a source of significant symptoms, skin tags might be cosmetically undesirable and a cause of anxiety for some patients. But it involves a process of gradual involution [24]. Patient reassurance is generally all that is required, with surgical excision reserved for particularly large skin tags that are a cause of continuing distress [25]. In this study, it was found that 45(90%) patients expressed their complete satisfaction but only 1(2%) patient was not satisfied because of the high expenditure on the

operation [25]. The experience with stapled hemorrhoidectomy thus far is quite promoting. In this study, the results semblance that patients with 2nd-degree, 3rd-degree, and 4th-degree hemorrhoids would be treated safely with minor complications.

CONCLUSION

Though stapled hemorrhoidectomy is a newer technique, it can be done safely in a developing country like Bangladesh. It is very much effective in controlling hemorrhoidal symptoms. However, the long-term evaluation of results and complications of hemorrhoidectomy is still lacking in the study. The postoperative pain and discomfort are significantly less in stapled hemorrhoidectomy operation than in conventional hemorrhoidectomy. In spite of the high cost, it is becoming very much popular in our country because of fewer complications. So more and more patients prefer stapled hemorrhoidectomy for the treatment of hemorrhoids [26].

FUNDING

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CONFLICT OF INTEREST

None declared.

ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

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