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Original Article

The Postoperative Complications of the Stapled Hemorrhoidectomy in the BSMMU, Bangladesh

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ABSTRACT

Background*: A haemorrhoid is a communal ailment in most Western and Asian countries. However, conventional surgical treatment is related to severe pain and open wound for a long time. A new technique of haemorrhoid operation i.e. stapled Hemorrhoidectomy does not involve excision of the haemorrhoid and is thereby expected to have less pain and no open wound.* ***Aim of the study:*** *The study aims to identify the postoperative complications of the stapled hemorrhoidectomy in the Bangabandhu Sheikh Mujib Medical University, Bangladesh.* ***Methods****: A prospective observational study was carried out at Bangabandhu Sheikh Mujib Medical University, Bangladesh, and different private hospitals in Dhaka city from 1st September 2007 to 31st August 2008. There were 50 patients, enrolled in this study selected randomly based on age, sex, height, nutritional conditions, and socio-economic status. Data were collected using the predesigned semi-structured questionnaire. The data analysis was accomplished by Statistical Package for the Social Sciences (SPSS) Version 25.0.* ***Results:*** *Majority of the patients were male (45,90.0%) & only five patients (5,10.0%) were female. The mean age was 42.35 years. Around four-fifths of the patients (39,78%) had constipation, six patients (6,12%) had both constipation and ingestion of*

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spicy food, four patients (4,8%) had a pregnancy and one patient (1,2%) had no risk factors. Most of the patients (44,88%) complained of having bleeding per rectum, forty-two patients (42,84%) had symptomatic prolapse, about half of the patients (24,48%) had pruritus, nineteen patients (19,38%) had pain, two patients (2,4%) presented with severe anaemia, requiring blood transfusion, before operation. The majority of the patients (34,68%) had per rectal bleeding during the defecation, six patients (6,12.0%) had per rectal bleeding during the micturition, four patients (4,8.0%) had per rectal bleeding during the irrespective of defecation and six patients (6,12.0%) observed no bleeding. ***Conclusion:*** *Haemorrhoids are one of the most annoying diseases for patients. Stapled hemorrhoidectomy is connected with less pain, less discomfort immediate postoperative period and also restored surgical anatomy to normal. It has a few complications, but still, it is very much popular in Bangladesh.*

Keywords: *Hemorrhoid, Hemorrhoidectomy, Stapled Hemorrhoidectomy.*

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INTRODUCTION

Haemorrhoids are the most common anorectal complications. Surgery is the convenient management of third and fourth-degree haemorrhoids. Haemorrhoidectomy is a commonly performed operation and among the various surgical methods applied [1]. The word haemorrhoid is derived from ancient Greek (haima = blood and rrhein = flowing) [2]. Haemorrhoids have been defined since the commencement of medical history. The leading known documentation is from around 2250 BC in the Code of King Hammurabi in Babylon where symptoms of haemorrhoids are termed. The prior 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 [3] Haemorrhoids are swollen, enlarged veins that form inside and outside the anus and rectum. Haemorrhoids are a more communal disease in the western world and Asian populations [4]. People of any age and gender may affect by haemorrhoids, 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 Haemorrhoids [5]. There are two types of haemorrhoidal disease, such as inside haemorrhoids (inside the rectum) and external haemorrhoids (around the anas) [6]. Australian-wide health care program found that 39% of the incidence of haemorrhoids was identified in 2012. The Korea National Health Insurance Corporation reported that haemorrhoidectomy was the second most frequent surgery and had been performed in 220,000 populations in 2012 [7].In most cases, simple

measures may alleviate symptoms while haemorrhoids heal on their own. However, surgery or medication may play an important role in certain cases. Treatments contain non-excisional interventions; conservative management; and surgical hemorrhoidectomy. Hemorrhoidectomy is usually applied when conservative management or non-excisional interventions flop. Varieties of techniques are used such as; Milligan-Morgan, Ferguson, Parks, Fansler-Arnold, and Fansler-Anderson. These techniques induce pain and longer recovery time. To reduce these, excisional hemorrhoidectomy has inspired surgeons to quest for substitute techniques for treating patients with symptomatic hemorrhoidal disease [8]. Although the hemorrhoidal disease is a benign condition. One of the most prevalent causes of rectal bleeding is hemorrhoids. Prolapse, bleeding, lump formation, itching, and burning sensations are some of the symptoms that people experience, and they can be excruciating. Constipation, diarrhoea, ageing, and increased abdominal pressure caused by persistent straining, pregnancy, heavy life, and impaired venous return are all common aggravating factors. When the condition progresses to gangrene, it can be fatal. It is believed that at least 50% of those over the age of 50 have suffered haemorrhoidal symptoms at some point [9]. The primary treatment for treating prolapsed hemorrhoids is surgical ablation. Department of Surgery, University of Palermo, Italy, devised a surgical technique for haemorrhoids 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) [10]. This is also known as stapled hemorrhoidectomy, circumferential mucosectomy, Longo operation, and stapled apoplexy. Researchers have compared this operation with the older ways of removing haemorrhoids. 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 haemorrhoid operations [11]. Recently, it has been demonstrated that surgical treatment of haemorrhoids on a day-care basis is possible and safe. The pain after stapled hemorrhoidectomy was low, recovery was rapid, complications were few, and the patient was high [12]. In the particular, recurrence of hemorrhoidal tissue is 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 haemorrhoid diseases. But people have an old belief that haemorrhoid 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

haemorrhoid diseases. In our country sclerotherapy, rubber band ligation, and open hemorrhoidectomy is being practised for a long time [13]. There is a great demand by the patient that the haemorrhoid 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 [14]. The study aims to investigate the postoperative complications of the stapled hemorrhoidectomy in the Bangabandhu Sheikh Mujib Medical University, Bangladesh

General Objective:

To investigate the postoperative complications of the stapled hemorrhoidectomy in the Bangabandhu Sheikh Mujib Medical University, Bangladesh

Specific objectives:

- To define 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 haemorrhoidectomy.
- To notice patient satisfaction after stapled hemorrhoidectomy.
- To observe the early complications of stapled hemorrhoidectomy.

METHODS

A prospective observational study was carried out at Bangabandhu Sheikh Mujib Medical University, Bangladesh, and different private hospitals in Dhaka city from 1st September 2007 to 31st August 2008. There were 50 patients, enrolled in this study selected randomly based on age, sex, height, nutritional conditions, and socio-economic status. Data were collected using the predesigned semi-structured 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. Investigations were done for anaesthetic fitness. After counselling informed consent was taken. The information was kept confidential only to be used for the study purpose. Ethical clearance was taken from the hospital authority.

Inclusion criteria:

Patients with bleeding per rectum, symptomatic prolapse, and severe anaemia require a blood transfusion.

Exclusion Criteria:

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

Stapled Hemorrhoidectomy (Longo)

Longo described a conceptually new technique for haemorrhoid surgery in 1998. The new conception was based on the lining and sliding theory for the pathogenesis of the disease. The technique, 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 [15,16,17]. A higher or lower staple line affects the outcome in numerous ways [18,19]. 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, percentages, and cross-tabulations were used for descriptive analysis. Frequencies and percentages were used for descriptive analysis. The data analysis was accomplished by Statistical Package for the Social Sciences (SPSS) Version 25.0.

RESULTS

Among the study population (N=50), majority of the patients were male (45,90.0%) & only five patients (5,10.0%) were female. The mean age was 42.35 years. Half of the patients (25,50%) were in the age group of 41-50 years. On-fifths of the patients (10,20.0%) were in the age group of 31-40 years. Around one-third of the patients (15,30.0%) belonged to the upper class, twenty-eight patients (28,56%) belonged to the upper middle class, and seven patients (7,14.0%) belonged to middle-class families. Incidence was more in the upper-middle class **[Table I]. Figure 1** showed the distribution of the study population based on age. Around four-fifths of the patients (39,78%) had constipation, six patients (6,12%) had both constipation and ingestion of spicy food, four patients (4,8%) had a pregnancy and one patient (1,2%) had no risk factors **[Table II].** Most of the patients (44,88%) complained of having bleeding per rectum, forty-two patients (42,84%) had symptomatic prolapse, about half of the patients (24,48%) had pruritus, nineteen patients (19,38%) had pain, two patients (2,4%) presented with severe anaemia, requiring blood transfusion, before operation **[Table III].** While digital rectal examination (DRE) was conducted, in eighteen patients (18,36%), there was no blood in the index finger, in two patients (2,4%), the examination was painful, and in twenty patients (20,40%), both discharge and tenderness were found, remaining ten patients (10,20%) had normal DRE **[Table IV]. Figure 2** showed the distribution of the study population according to findings of the

digital rectal examination**.** The majority of the patients (34,68%) had per rectal bleeding during the defecation, six patients (6,12.0%) had per rectal bleeding during the micturition, four patients (4,8.0%) had per rectal bleeding during the irrespective of defecation and six patients (6,12.0%) observed no bleeding **[Table V].** Restoration of surgical anatomy was done in forty-six patients (46,92.0%), three patients (3,6%) complained of some residual lump and one patient (1,2.0%) complained of definitive protrusion of a single haemorrhoid **[Table VI]**. Five patients (5,10.0%) developed urgency of defection, eight patients (8,16.0%) developed urinary retention, three patients (3,6.0%) developed reactionary hemorrhage, and no post-operative complication was developed in thirty-two patients (32,64.0%) **[Table VII]**. Around three-fourths of the patients (38,76.0%) stayed for 2 days, six patients (6,12.0%) stayed for 3 days, four patients (4,8.0%) stayed for 4 days, and two patients (2,4%) stayed for 5 days in the hospital after the operation **[Table VIII]**.

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

Characteristics	**(N,%)**
Sex	
Male	45,90.0%
Female	5,10.0%
Age group **Mean Age:** 42.35±SD	
11-20	1,2.0%
21-30	2,4.0%
31-40	10,20.0%
41-50	25,50.0%
51-60	8,16.0%
61-70	3,6.0%
71-80	1,1.0%
>80	0,0.0%
Socio-economic condition	
Upper class	15,30.0%
Upper middle class	28,56.0%
Middle class	7,14.0%
Poor class	0,0.0%

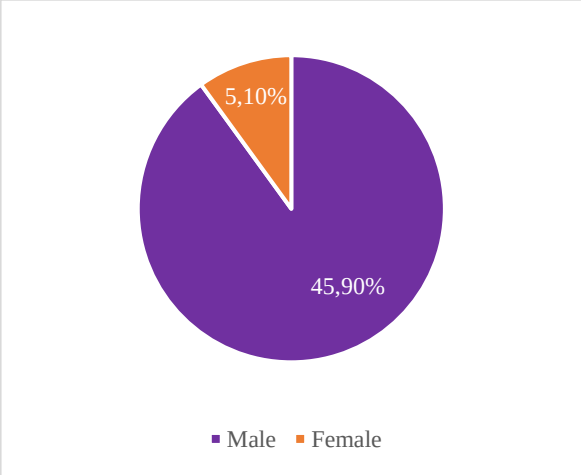

Fig 1: Distribution of Study Population Based on Sex (N=50)

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

Risk factors	**(N,%)**
Constipation	39,78.0%
Constipation and spice food	6,12.0%
Pregnancy	4,8.0%
No risk factors	1,2.0%

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

Symptoms	(N, %)
Bleeding per rectum	44,88.0%
Symptomatic prolapse	42,84.0%
Pruritus	24,48.0%
Pain	19,38.0%
Severe anaemia requiring blood transfusion	2,4.0%

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

Examination findings	(N,%)
Normal	10,20.0%
Discharge	18,36.0%
Tender	2,4.0%
Both discharge and tender	20,40.0%

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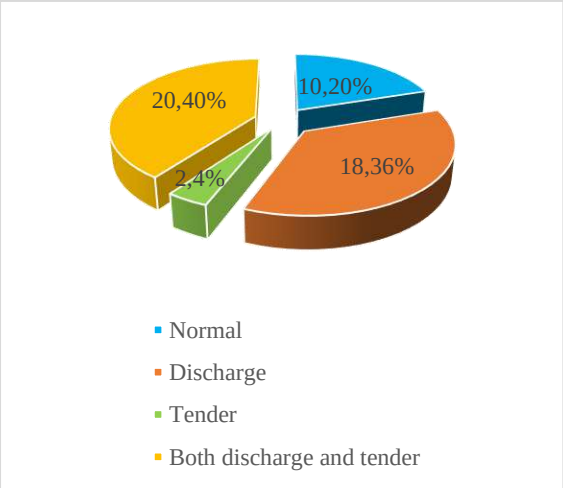

Fig 2: Distribution of Study Population Based on Findings of Digital rectal examination (N=50)

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

Per-rectal Bleeding	Frequency (N)
During defection	34, 68.0%
During micturition	6,12.0%
Irrespective of defecation	4,8.0%
No bleeding	6,12.0%

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

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

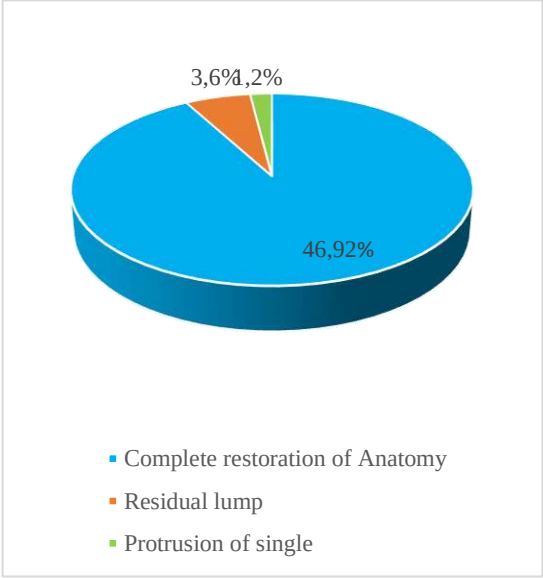

Fig 3: Distribution of study Population Based on Surgical Anatomy after the operation (N=50)

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

Complications	(N, %)
Urgency of defection	5,10.0%
Urinary retention	8,16.0%
Anal stenosis	0,0.0%
Anal pain	2,4.0%
Reactionary Hemorrhage	3, 6.0
Pelvic cellulitis, tetanus	0,0.0%
No complication	32,64.0%

Table VIII: Duration of hospital stay (postoperative)

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

DISCUSSION

Haemorrhoidal disease is a common complaint demanding the surgical intervention in approximately 10% of cases. Haemorrhoids are widespread in society, and while easy to diagnose, the treatment is not all the time satisfactory because asymptomatic patients are less likely to seek medical support [20]. This prospective study was conducted at Bangabandhu Sheikh Mujib Medical University, Bangladesh, and different private hospitals with the presence of 50 patients. In this study, the male-to-female ratio was 9:1 in contrast with another study carried out at São Paulo University Medical School, São Paulo, Brazil, where the ratio was 1.68:1. 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. Another study conducted by Bulus *et al*.; showed that the mean age of the patients 34.1±SD who underwent hemorrhoidectomy surgery [21]. The average age was 43.96±SD in the staple haemorrhoidectomy group, as reported by Mengalet *et al*.; [22] In this current analysis, 30% belonged to the upper class, 56% to the upper middle class and 14% to middle-class families. Incidence was more in the upper middle class. The community-wide occurrence of haemorrhoids in Northwest Ethiopia is associated with upper-middle socioeconomic status, but this association may reflect variances in health-seeking behaviour rather than true prevalence [23]. Another study carried out in Korea revealed that high-income levels, and alcohol constipation, were associated with an increased frequency of haemorrhoids [24]. In the current study, 78% of patients had constipation, 12% of patients had both constipation and ingestion of spicy food, 8% of patients had a pregnancy, and 2% of patients had no risk factors. In this study, 44 patients complained of bleeding per rectum; 42 had symptomatic prolapse; 24 had pruritus; 19 had pain; 2 patients presented with severe anaemia, requiring blood transfusion, before the operation. Another study suggested some similar information such as severe anas pain, and constipation [25]. Restoration of

surgical anatomy after stapled hemorrhoidectomy in 46 patients. 3 patients complained of some residual lump and 1 patient complained of definitive protrusion of a single haemorrhoid. Another contradictory study from São Paulo University Medical School, São Paulo, Brazil, found restoration of anatomy, 94%, and 6% had small residual prolapsed mucosa [26]. In this study, 5(10%) have urgency of defecation, 8 (16%) have urinary retention, haemorrhage 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 haemorrhage [26]. Another study conducted by Rho *et al*.; found that some early complications such as urinary retention accounted for 1.8% of patients, 0.3% of patients experienced postoperative bleeding and only one required reoperation. Late complications like anal stenosis, incomplete healing, and anal fissure were detected in most of the patients and the long-term complications were anal fistula, soiling, perianal abscess and recurrence were identified [27]. 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. Urinary retention is a common complication of haemorrhoid surgery [28]. 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. Another analysis revealed that the average duration of hospital stay was a minimum of 1 day and the time taken to return to work was 7 days [29]. Giordano *et al*.; suggested that stapled hemorrhoidectomy offers several short-term advantages, such as reduction of blood loss, a shorter hospital stay with lesser postoperative pain, and associated better outcomes. It also enhances the quality of life. The considerably increased risk of recurring haemorrhoidal prolapse should be weighed against these potential benefits and the patients should be involved in choosing the best treatment option [30,31].

CONCLUSION

Haemorrhoids can be uncomfortable and painful. People with haemorrhoids develop anaemia, blood clots, infection, skin tags, strangulated haemorrhoids etc. Stapled hemorrhoidectomy is a pointedly less painful operation and provides substantial benefits in terms of hospital stay and symptom control in the long learn, making for a considerably prior return to work. The postoperative discomfort and pain are significantly fewer in stapled hemorrhoidectomy procedures than in conventional hemorrhoidectomy.

Regardless of the high cost, it is becoming very much popular in our country as it has fewer complications. So, more and more patients prefer stapled hemorrhoidectomy for the treatment of haemorrhoids.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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