

# A Prospective Study of Post-operative Complications Following Stapled Haemorrhoidectomy

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## Abstract

**Introduction:** Haemorrhoids is one of the most common anorectal disorders. Stapled haemorrhoidectomy (SH) is newly developed method for the surgical management of Haemorrhoids.

**Objective:** To evaluate postoperative complications followed by Stapled haemorrhoidectomy.

**Methods:** A prospective observational study was conducted among the patients with haemorrhoid those who got admitted in different surgery units in the department of surgery in Shaheed Suhrawardy Medical College Hospital, Dhaka from 01 December 2015 to 31 May 2016. A total of 60 patients were selected following convenient sampling technique. Data were collected by face to face interview using a structured questionnaire and check list. All completed questionnaires were validated manually and data were analyzed by using descriptive and inferential statistics with SPSS 19.0.

**Results:** In this study, immediate complications (first week) were: bleeding (8.3%), urinary retention (5.0%), moderate pain (5.0%), pruritus (5.0%) and submucosal abscess (1.7%). The most common complication after 1 week was mild pain (8.3%), stenosis (5%), flatus incontinence, recurrence of hemorrhoids in 3.3% and bleeding was (3.3%). Recurrent hemorrhoids were treated by ligation in 40% and by Milligan-Morgan procedure in 32%. Anal stenoses were treated by dilatation in 55% and by anoplasty in 45%. It was revealed from study that among the patients treated with SH 21.6% had immediate complications followed by 24.3% had late complications.

**Conclusion:** Prevention is the best treatment of haemorrhoids. Stapled haemorrhoidectomy is safe with many short-term benefits like less post-operative pain, early return from hospital and early return to their normal activities. Like other modalities it is also associated with a long-term risk of hemorrhoid recurrence and the symptom of prolapse. However, this method is well accepted and comfortable for the patients.

**Key words:** Haemorrhoids, Stapled haemorrhoidectomy, Complications.

## Introduction

Haemorrhoidal disease is the disorder most frequently encountered in proctology<sup>1</sup>. Haemorrhoid is derived from a Greek word, meaning flow of blood (heam-blood rhoos -flowing). It is defined as the symptomatic enlargement and distal displacement of the normal anal cushions<sup>2</sup>. It has been traditional to grade haemorrhoidal disease into four degrees depending on the extent of the prolapse. After the haemorrhoids are appropriately staged, treatment options should be explored.

In recent times many techniques carrying various eponyms have been described. In most instances, haemorrhoids are treated conservatively, using many methods such as lifestyle modification, fiber supplement, suppository-delivered anti-inflammatory drugs and administration of venotonic drugs<sup>3</sup>. Non-operative approaches include sclerotherapy and preferably, rubber band ligation. An operation is indicated when non-operative approaches have failed or complications have occurred. Options for haemorrhoidectomy include the techniques of Milligan-Morgan haemorrhoidectomy, stapled haemorrhoidectomy closed Ferguson haemorrhoidectomy and White head haemorrhoidectomy.

Stapled Haemorrhoidectomy (SH) was first described by an Italian surgeon, Dr. Antonio Longo, Department of Surgery, University of Palermo, in late 1990's<sup>4</sup>. Since then, it has been widely adopted worldwide. This operation involves the use of a stapled gun inserted through the anus to hold back the internal haemorrhoids and reduce the degree of prolapse by excising a circumferential strip of mucosa from the proximal anal canal. Stapled haemorrhoidectomy is usually reserved for 3rd and 4th degree haemorrhoids. It is sometimes used to treat 2nd degree haemorrhoids as well which are not cured by other treatment modalities. A large multicentre study in Italy showed a complication rate of 15%. The most common complications were severe pain and bleeding at 5% and 4% respectively. Pain is the most

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frequent complication and the most feared sequelae of the procedure from the patient's perspective<sup>5</sup>.

Early postoperative bleeding (<24 hours) occurs in approximately 1% of patients and represents a technical error that requires return to the operating room for resuturing of the offending wound<sup>6</sup>. Delayed hemorrhage occurs in 0.5 to 4% of cases of excisional haemorrhoidectomy at 5 to 10 days postoperatively<sup>7</sup>. Anal stenosis and anal fissures is a rare complication which may result from a failure of the haemorrhoidectomy site to heal adequately. Edema in the perianal skin adjacent to hemorrhoid wounds may result in skin tags and the incidence of skin tags is reported to occur in 4% of patients after excision ligation.

### Materials and Methods

This was a prospective observational study which was conducted among the patients with haemorrhoid those who got admitted in different surgery units in the Department of surgery in Shaheed Suhrawardy Medical College Hospital, Dhaka, during the period of 01 December 2015 to 31 May 2016. A total of 60 patients were selected following convenient sampling technique. Data were collected by face to face interview using a structured questionnaire and check list. All completed questionnaires were validated manually and data analysis carried out by computer using SPSS version 19.0 software package. Data were analyzed by using descriptive and inferential statistics.

### Results

Among the all participants, majority i.e. 36(60 %) were in the age group 26-35 years followed by 18(20%) were in age group 36-45 years, 4(6.6%) were below 25 years and the rest 2(3.3%) were above 46 years. Mean age (+SD) of the participants was 31.0±7.66 years. Regarding the sex of the participants, the study showed that majority of the participants i.e. 38(66.33%) were male while 22(36.7%) participants were female. Regarding BMI of participants, majority of the patients i.e. 20 (33.3%) were obese (BMI>30kg/m<sup>2</sup>) while 17(28.3%) had normal body weight (BMI 18.5-24.9 kg/m<sup>2</sup>), 23(38.4%) were over weight (BMI was 25-29.9 kg/m<sup>2</sup>) (Table-I). Bleeding is the principal and earliest symptom of haemorrhoids. Other symptoms are constipation, prolapse, discharge of mucous, pruritus ani, local pain and very rarely anaemia. Prolapse is a much delayed symptom. Local pain is absent unless there is complication like strangulation and thrombosis. In this study, bleeding was observed in all the patients (100%). Constipation was in 34(56.7%) while anal discomfort was in 12(20%) patients and 8(8.33%) patients had mild pain (Table-II). Majority of the patients, 35(58.4%) were having 2<sup>o</sup> haemorrhoids (failure in conservative treatment) and 17

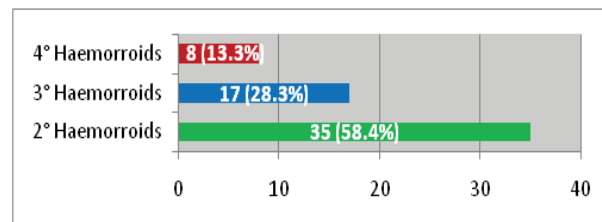
(28.3%) patients were having early 3<sup>o</sup> haemorrhoids and rest 8(13.3%) having 4<sup>o</sup> haemorrhoids (Figure-1). Of the immediate complications, bleeding was the most common complication followed by urinary retention, moderate pain, pruritus, submucosal abscess (Table-III). Recurrent haemorrhoids are most common late complications, found in 2(3.33%) patients. Anal stenosis were found in 2(2.7%) of cases followed by fissure found in 1(1.66%) of participants (Table-IV). Stapled hemorrhoidectomy (SH), a new approach to the treatment of hemorrhoids, removes a circumferential strip of mucosa about four centimeters above the dentate line. It was revealed from study that among the patients treated with SH 13(21.7%) had immediate complication followed by 15(25.0%) had late complication (Figure-2).

**Table-I:** Socio-demographic status of participants (n=133)

Variable	n	%	
Age (years)	15-25	4	6.6
	26-35	36	60.0
	36-45	18	30
	46-55	2	3.3
	Mean(+SD)	31.0(±7.66) years	
Sex	Male	38	66.33
	Female	22	36.7
Body Mass Index (BMI)	Normal body weight (BMI 18.5-24.9kg/m <sup>2</sup> ),	17	28.3
	Over weight (BMI was 25-29.9kg/m <sup>2</sup> )	23	38.4
	Obese (BMI>30kg/m <sup>2</sup> )	20	33.3

**Table-II:** Presenting pre operative symptoms of the participants

Clinical Symptoms	Frequency	Percentage
Per rectal bleeding	60	100
Constipation	34	56.7
Discomfort	12	20



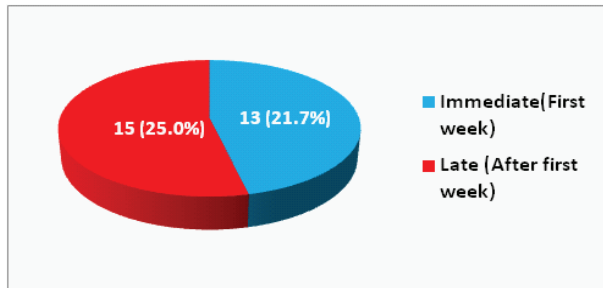
**Figure-1:** Types of haemorrhoids

**Table-III:** Immediate(within first week) complication of participants

Complication	Frequency	Percentage
None	48	79.7
Bleeding	5	8.3
Urinary retention	3	5.0
Moderate pain	3	5.0
Pruritus	3	5.0
Submucosal Abscess	1	1.7

**Table-IV:** Late complications of participants of haemorrhoidectomy

Complication	Frequency	Percentage
None	45	74.7
Mild Pain	5	8.3
Flatus incontinence	3	5.0
Stenosis	3	5.0
Recurrent haemorrhoids	2	3.3
Bleeding	2	3.3



**Figure-2:** Overall complications of all participants of Staped haemorrhoidectomy

## Discussion

The circular stapled hemorrhoidectomy technique is a new approach to the treatment of hemorrhoids. The lining of the anal canal is among the most richly innervated tissue in the digestive tract. Thus, pain after haemorrhoidectomy is certainly an expected post-operative outcome. A great deal of emphasis has been applied to the management of pain after haemorrhoidectomy, not only because of the pain but also because of its role in urinary symptoms<sup>8</sup>. The over enthusiastic use of intravenous fluids during the procedure may contribute to the high incidence of urinary retention<sup>9</sup> as will spinal anaesthesia. Several studies have attempted to identify the various approaches to post-haemorrhoidectomy pain reduction. Although stapled haemorrhoidectomy is applicable for treating reducible haemorrhoidal prolapse<sup>10</sup> and is associated with less post-operative pain but is also associated with a number of reported complications<sup>11,12</sup>. The Mean age ( $\pm$ SD) of the patients was  $31.0 \pm 7.66$  years. The study showed that out of all participants, majority i.e. 36(60%) were in the age group 26-35 years followed by 18(20%) were in age group 36-45 years, 4(6.6%) were below 25 years and the rest 2(3.3%) were above 46 years. The study findings consistent with the findings of the study conducted by Bhuiya MFA et al<sup>13</sup> at Combined Military Hospital (CMH) of Cumilla cantonment during the period of November 2009 to August 2010 where the highest number of patients were in middle age group (81%).

Regarding the sex of the participants, the study showed that majority of the participants i.e. 38(66.3%) were male while 22 (36.7%) participants were female which is consistent with findings of study conducted by Bhuiya MFA et al<sup>13</sup> at Combined Military Hospital (CMH) of Cumilla Cantonment where 75% patients were male. The study finding is also similar with the study conducted by Ravo B et al<sup>14</sup> on complications after stapled hemorrhoidectomy: Can they be prevented? Where male patients were 61% regarding BMI of participants, majority of the patients i.e. 20(33.3%) were obese (BMI>30 kg/m<sup>2</sup>) while 17(28.3%) had normal body weight (BMI 18.5-24.9 kg/m<sup>2</sup>), 23(38.4%) were over weight (BMI was 25-29.9 kg/m<sup>2</sup>).

It was found from the study that bleeding was the principal and earliest symptom of haemorrhoids. Other symptoms were constipation, prolapse, discharge of mucous, pruritus ani, local pain and very rarely anaemia. Prolapse is a much delayed symptom. Local pain is absent unless there is complication like strangulation and thrombosis. In this study, bleeding was observed in all the patients (100%). Constipation was in 34(56.7%) while anal discomfort was in 12(20%) patients and 8 (8.33%) patients had mild pain which is consistent with findings of study conducted by Bhuiya MFA et al<sup>13</sup> at CMH of Cumilla Cantonment where all the patients presented with painless per-rectal bleeding. Constipation was present in 85(88.54%) cases. Finding of the study was dissimilar with finding of Thomson JPS et al<sup>15</sup> in 1992 on Coloproctology and the pelvic floor where bleeding was the most common symptom (35%), followed by prolapse (21%), pain (19%), discomfort (17%), pruritus (6%) and discharge (1%). This is may due to lack of awareness of our people and their usual tendency to visit doctors when they reach the last limit of their tolerance.

It was depicted from the study that majority of the patients 35(58.31%) were having 2<sup>o</sup> haemorrhoids (failure in conservative treatment) and 17(40.6%) patients were having early 3<sup>o</sup> haemorrhoids and rest 8(13.3%) having 4<sup>o</sup> haemorrhoids which is consistent with findings of study conducted by Bhuiya MFA et al<sup>13</sup> at CMH of Cumilla Cantonment where out of 96 patients, 39(40.6%) patients were having early 2<sup>o</sup> haemorrhoids.

Peroperative complications may occurs during any surgical procedure. Most of the complications may be due to the technical errors. Most of the technical problems may be avoided if deeper layers of rectal wall is respected and not included into purse string, making a mucosal anastomosis that is needed for staple procedure, instead of an all wall rectal layers anastomosis. During the procedure only 2(2.08%) patients had history of bleeding which was stopped by anal pack and only 5(8.3%) had oozing.

Regarding the immediate complications, this study revealed that bleeding (8.33%) was the most common complication followed by urinary retention (5.0%), moderate pain, pruritus, submucosal abscess were the least common complications. The study finding is similar with finding of the study conducted by Ravo B et al<sup>14</sup> on "Complications after stapled hemorrhoidectomy: Can they be prevented?" A review of 1107 patients treated with SH from twelve Italian coloproctological centers has revealed a 15% (164/1107) complication rate. Immediate complications (first week) were: severe pain in 5.0% of all patients, bleeding (4.2%), thrombosis (2.3%), urinary retention (1.5%).

It was revealed from the study that recurrent haemorrhoids were most common late complications, found in 2(3.33%) patients. Anal stenosis were found in 2(2.7%) of cases followed by fissure found in 1(1.66%) of participants. The study finding is similar with finding of the study conducted by ASMT Rahman et al<sup>16</sup> on Stapled Haemorrhoidopexy Compared with Conventional Haemorrhoidectomy (CH)-A Systematic Review. A significantly higher proportion of patients with SH complained of symptoms of prolapse, SH is associated with less post operative pain (81 trials, 6253 patients). Patients with SH were significantly more likely to have recurrent haemorrhoids than those with CH (96 trials, 7330 patients).

Stapled hemorrhoidectomy (SH), is a technology-based newer approach to the treatment of hemorrhoids. Contemplating all it was revealed from study that among the all patients who underwent Stapled hemorrhoidectomy, 3(21.58%) had immediate post-operative complications followed by 15(24.30%) had late complications. The study finding is similar with the study conducted by Ravo B et al<sup>14</sup> on "Complications after Stapled hemorrhoidectomy: Can they be prevented?" where immediate overall complications was 15% of the participants.

## Conclusion

Prevention is the best treatment of haemorrhoids. Diets high in fibres can prevent constipation. If the diet can not be modified in this way, adding bulk laxatives may be necessary, they can prevent worsening of the condition. There are numerous creams and suppositories that can relieve anal irritations and pain but they rarely provide long-term benefits. Stapled haemorrhoidectomy is safe with many short-term benefits like less post operative pain, early return from hospital and joining back to their normal activities. Like other modalities, it is also associated with a long-term risk of hemorrhoid recurrence and the symptom of prolapse. Patients should be informed regarding this issue of risks when being offered the stapled haemorrhoidopexy as surgical therapy. However, this method is well accepted and comfortable for most of the patients as virtually there is no complication, no loss of work and in terms of patients satisfaction.

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