

# Retrospective Assessment of the Outcome of the Stapled Haemorrhoidopexy for Haemorrhoids against Conventional Open Technique

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## Abstract

**Aim:** To assess the outcome of the new procedure (Stapled haemorrhoidopexy) for haemorrhoids against conventional open technique.

**Material & Methods:** The present retrospective study comparing Milligan Morgan open hemorrhoidectomy and Stapled hemorrhoidopexy for the management of grade 3 and 4 hemorrhoids was conducted in the Department of General Surgery, Nalanda Medical College and Hospital, Patna, Bihar, India for the duration of 1 year. Data of 100 patients who underwent surgery for hemorrhoids at our institute who fulfilled the inclusion and exclusion criteria was assessed.

**Results:** A total of 100 patients (50 for each group) were included, randomized, and received treatment. There were no significant differences between the 2 groups with respect to sex, weight, history, or risk factors. At the 6-week postoperative visit, collected data showed that normal activity was restored earlier in the SH group ( $P = 0.001$ ). No significant difference was observed in the incidence of complications in the 2 groups ( $P = 770$ ).

**Conclusion:** Stapled hemorrhoidopexy combined with an excisional technique was effective for more advanced hemorrhoid disease. The combination may have prevented symptomatic recurrence associated to stapled hemorrhoidopexy alone.

**Keywords:** Stapled haemorrhoidopexy, haemorrhoids, Milligan Morgan

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## Introduction

Prevalence rates of hemorrhoids have varied widely, from 1% to 86%, depending on the method of ascertainment and the definition of “hemorrhoids” [1].

Various factors involved in haemorrhoids development include constipation and prolonged straining. The abnormal dilatation and distortion of the vascular channel, together with destructive changes

in the supporting connective tissue within the anal cushion, results in formation of haemorrhoids [2].

Grade III and IV hemorrhoids are better managed by surgical correction compared to other proposed conservative procedures, like rubber-band ligation, sclerotherapy, and cryotherapy [3].

The choice of surgery depends on the severity, type of the symptoms, degree of prolapse, the expertise of the operator and equipment available. About 40% of the patients suffering from haemorrhoids require surgery [4]. Conventional hemorrhoidectomy is a commonly performed operation. It has good results but is a very painful procedure resulting in a hospital stay of four to ten days and time off work for two to six weeks [5]. The patient also faces the complications of haemorrhage, urinary retention and late complications like stenosis or incontinence. In search of a newer surgical technique to treat the haemorrhoids, stapler has been introduced for hemorrhoidectomy. Stapled haemorrhoidopexy has come up as a new and promising procedure causing minimal postoperative pain, early discharge and quick return to work.

Hence the present retrospective study was conducted to assess the outcome of the new procedure (Stapled haemorrhoidopexy) for haemorrhoids against conventional open technique.

### Material & Methods:

The present retrospective study comparing Milligan Morgan open hemorrhoidectomy and Stapled hemorrhoidopexy for the management of grade 3 and 4 hemorrhoids was conducted in the Department of General Surgery, Nalanda Medical College and Hospital, Patna, Bihar, India for the duration of 1 year, after obtaining the necessary approval from the Institutional ethical committee. Data of 100 patients who underwent surgery for hemorrhoids at our institute who fulfilled the inclusion and exclusion criteria was assessed.

### Inclusion criteria:

- Grade 3 and grade 4 hemorrhoids

### Exclusion criteria:

- Acute hemorrhoidal episodes with thrombosis
- Prior hemorrhoidectomy

- Intercurrent anal pathology (like fistula in ano and anal fissure)
- Prolapse of single anal cushion
- Anal stenosis

### Groups:

Fifty patients underwent Milligan Morgan technique of open hemorrhoidectomy [MM] and fifty underwent longo technique of stapled hemorrhoidopexy. [SH]

### Methodology:

The hospital data of all 100 patients was assessed.

- Preoperatively patients were kept nil per oral overnight and received phosphate enema in the morning of the day of surgery.
- Post-operative management consisted of standard nursing care and analgesia. Patients were started on a soft oral diet within 4 hours postoperatively. Dressing was removed on the morning after surgery and a local external visual examination was done.
- Post-operative pain was managed according to the guidelines of French Anaesthesia Society. Pain was assessed using a visual analog scale (VAS) where a score of 0 represented no pain and a score of 10 represented the worst pain ever. The pain score was recorded every 6 hours during the first postoperative day, at the time of first motion and daily until the end of the first week. The aim was to keep the VAS score below 5 with adequate analgesia. Prescribed analgesics were classified using the world health organization (WHO) criteria. Analgesics were administered on the basis of the VAS score <3, class I analgesic (paracetamol); between 3 and 5, class II analgesic (codeine, dextropropoxyphene-paracetamol) or VAS >5, class III analgesic (with paracetamol). If a given analgesic was having a partial effect, an analgesic of the next class was prescribed.

- In addition to analgesics, patients were advised Antibiotics (in tablet form) ciprofloxacin 500mg twice daily, metronidazole 400 mg thrice daily and syrup lactulose 20 ml at bedtime for two weeks. Patients undergoing open hemorrhoidectomy were also advised Sitz bath twice daily for two weeks. Patients were discharged when pain control and home circumstances permitted. The patients were reviewed on outpatient basis one week after surgery. Patients were advised to report immediately in case of emergency. Patients were reviewed at 1 week and 3 weeks and between 6-10 weeks postoperatively. On follow up, patients were asked to rate the control of their symptoms, degree of continence to flatus and faeces, duration to return to normal activities and any other problems they had. A physical examination was also carried out at each follow up. The outcome measures were postoperative pain, analgesia requirement, operative time, and hospital stay, time to return to normal activity, continence, patient satisfaction and complications.

#### Statistical analysis:

Data was analyzed by descriptive statistical analysis. Significance was assessed at 5% level of significance.

Student t-test was used to find the significance of study parameters on continuous scale in parametric condition between two groups (inter group analysis) and Mann Whitney U test was used to find the significance of study parameters on continuous scale in non-parametric condition within each group. Chi-square/ Fisher Exact test was used to find the significance of study parameters on categorical scale between two groups

#### Results:

A total of 100 patients (50 for each group) were included, randomized, and received treatment. There were no significant differences between the 2 groups with respect to sex, weight, history, or risk factors. The mean age in the SH group was higher than in the MM group (53 versus 41 years; P0.001).

VAS scores were comparable in both groups at all other times of the day, but there was a significant difference in analgesic consumption. To obtain an equivalent VAS score over the first 3 days, patients in the MM group had to be administered 50% to 100% more class II and class III analgesics than did those in the SH group. The difference in class II analgesics was significant (P0.001), although it was small over the first 24 hours (Table 1).

**Table 1: Total consumption of analgesics after 24 and 72 hours, class I (mg); class II (tablets or capsules); class III (mg)**

	SH (N = 50)	MM(N=50)	P
Within 24 h mean SD (min; max)			
Class I	2100 ±2321 (0; 8000)	2063±2056 (0; 9000)	0.538
Class II	1.4±1.9 (0; 6)	1.5±2.9 (0; 11)	0.066
Class III Within 72 h mean SD (min; max)	6.78 ± 9.02 (0; 33)	7.93±8.90 (0; 45)	0.283
Class I	3163±3473 (0; 18000)	2783 ±2683 (0; 14000)	0.774
Class II	2,7±3,8 (0; 16)	5.4±6.5 (0; 24)	0.001
Class III	8.63±12.77 (0; 49.83)	12.36±14.72 (0; 46.92)	0.162
SD indicates standard deviation; SH, stapled hemorrhoidopexy; MM, Milligan-Morgan.			

Regarding morphine consumption in the first 3 days, patients in the MM group consumed more but not to a significant

extent: SH 1.2 ±1.8 (0; 8) versus MM 2.2 ±2.8 (0; 15) (P0.102). However, after 24 hours, the number of patients who no

longer required morphine was significantly different: SH 80% versus MM 66% ( $P = 0.010$ ).

At the 6-week postoperative visit, collected data showed that normal activity

was restored earlier in the SH group ( $P = 0.001$ ). In addition, postoperative topical treatment and wound management at home was significantly less for the SH group ( $P = 0.001$ ) (Table 2).

**Table 2: Data on patients over the first 6 weeks**

	SH (N50)	MM(N50)	P
Length of hospital stay mean SD (min; max)	2.5±1.4 (0;5.2)	3.4±1.9 (1;8.5)	0.001
Drugs and treatments actually consumed by the patient over the first 6 wk			
Oral analgesics	48 (96%)	48 (96%)	1.271
Anti-inflammatory drugs	14 (28%)	12 (24%)	0.437
Laxatives	33 (66%)	42 (84%)	0.027
Topical treatments (wound care management)	1 (2%)	45 (90%)	0.001
Resumption of normal activities Mean SD (min; max)	13±9 (0; 52)	26±14 (0; 92)	0.001
SD indicates standard deviation; SH, stapled hemorrhoidopexy; MM, Milligan-Morgan.			

Anatomic assessment at 1-and 2-year physical examination revealed no differences between the 2 groups. The 2 techniques were effective against both skin tags and external, hypertrophic hemorrhoids. This was normal in 90% and 86% of patients in SH group at 1 and 2 years, respectively, the corresponding figures for the MM group being 100% and 95% (Table 3).

**Table 3: Impact of surgery on skin tags and hypertrophic external hemorrhoids**

Condition	After 1 Year	After 2 Years
Skin tag present	SH 34% versus MM 19%	SH 33% versus MM 19%
Skin tag none	SH 11% versus MM 10%	SH 13% versus MM 9%
Hypertrophic external hemorrhoid present	SH 10% versus MM 0%	SH 12% versus MM 4%
Hypertrophic external hemorrhoid none	SH 3% versus MM 0%	SH 14% versus MM NA

No significant difference was observed in the incidence of complications in the 2 groups ( $P = 0.770$ ). Specific complications were observed in each group, namely fecaloma ( $P = 0.001$ ) in the MM group and external hemorrhoidal thrombosis in the SH group ( $P = 0.001$ ) (Table 4).

**Table 4: Incidence of complications during the follow-up period**

Complications	SH	MM	P
Fecaloma	1	7	0.001
Continence problems	4	3	0.437
Postoperative bleeding	1	0	0.662
Stenosis involving hospitalization	0	1	1.281
Urine retention	1	2	0.973
Hemorrhoidal thrombosis	5	0	0.001
Anal fissure	1	0	0.328
Total	13	13	0.770

After 1 year, anorectal function assessed by the patient questionnaire showed the occurrence of impaired fecal continence, although there was no difference between the 2 techniques: 12 reported urgency, 8 continence problems, 4 tenesmus, and 3 loss of discrimination between gas and stool (Table 5).

**Table 5: Adverse effects of surgery on anorectal function after 1 year**

New Symptoms	SH Versus MM	Total
Urgency	8 versus 4 P =0.524	12/93
Anal incontinence	2 versus 6 P =0.290	8/82
Tenesmus	1 versus 3P = 1.000	4/90
Discrimination problems	1 versus 2 P = 0.610	3/93

**Discussion:**

The ideal treatment for hemorrhoids should be minimally invasive, painless, safe and effective. There remains an extensive discussion regarding stapled hemorrhoidopexy and, most recently, other forms of non-excisional hemorrhoid surgery, such as the Doppler-guided transanal hemorrhoid dematerialization [6] especially regarding late recurrence rates after surgery.

In an appropriate systematic review and economic evaluation of SH, the technique was associated with less pain in the immediate postoperative period, but with a higher rate of residual prolapse, prolapse in the longer term and prolapse re-intervention [7]. Moreover, patients affected by third degree hemorrhoids were ten times more likely to develop recurrences, and, in general, twice as likely to undergo further treatment to correct recurrent prolapses [8-9]. As result, Nisar et al. [10] declared that conventional hemorrhoid surgery remained the gold-standard for the surgical management of hemorrhoids. Ultimately, Giordano et al. have stated that it's a patient choice whether to accept a higher late recurrence rate to take advantage of the short-term benefits of SH. [11]

Like those of the other controlled studies reported in the literature, [12-19] the results reported here show that stapled hemorrhoidopexy is associated with significantly less postoperative discomfort. In our study, this manifested as a shorter delay before the first bowel movement, a significantly lower degree of pain during defecation, a shorter hospital stay, the absence of any need for topical treatment (

wound care), and quicker return to normal social and/or professional activities. Whichever technique is under consideration, the amount of morphine consumed was considerably higher than what is reported in the literature. The reason for this is the inclusion in the study protocol of a requirement to keep pain levels to a minimum, even in the days immediately after the operation. Although the SH group consumed lower levels of analgesics (by a factor of 50%), the difference is not significant. However, a statistically significant difference emerged after 24 hours with the SH group requiring less analgesic drugs than the MM group.

Stapled haemorrhoidopexy is not more effective in preventing recurrent haemorrhoidal disease than excision haemorrhoidopexy [20-21] or newer treatment options such as Doppler guided transanal haemorrhoidal artery ligation. [22]

Even though there have been reports of serious complications associated with all forms of intervention for haemorrhoids over the years, [23] there is no treatment modality that is associated with such a combination of serious and life threatening complications similar to those reported with stapled haemorrhoidopexy [24] despite it being a relatively new procedure. Even though they are rare, these complications are difficult to justify when dealing with a benign, non-life threatening condition. Interestingly, none of the published literature elaborates on the consent process and whether patients were informed of these serious, albeit rare, complications. [25] It would be even more interesting to see the percentage of patients who will decline consent and opt for other

procedures, even though these might be associated with increased early postoperative pain, once they have been informed of the rare risks associated with stapled haemorrhoidopexy.

### Conclusion:

Long-term outcome is good, although in some cases, anorectal function can be somewhat compromised, as is also true with conventional techniques. Stapled hemorrhoidopexy would seem to be the most suitable for reducible hemorrhoidal prolapse in that it repositions internal hemorrhoids and induces the regression of external hemorrhoids.

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