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## The comparative study of conventional vs stapled haemorrhoidectomy

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### Abstract

**Background:** Several comparative studies are reported in Literature to define a standard for ideal treatment of hemorrhoidal disease. Radical surgery is the only therapeutic option in case of III and IV stage haemorrhoids. Hemorrhoids surgical techniques are classified as Open, Closed and Stapled ones. This study was done to compare the postoperative recovery and complications of PPH and conventional MMH.

**Materials & Methods:** 30 patients with haemorrhoids were managed with surgical ligation and excision of haemorrhoids i.e. by the Milligan-Morgan technique (Group I) and the remaining 30 were managed with stapled haemorrhoidectomy, which was performed by Longo's technique (Group II). Postoperatively, the patients were properly assessed for the degree of pain according to VAS pain scale, number of analgesics consumed, any urinary retention, first bowel action postoperatively, any haemorrhage or urinary or faecal incontinence.

**Results:** The maximum number of patients were seen in the age group 30-40 years i.e. 18 (30%), of which 14 (23.33%) were male and 4 (6.66%) were female. Analgesics required during hospitalization was 12.33 in group I and 4 in group II, acute urine retention was seen in 8 in group I and 4 in group II, pain (vas) on day 1 was 8.6 in group I and 6.6 in group II, D2 was 6.8 in group I and 3.2 in group III and on day 3 was 5.5 in group I and 2.6 in group II. Hospital stay was 4.37 days in group I and 1.9 days in group II. Post-operative complications was reactionary haemorrhage 2 in group I, secondary haemorrhage 1 in group I and faecal Incontinence 2 in group I and 1 in group II. The difference was significant ( $P < 0.05$ ). Stapler technique has significantly less requirement of analgesics on day 21, 6 weeks and 3 months compared to conventional technique. More satisfaction in the stapled haemorrhoidectomy group patients indicates that the merits of the stapled technique outweigh those of the conventional technique.

**Conclusion:** Authors found stapled haemorrhoidectomy make it a better technique than the conventional haemorrhoidectomy for managing grade II and grade III hemorrhoids such as lesser operating time, postoperative pain, analgesics required, complications like postoperative urinary retention, postoperative hemorrhage and urinary or faecal incontinence.

**Keywords:** conventional haemorrhoidectomy, satisfaction, stapled haemorrhoidectomy

### Introduction

Hemorrhoids are the hypertrophy of normal vascular cushions located inside the anus that normally seal the anal opening and prevent leakage of gas or stools. Hemorrhoids occur when these cushions become engorged or the tissue prolapse into the anal canal due to engorgement of blood vessels and laxity of the surrounding connective tissue<sup>[1]</sup>.

External hemorrhoids are the congested external perianal vascular plexus covered by perianal skin; while, internal hemorrhoids originate from the sub-epithelial plexus of the anal canal above the dentate line<sup>[2]</sup>. Internal hemorrhoids may be classified according to the degree of prolapse into four degrees, although this may not reflect the severity of a patient's symptoms. The symptoms include discomfort, itching, mucous discharge, bleeding, pain, and prolapse and are associated with a feeling of fullness and incomplete evacuation<sup>[3]</sup>.

The best possible treatment of third and fourth degree haemorrhoids is haemorrhoidectomy. Milligan Morgan's Haemorrhoidectomy (MMH) is the most commonly used and is widely considered to be the most effective surgical technique for treating haemorrhoids<sup>[4]</sup>. Other techniques, such as Ferguson's closed haemorrhoidectomy and Parks sub-mucosal haemorrhoidectomy are still followed at many places. In this Stapled haemorrhoidectomy (PPH), was introduced in the 1990s by Dott Antonio Longo in Italy. In this procedure, a device

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is introduced into the anal canal which leads to the excision of a ring of mucosa proximal to the haemorrhoids, thus, interrupting the blood supply [5].

This procedure can be regarded as a well-established procedure with relatively low complication rates and also leads to drastic reduction in postoperative pain, reduced hospital stay and early resumption to work. However, a stapling gun is an expensive instrument and its long term follow-up shows less complications [6]. This study was done to compare the postoperative recovery and complications of PPH and conventional MMH.

**Materials and Methods**

This prospective comparative study was conducted on 60 patients in the department of general surgery. Patients of both sexes who presented with clinically diagnosed grade II or grade III hemorrhoids were included in the study. The patients were counseled and the treatment modalities explained to them with their benefits, complications, cost, precautions and follow-up protocol. A written informed consent was obtained from each patient, after they were admitted to the hospital.

A detailed history was taken from each patient and thorough examination was performed with emphasis on digital rectal examination and proctoscopy. Initial assessment of patients was carried out following a standard proforma to reach the diagnosis, for assessment of fitness for anaesthesia and to find out any association of systemic diseases. Patients were assessed for their general condition.

30 patients with haemorrhoids were managed with surgical ligation and excision of haemorrhoids i.e. by the Milligan-Morgan technique (Group I) and the remaining 30 were managed with stapled haemorrhoidectomy, which was performed by Longo’s technique (Group II) (Fig- 1).

Postoperatively, the patients were properly assessed for the degree of pain according to VAS pain scale, number of analgesics consumed, any urinary retention, first bowel action postoperatively, any haemorrhage or urinary or faecal incontinence (Fig- 2). After discharge, in the regular follow up sessions, patients were similarly assessed for pain, number of analgesics consumed, wound healing and their satisfaction after the surgery was noted. Statistical tests were further applied to the data collected in a period of two and a half years to find out the effectiveness of haemorrhoidal control system among the two.

**Results**

**Table 1:** Age and sex wise distribution of cases

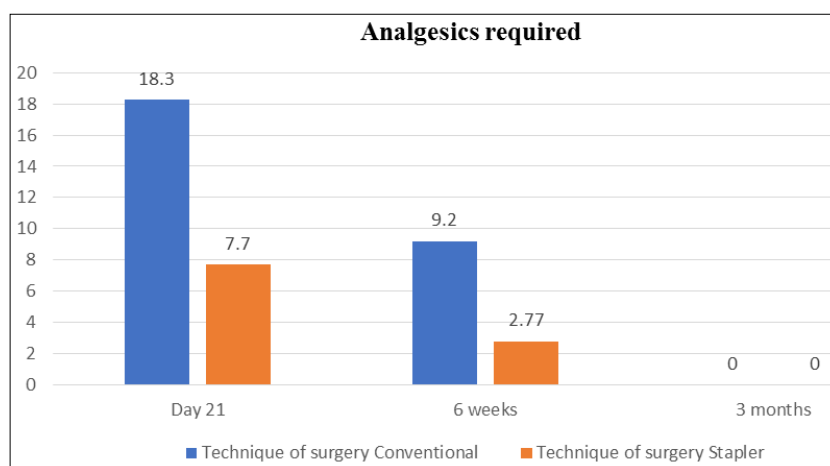
Age (in years)	Sex		Total
	Male (%)	Female (%)	
20-30	14 (23.33%)	1 (1.66%)	15 (25%)
30-40	14 (23.33%)	4 (6.66%)	18 (30%)
40-50	8 (13.33%)	3 (5%)	11 (18.33)
50-60	7 (11.66%)	3 (5%)	10 (16.67%)
60-70	2 (3.33%)	1 (1.66%)	3 (5%)
70-80	1 (1.66%)	1 (1.66%)	2 (3.33%)
80-90	1 (1.66%)	0	1 (1.67%)
Total	47 (78.33%)	13 (21.66%)	60 (100%)

Table I shows that the maximum number of patients were seen in the age group 30-40 years i.e. 18 (30%), of which 14 (23.33%) were male and 4 (6.66%) were female. The least number of patients were seen in age group 80-90 yrs i.e. 1, who was a male.

**Table 2:** Comparison of parameters

Parameters	Conventional	Stapler	P value
Analgesics required during hospitalization	12.33	4	0.02
Acute retention of urine	8	4	0.01
Post-operatDay D1	8.6	6.6	0.01
D2	6.8	3.2	0.04
D3	5.5	2.6	0.02
Stay in days	4.37	1.9	0.05
Post operative complications			
Reactionary Haemorrhage	2	0	0.01
Secondary Haemorrhage	1	0	0.12
Faecal Incontinence	2	1	0.24

Table II shows that analgesics required during hospitalization was 12.33 in group I and 4 in group II, acute urine retention was seen in 8 in group I and 4 in group II, pain (vas) on day 1 was 8.6 in group I and 6.6 in group II, D2 was 6.8 in group I and 3.2 in group III and on day 3 was 5.5 in group I and 2.6 in group II. Hospital stay was 4.37 days in group I and 1.9 days in group II. Post- operative complications was reactionary haemorrhage 2 in group I, secondary haemorrhage 1 in group I and faecal Incontinence 2 in group I and 1 in group II. The difference was significant ( $P < 0.05$ ).



**Graph 1:** Comparison of analgesics required till follow up on day 21, at 6 weeks and at 3 months

Graph I shows that stapler technique has significantly less requirement of analgesics on day 21, 6 weeks and 3 months compared to conventional technique.

**Table 3:** Patient satisfaction

	Technique of surgery		t-value	p-value
	Conventional	Stapler		
Patient satisfaction	77.67%	89%	8.09	<0.001

Table III shows that more satisfaction in the stapled haemorrhoidectomy group patients indicates that the merits of the stapled technique outweigh those of the conventional technique.



(Patient in Lithotomy position)

**Fig 1:** Preoperative figure showing third degree hemorrhoids with prolapse



**Fig 2:** Post operative site

## Discussion

Haemorrhoids have afflicted mankind since ancient times. There is a record of the disease on Egyptian papyrus and surgical treatment was reported in ancient Rome and Greece [8]. The prevalence of haemorrhoids when patients are assessed proctoscopically far outweighs the prevalence of symptoms, and the term should only be used when patients have symptoms referable to them [9]. Number of treatment options have been proposed for haemorrhoids till date including conservative and surgical [10]. In this comparative study, we have discussed about two different surgical techniques, viz. conventional haemorrhoidectomy i.e. the Milligan-Morgan technique and the

stapled haemorrhoidectomy.

In present study, 60 patients of both sexes with grade II and grade III piles were included in the study. 30 patients were managed with conventional technique and remaining 30, underwent stapled haemorrhoidectomy. 47 out of 60 patients were male and the remaining 13 were female. 28 patients had grade II haemorrhoids and remaining 32 had grade III haemorrhoids.

We found that analgesics required during hospitalization was 12.33 in group I and 4 in group II, acute urine retention was seen in 8 in group I and 4 in group II, pain (vas) on day 1 was 8.6 in group I and 6.6 in group II, D2 was 6.8 in group I and 3.2 in group III and on day 3 was 5.5 in group I and 2.6 in group II. Hospital stay was 4.37 days in group I and 1.9 days in group II. Post-operative complications was reactionary haemorrhage 2 in group I, secondary haemorrhage 1 in group I and faecal incontinence 2 in group I and 1 in group II. Ortiz *et al.* [11] included 241 patients who underwent surgery with traditional open or closed technique and 207 with the SH technique according to Longo. There were no differences between CH and SH about both pre and post surgery hospitalization and intraoperative length. Pain is the most frequently observed early complication with a statistically significant difference in favour of SH. Good results in CH group using anoderma sparing and perianal anaesthetic infiltration at the end of the surgery was found. In all cases, pain relief was obtained only with standard analgesic drugs (NSAIDs). No chronic pain cases were observed in both groups. Only in SH group we report also 5 cases of thrombosis of external haemorrhoids and 7 perianal hematoma both solved with medical therapy There were no statistical significant differences between two groups about fever, incontinence to flatus, urinary retention, fecal incontinence, substenosis and anal burning. No cases of anal stenosis were observed. About late complications, most frequently observed were rectal prolapse and hemorrhoidal recurrence, especially after SH.

We found that stapler technique has significantly less requirement of analgesics on day 21, 6 weeks and 3 months compared to conventional technique. More satisfaction in the stapled haemorrhoidectomy group patients indicates that the merits of the stapled technique outweigh those of the conventional technique. Sachin *et al.* [12] compared two methods for short term outcomes. Hundred patients having grade 3 or 4 hemorrhoids and who fulfilled the criteria were included in the study from June 2012 to May 2014. Fifty patients underwent stapled hemorrhoidopexy and other fifty underwent open hemorrhoidectomy. All patients were reviewed immediately after surgery and at 1, 3, 6 weeks and 6 months post-operatively. The two groups were compared for duration of surgery, hospital stay, return to work and post-operative complications. The mean (S.D.) age was 40.06 (10.33) in our study. The majority of patients in the study were males and had grade 4 haemorrhoids. Stapled hemorrhoidopexy group had shorter duration of surgery, less postoperative pain and need for analgesia, shorter duration of hospital stay and earlier return to work and a high patient satisfaction as compared with open hemorrhoidectomy group. There were no major post-operative complications, recurrence, residual prolapse or incontinence in the follow up period of six months in the stapled group.

Because of the short period of this study, it is not possible to comment on the long term problems that may occur with the stapler technique. Also we were not able to conclude the recurrence associated with the two techniques.

## Conclusions

The followings merits of stapled haemorrhoidectomy make it a better technique than the conventional haemorrhoidectomy for managing grade II and grade III hemorrhoids such as lesser operating time, postoperative pain, analgesics required, complications like postoperative urinary retention, postoperative hemorrhage and urinary or faecal incontinence. Relatively pain free bowel actions in the immediate postoperative period, early discharge from hospital, early recovery, early return to work, greater patient satisfaction.

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