

## A Prospective Study of Stapled Versus Open Haemorrhoidectomy

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### Abstract

**Introduction:** Hemorrhoids are one of the commonest benign anorectal problems worldwide. The management of third and fourth degree hemorrhoids is usually surgical. The most commonly performed operation is hemorrhoidectomy. Milligan-Morgan hemorrhoidectomy has been the most popular among the various surgical techniques performed. **Materials and Methods:** A hospital based prospective comparative study was done among hemorrhoids patients undergoing surgical intervention for haemorrhoids in Department of General Surgery, Maheshwara Medical College & Hospital, Isnapur, Hyderabad. The study was conducted during October 2018 to March 2020. All patients with grade III and IV hemorrhoids and both sexes were included in the study. Written informed consent was gathered from the study participants before conducting the study. Participants who underwent Stapled Hemorrhoidectomy were considered as group A (n=40) and Open Hemorrhoidectomy (n=40) as group B. Patients were evaluated for socio economic characteristics, clinical presentation, and surgical outcome in terms of pain, operating time, hospital stay and complications. Postoperative pain measured by Visual Analog Scale (VAS) was used as the primary outcome measure. Secondary outcome measures studies are operative time, postoperative complications, hospital stay duration, time to first bowel motion, and return to normal activity. All clinical variables were obtained through an interview schedule. **Results:** In this present study there were 40 patients in Group A (Stapled method) and 40 patients in Group B (Open method). There were 47.5% and 42.5% patients below the age group of 40 years in group A and Group B respectively. 15% of the patients were above the age of 50 years in both the groups. It was found that hemorrhoids were more common in males in both of the groups, 82.5% in Group A and 85% in Group B. Most of the patients (62.5%) in Group A presented with grade IV hemorrhoids and 70% of the patients from Group B. **Conclusion:** Stapled haemorrhoidectomy reported less pain when compared to the conventional open method and allows early return to work. However, long-term complications are still unknown, operative time, duration of hospital stay and return to normal activity were satisfactory with stapler hemorrhoidectomy.

**Keywords:** Hemorrhoids, Stapled method, Open method.

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### Introduction

Hemorrhoids are one of the commonest benign anorectal problems worldwide. The management of third and fourth degree hemorrhoids is usually surgical[1].The most commonly performed operation is hemorrhoidectomy[2].Milligan-Morgan hemorrhoidectomy has been the most popular among the various surgical techniques performed[3]. Surgical hemorrhoidectomy has been reputed as being a painful procedure for a benign disease, and causes postoperative pain which needs about 2-3 days hospital stay and a convalescence of at least one month[4,5]. Stapled hemorrhoidectomy is a newer modality that represents a paradigm change in the treatment of hemorrhoids.<sup>6</sup> However it has been met with both skepticism and interest.<sup>7</sup> Stapled hemorrhoidectomy has better short-term outcomes, including shorter operating times, less postoperative pain, early return to work and greater patient satisfaction.

Stapled hemorrhoidectomy, later termed stapled hemorrhoidectomy (PPH), was first described in 1995. It has been associated with improved short-term outcomes, including less postoperative pain, shorter operating times, earlier return to work, and greater patient satisfaction.

The present study was designed to compare the short term results of stapled hemorrhoidectomy with Milligan- Morgan Hemorrhoidectomy

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### Materials and Methods

A hospital based prospective comparative study was done among hemorrhoids patients undergoing surgical intervention for haemorrhoids in Department of General Surgery, Maheshwara Medical College & Hospital, Isnapur, Hyderabad. The study was conducted during October 2018 to March 2020. All patients with grade III and IV hemorrhoids and both sexes were included in the study. Written informed consent was gathered from the study participants before conducting the study. Participants who underwent Stapled Hemorrhoidectomy were considered as group A (n=40) and Open Hemorrhoidectomy (n=40) as group B. Patients were evaluated for socio economic characteristics, clinical presentation, and surgical outcome in terms of pain, operating time, hospital stay and complications. Postoperative pain measured by Visual Analog Scale (VAS) was used as the primary outcome measure.

Secondary outcome measures studies are operative time, postoperative complications, hospital stay duration, time to first bowel motion, and return to normal activity. All clinical variables were obtained through an interview schedule.

**Exclusion criteria:** Patients with Grade I and II hemorrhoids, patients not willing to participate in the study and patients with other systemic diseases were excluded from the study.

**Statistical analysis:** Data was analyzed using Statistical Package for Social Sciences (SPSS for Windows V16). All descriptive data were described as frequency, percentage, mean and standard deviation. The significant difference in the mean values between the 2 groups was tested using the Student's t independent test. Statistical testing was undertaken considering p values <0.05 to be significant.

### Results

In this present study there were 40 patients in Group A (Stapled method) and 40 patients in Group B (Open method). There were 47.5% and 42.5% patients below the age group of 40 years in group A and Group B respectively. 15% of the patients were above the age of 50 years in both the groups. It was found that hemorrhoids were

more common in males in both of the groups, 82.5% in Group A and 85% in Group B. Most of the patients (62.5%) in Group A presented with grade IV hemorrhoids and 70% of the patients from Group B, shown in table 1.

**Table 1: Characteristics of patients in Stapler Vs Open Hemorrhoidectomy**

Age group	Group A (Stapler)	Group B (Open)
<40 years	19 (47.5)	17 (42.5)
41-50 years	15 (37.5)	17 (42.5)
51-60 years	6 (15)	6 (15)
Sex		
Male	33 (82.5)	34 (85)
Female	7 (17.5)	6 (15)
Severity of disease		
Grade III	15 (37.5)	12 (30)
Grade IV	25 (62.5)	28 (70)

Among the study groups the most common clinical presentation was found to be bleeding per rectum, 67.5% of the group A patients presented with perianal pain and 70% of the group B patients had

perianal pain. Itching and discharge was seen in 12.5% and 10% of the group A and group B patients respectively.

**Table 2: Comparison of pain by visual analogue scale (0 to 100- Mean  $\pm$  SD)**

Various days	Group A (Stapler)	Group B (Open)	P Value
Post operative Day 1	55.13 $\pm$ 20.60	62.81 $\pm$ 18.1	0.0805
Post operative Day 2	34.77 $\pm$ 16.34	49.12 $\pm$ 16.46	0.002
Post operative Day 3	22.83 $\pm$ 14.28	35.45 $\pm$ 16.25	0.004
Operating time (hrs)	27.43 $\pm$ 5.70	36.48 $\pm$ 6.80	0.001
First bowel Movement	16.90 $\pm$ 4.77	33.34 $\pm$ 12.48	0.001
Return to normal activities (days)	4.8 $\pm$ 1.6	7.1 $\pm$ 1.5	0.001

**Table 3: Complications in Stapler Vs Open Hemorrhoidectomy**

Complications	Group A (Stapler)	Group B (Open)	P Value
Incidence of complications	6/40 (15)	9/40 (22.5)	0.3931
<b>Individual complication</b>			
Bleeding	0	2/40 (2.5)	
Urinary retention	5/40 (12.5)	6/40 (15)	
Both Bleeding and urinary retention	1/40 (2.5)	2/40 (5)	

Incidence of complication was higher (22.5%) in conventional technique when compared to stapled Hemorrhoidectomy, but it was not statistically significant and there was no case of bleeding in stapler method. Urinary retention was found in 5 (12.5%) patients in stapler method whereas in open Hemorrhoidectomy 6 patients had retention, as shown in table 3.

#### Discussion

In this current study most of the patients who presented with hemorrhoids were males and they presented with grade 4 hemorrhoids. 80 to 87 % of the study population presented with bleeding rectum as a common presentation. During surgery it was noted the procedure for stapled technique does not excise the hemorrhoidal tissue at the anus, but, by excising a circumferential column of mucosa and sub mucosa from the lower rectum immediately above the hemorrhoids, and by stapling the defect, the prolapsed hemorrhoidal tissue is drawn back into a more physiological position within the anal canal[8]. In addition, the blood supply to the hemorrhoidal tissue is interrupted by excision and stapling of the sub mucosal layer in which these vessels run. The benefits of the stapled intervention are first, the interruption of inflow from the superior hemorrhoidal arteries to the internal hemorrhoids may contribute to improvement of hemorrhoidal symptoms by relieving vascular congestion. Second, the partial excision of the hemorrhoidal cushions themselves reduces the size of the internal hemorrhoids. Third, the resection of rectal mucosa reduces the tendency to prolapse and restores the internal cushions to their

normal physiological position[9]In a systematic review, the stapled hemorrhoidectomy technique was associated with less pain in the immediate postoperative period, but with a higher rate of residual prolapse[15]. Moreover, patients affected by third degree hemorrhoids were ten times more likely to develop recurrence and twice as likely to undergo further treatment to correct recurrent prolapses. Study by Nisar *et al* declared that conventional hemorrhoid surgery remained the gold-standard for the surgical management of hemorrhoids. The operating time was shorter in stapled hemorrhoidectomy group compared to excision method in our study and it was statistically significant which is similar to studies done by Bickchandani *et al.* by Gravié *et al.* and Mehigan *et al.* where the operating time was lesser in stapled method. The mean operative time in other studies across the world was generally shown to be lesser for stapler hemorrhoidectomy than for conventional open surgery[10]. In our study time to return for work was less in stapled group and it was found to be highly statistically significant. Similar to our study findings was the earlier return to work for the stapled hemorrhoidectomy patients as compared to the open hemorrhoidectomy group.

#### Conclusion

Stapled haemorrhoidectomy reported less pain when compared to the conventional open method and allows early return to work. However, long-term complications are still unknown, operative time, duration of hospital stay and return to normal activity were satisfactory with stapled hemorrhoidectomy.

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