

## ORIGINAL ARTICLE

# A Comparative Study Between Minimal Invasive Procedure for Haemorrhoids Stapler Haemorrhoidopexy and Open Haemorrhoidectomy

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**ABSTRACT**

**Introduction:** Hemorrhoids are one of the most common benign anorectal problems worldwide. Surgical intervention is necessary for advanced cases. Stapler Hemorrhoidopexy (SH) and conventional hemorrhoidectomy (CH) are widely used methods. This study aims to compare the efficacy of SH and CH in terms of operative time, pain, hospital stay, and complications.

**Aim:** A Comparative study between minimal invasive procedure for haemorrhoids Stapler Haemorrhoidopexy and open haemorrhoidectomy.

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**Methods:** The study is hospital-based comparative study was conducted over 12 months from September 2023 to August 2024, at the Department of Surgery, S.P. Medical College and P.B.M. Hospital, Bikaner. The study population comprises all patients who undergo hemorrhoidectomy surgery within the specified time frame, divided equally into SH and CH groups. Parameters like operative time, postoperative pain (VAS), hospital stay, complications, and recurrence were assessed.

**Results:** SH demonstrated shorter operative time ( $27.2 \pm 4.5$  min vs.  $39.1 \pm 5.4$  min), lower pain scores, and shorter hospital stays ( $1.4 \pm 0.3$  days vs.  $2.0 \pm 0.5$  days) compared to CH. Complication rates and recurrence were also lower in the SH group.

**Conclusion:** SH offers reduced operative time, less postoperative pain, and faster recovery, making it a superior choice for hemorrhoidectomy despite its higher cost and learning curve.

## KEYWORDS

• Hemorrhoids • Hemorrhoidectomy • External/Internal • Postoperative Pain • Stapler Haemorrhoidopexy

## INTRODUCTION

Hemorrhoidal disease is a common anorectal condition, affecting 2.9% to 27.9% of the global population.<sup>1</sup> It results from the enlargement and prolapse of hemorrhoidal cushions, leading to symptoms such as bleeding, pain, prolapse, and itching.<sup>2</sup> Hemorrhoids are classified into internal and external types based on their location.<sup>3</sup> Internal hemorrhoids arise above the dentate line and are typically painless but prone to bleeding, while external hemorrhoids develop below the dentate line and are often painful.<sup>4</sup> Internal hemorrhoids are further graded I to IV, with Grades III and IV often requiring surgery.<sup>5</sup>

The Conventional Hemorrhoidectomy (CH), including techniques like Milligan-Morgan and Ferguson, has been the standard surgical treatment for advanced hemorrhoids.<sup>6</sup> While effective, it is associated with significant postoperative pain, longer recovery, and complications such as anal stricture and wound infection.<sup>7</sup>

Stapler Hemorrhoidopexy (SH), introduced in the 1990s, is a minimally invasive alternative<sup>8</sup>. Unlike CH, which involves excising hemorrhoidal tissue, SH repositions and staples the prolapsed hemorrhoids, preserving the anal cushions.<sup>9</sup> Studies suggest SH provides shorter operative times, reduced

pain, faster recovery, and fewer complications compared to CH.<sup>10</sup>

This study aims to compare Stapler Hemorrhoidopexy and Conventional Hemorrhoidectomy in terms of operative time, postoperative pain, hospital stay, complications, and recurrence rates.<sup>11-12</sup> The findings will help determine the optimal surgical technique for managing advanced hemorrhoids, improving patient outcomes, and guiding clinical decision-making.<sup>13-15</sup>

### Aim

A Comparative study between minimal invasive procedure for haemorrhoids Stapler Haemorrhoidopexy and open haemorrhoidectomy.

## METHODOLOGY

### Study Design

This hospital-based study was conducted over 12 months from September 2023 to August 2024 at the Department of Surgery, S.P. Medical College and P.B.M. Hospital, Bikaner.

### Study Population

The study population comprises all patients who undergo hemorrhoidectomy surgery within the specified time frame. The sampling method involves including all eligible patients

who report to the Surgery Department during the study period.

1. Stapler Hemorrhoidopexy Group (SHG): 60 patients
2. Conventional Hemorrhoidectomy Group (CHG): 60 patients

### Inclusion Criteria

1. Patients aged  $\geq 18$  years
2. Diagnosed with Grade III or IV hemorrhoids
3. Medically and Mentally fit for surgery

### Exclusion Criteria

1. Grade I or II hemorrhoids
2. Patients with bleeding disorders or infections
3. Those unwilling to participate

### Procedure

The SH group underwent Stapler Hemorrhoidopexy using a circular stapler device. The CH group underwent excisional hemorrhoidectomy using electrocautery. Both procedures were performed under spinal anesthesia.

### Data Collection

Data was collected on the following parameters:

1. Operative time
2. Postoperative pain (measured using a Visual Analog Scale, VAS)
3. Length of hospital stay
4. Complications (bleeding, infection, anal stricture, and incontinence)
5. Recurrence rates

### Statistical Analysis

Data was analyzed using SPSS version 26. Continuous variables were expressed as mean  $\pm$  standard deviation, and categorical variables were expressed as percentages. Independent t-tests were used for comparing continuous variables, while chi-square tests were employed for categorical variables. A p-value  $< 0.05$  was considered statistically significant.

## RESULTS

Distribution of conventional hemorrhoidectomy (CHG) group and Stapler Hemorrhoidopexy

(SHG) group according to their age (years) and sex.

**Table 1:** Patient Demographics

Age Group (Years)	SHG (n=60)	CHG (n=60)	p-value
18-30	5(8.3%)	4(6.7%)	0.72
31-45	18(30%)	16(26.7%)	0.64
46-60	27(45%)	29(48.3%)	0.58
>60	10(16.7%)	11(18.3%)	0.82
Mean SD	44.8 $\pm$ 8.4	45.2 $\pm$ 8.1	0.72

Table 1 shows the age distribution of patients in the Stapler Hemorrhoidopexy (SHG) and Conventional Hemorrhoidectomy (CHG) groups. The majority of patients in both groups fall in the 46–60 age range. No statistically significant difference is observed between the two groups ( $p > 0.05$ ), ensuring comparability.

### Gender distribution of Patients

**Table 2:** Operative Parameters

Gender	SHG (n=60)	CHG (n=60)	p-value
Male	48 (80%)	42 (70%)	0.34
Female	12 (20%)	18 (30%)	0.34
Male: Female Ratio	4:1	3.5:1	0.34

This Table outlines the gender distribution in both groups. The proportion of male patients is higher in both SHG and CHG, with no statistically significant difference ( $p > 0.05$ ), indicating gender was not a confounding factor in the study.

Days of Hospital Stay	SHG (n=60)	CHG (n=60)	p-value
0-1 days	8(13.3%)	3(5%)	0.04
1-2 days	45(75%)	36(60%)	0.03
>2 days	7(11.7%)	21(35%)	0.02

Table shows hospital stay duration between the SHG and CHG groups. A significantly higher percentage of CHG patients required hospitalization for more than 2 days (35% vs. 11.7%), while more SHG patients were discharged within 1–2 days. SH demonstrated shorter operative time (27.2  $\pm$  4.5 min vs. 39.1  $\pm$  5.4 min) compared with CH group. The

p-values indicate a statistically significant difference in hospital stay duration, favoring SHG.

Parameter	SHG (Mean SD)	CHG (Mean SD)	p-value
Operative Time (Mins)	27.2±4.5	39.1±5.4	<0.001

Distribution of conventional hemorrhoidectomy (C) group and Stapler Hemorrhoidopexy (SHG) group according to their Days of Hospital Stay (DOHS) and Operative Time

Distribution of conventional hemorrhoidectomy (C) group and Stapler Hemorrhoidopexy (SHG) group according to VAS pain score

**Table 3:** Postoperative Pain (VAS Scores)

Time Point	SHG (Mean SD)	CHD (Mean SD)	P-value
12 hours	4.0±0.5	6.5±0.7	<0.001
24 hours	2.8±0.4	5.2±0.6	<0.001
48 hours	1.9±0.3	4.0±0.5	<0.001

Table 3 shows Stapler Hemorrhoidopexy (SHG) resulted in significantly lower pain levels at 12, 24, and 48 hours postoperatively compared to Conventional Hemorrhoidectomy (CHG). The difference is statistically significant ( $p < 0.001$ ), confirming that SHG is less painful than CHG.

Distribution of conventional hemorrhoidectomy (C) group and Stapler Hemorrhoidopexy (SHG) group according to their clinical feature

**Table 4:** Complications

Complications	SHG (n=60)	CHG (n=60)	p-value
Bleeding	1(1.7%)	7(11.7%)	0.04
Infection	2(3.3%)	11(18.3%)	0.08
Anal Stricture	0(0%)	0(0%)	--
Constipation	5(8.3%)	14(23.3%)	0.03
Prolapse	1(1.7%)	2(3.3%)	0.30

Table 4 compares postoperative complications between Stapler Hemorrhoidopexy (SHG) and Conventional Hemorrhoidectomy (CHG). SHG showed lower rates of bleeding (1.7% vs. 11.7%), constipation (8.3% vs. 23.3%), and prolapse (1.7% vs. 3.3%) compared to CHG. These findings suggest that SHG is associated

with fewer postoperative complications and a better recovery profile.

Distribution of conventional hemorrhoidectomy (C) group and Stapler Hemorrhoidopexy (SHG) group according to their recurrence rates

**Table 5:** Recurrence Rates

Follow-Up Period	SHG (%)	CHG (%)	p-value
7 days	0 (0%)	0 (0%)	–
15 days	0 (0%)	0 (1.7%)	–
1 Month	1 (1.7%)	0 (3.3%)	0.45
2 Months	1 (1.7%)	1 (5%)	0.50
3 Months	2 (3.3%)	2 (6.7%)	0.40

Table 5 presents recurrence of hemorrhoids between Stapler Hemorrhoidopexy (SHG) and Conventional Hemorrhoidectomy (CHG) over a three-month follow-up. Both groups had no recurrence at 7 and 15 days, while SHG showed slightly higher recurrence at 1, 2, and 3 months. The p-values (all  $>0.05$ ) indicate that the differences in recurrence rates between the two groups are not statistically significant, suggesting comparable long-term outcomes.

## DISCUSSION

Stapler Hemorrhoidopexy showed significant advantages over Conventional Hemorrhoidectomy in terms of operative time, postoperative pain, and length of hospital stay. These findings are consistent with studies by Lim *et al.* (2016) and Abo-hashem *et al.* (2010), which highlighted reduced pain and faster recovery with SH.

### Advantages of Stapler Hemorrhoidopexy

- Reduced Pain:** SH involves minimal excision of tissue, preserving the anal cushions and reducing nerve exposure, leading to significantly lower VAS scores.
- Shorter Hospital Stay:** Patients in the SH group were discharged earlier, with a mean stay of 1.3 days compared to 2.1 days in the CH group.
- Fewer Complications:** The SH group had lower rates of postoperative bleeding and incontinence, attributed to precise tissue handling and reduced thermal damage.

### Limitations of Stapler Hemorrhoidopexy

1. **Higher Costs:** The stapling device and disposable cartridges increase the cost of surgery compared to CH.
2. **Learning Curve:** SH requires specialized training and expertise, which may limit its widespread adoption.

### Comparison with Conventional Hemorrhoidectomy

Conventional Hemorrhoidectomy, while effective, remains associated with significant postoperative pain, longer recovery periods, and complications such as anal stricture. However, it is more cost-effective and universally available, making it a viable option for resource limited settings.

### CONCLUSION

Stapler Hemorrhoidopexy is a superior surgical technique for treating Grade III and IV hemorrhoids, offering reduced pain, quicker recovery, and fewer complications. However, its cost and learning curve remain challenges. Conventional Hemorrhoidectomy, though effective, is associated with significant postoperative morbidity. The choice of procedure should consider patient preferences, surgeon expertise, and institutional resources.

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