

# Early postoperative outcome of stapled haemorrhoidopexy vs open haemorrhoidectomy in second and third degree haemorrhoids: a comparative study

Shorna SR<sup>a</sup>, Khan MMH<sup>b</sup>, Haque ME<sup>c</sup>, Alam H<sup>d</sup>, Parvin M<sup>a</sup>, Sarwar S<sup>e</sup>

## ABSTRACT

**Background:** Haemorrhoidal disease (HD) is the most common anorectal disease affecting millions of people around the world and represents a major medical and socioeconomic problem, severely affecting patients' quality of life. This study aimed to compare the early outcome of stapled haemorrhoidopexy versus open haemorrhoidectomy for treatment of second and third degree haemorrhoids.

**Methods:** In this study, adult patients who presented to the general surgery outpatient clinics in BIRDEM General Hospital with symptomatic second and third degree hemorrhoid along with patients who agreed to continue follow-up for 6 weeks were included. This study was carried out from May 2023 to October 2024 after ethical clearance from Institutional review board of BIRDEM General Hospital. Patients follow up was on the first post operative day, after 1 week and after 6 weeks. This was a quasi experimental study, sampling method was convenience sampling and patients were treated by either stapled haemorrhoidopexy (n=32) or open haemorrhoidectomy (n=32). The total sample size was 64. Data were collected by using a questionnaire for the study by researcher herself. Data processing and analysis were done using SPSS (statistical package for social sciences), version 26.

**Results:** To evaluate the outcome of stapled haemorrhoidopexy (SH) and open haemorrhoidectomy (OH), 64 patients were compared for age, comorbidities and results. The average operation duration for OH was much lower ( $27.6 \pm 5.6$  minutes) than for SH ( $34.0 \pm 6.12$  minutes). In the SH group, 96.9% (31 patients) had intraoperative bleeding under 30 ml, compared to 87.5% (28 patients) in the OH group, although this difference was not statistically significant ( $p=0.355$ ). The SH group had significantly lower pain scores on the 1st and 7th postoperative days ( $3.97 \pm 0.47$ ) and ( $2.19 \pm 0.78$ ) compared to the OH group ( $4.84 \pm 0.98$  and  $2.94 \pm 0.87$ , respectively) ( $p=0.001$ ). All OH patients needed sitz bath for more than 7 days, while only 6.3% of SH patients did ( $p=0.001$ ). The SH group had no wound infections on the 7th postoperative day, compared to 12.5% in the OH group ( $p=0.162$ ). The SH group had a shorter hospital stay ( $1.09 \pm 0.2$  days) than the OH group ( $1.23 \pm 0.4$  days), however the difference was not statistically significant ( $p=0.182$ ). The SH group returned to normal activities significantly earlier ( $2.63 \pm 0.8$  days) than the OH group ( $4.28 \pm 1.2$  days) ( $p=0.001$ ). SH patients were 37.5% satisfied and rated as excellent with their findings, compared to 9.4% of OH patients.

**Conclusion:** Overall, stapled haemorrhoidopexy demonstrated advantages in terms of postoperative pain, recovery time, and patient satisfaction, whereas open haemorrhoidectomy showed shorter operative times.

**Key words:** stapled haemorrhoidopexy, open haemorrhoidectomy, haemorrhoid.

*BIRDEM Med J* 2025; 15(3): 103-110

DOI: <https://doi.org/10.3329/birdem.v15i3.84510>

---

## Author information

- a. Shanjida Rahman Shorna, Moushumi Parvin, Resident (General Surgery), BIRDEM General Hospital, Shahbag, Dhaka, Bangladesh.
- b. Md. Manir Hossain Khan, Professor, Department of General Surgery, Bangladesh Medical University (BMU), Shahbag, Dhaka, Bangladesh.
- c. Md. Ezharul Haque, Professor, Department of General Surgery, BIRDEM General Hospital, Dhaka, Bangladesh.
- d. Hasina Alam, Assistant Professor, Department of General Surgery, BIRDEM General Hospital, Dhaka, Bangladesh.
- e. Shifat Sarwar, Indoor Medical Officer, Islami Bank Hospital, Dhaka, Bangladesh.

**Address of correspondence:** Shanjida Rahman Shorna, Resident (General Surgery), BIRDEM General Hospital, Shahbag, Dhaka-1000, Bangladesh, Email: [srs.shorna@gmail.com](mailto:srs.shorna@gmail.com)

**Received:** November 19, 2024

**Revision received:** July 16, 2025

**Accepted:** September 16, 2025

## INTRODUCTION

Haemorrhoidal disease (HD) is the most common anorectal disease affecting millions of people around the world<sup>1</sup>. Haemorrhoids or haemorrhoidal columns are submucosal cushions containing venules, arterioles, smooth muscle fibers and with the internal anal sphincter, they are essential in the maintenance of anal continence by providing soft tissue support and keeping the anal canal closed tightly<sup>2</sup>. Haemorrhoids typically manifest with painless rectal bleeding with faeces, either with or without prolapsing anal tissue<sup>3</sup>. Only bleeding occurs in first-degree haemorrhoids but here prolapse does not occur. In second-degree, prolapse occurs that reduces spontaneously. In the third degree, there is prolapse that requires manual reduction, however in the fourth degree, the prolapse is permanent<sup>4</sup>.

The global incidence of symptomatic haemorrhoids is estimated to be 4.4% among the general population<sup>5</sup>. Globally, between 50% to 85% of individuals experience haemorrhoids<sup>6</sup>. The study findings shown a resemblance to the research conducted in Korea (14.4%)<sup>7</sup>. Egypt and Austria have a higher prevalence, with rates of 18% and 38.9%, respectively<sup>8</sup>. Not many pure prevalent studies are available in Bangladesh. One regional study conducted at Rajshahi Medical College Hospital, observed the overall prevalence of haemorrhoids, which was found to be 52.6%<sup>9</sup>.

Although there are several surgical techniques for HD, debates about the best choice still remain. Indeed, despite modifications and progress in the HD surgical techniques, postoperative pain, discomfort, mucous discharge, daily activity limitation along with recurrence remain the major drawbacks<sup>10</sup>. To reduce tissue trauma, some surgeons use automatic haemorrhoid ligation devices to perform rubber banding or elastic thread ligation at the base of the haemorrhoid<sup>11</sup>.

The conventional open haemorrhoidectomy (OH) is associated with postoperative pain and discomfort are still of major concern. Instead, the newly developed techniques lead to less postoperative pain and discomfort<sup>12</sup>. The postoperative complications that a patient may experience after haemorrhoidectomy, such as variable degrees of pain, urinary retention, bleeding, incontinence, wound infection, abscess formation, fistula formation, anal fissure, stenosis, and recurrence<sup>13,14</sup>.

Stapled haemorrhoidopexy (SH) is performed with a circular stapler device, which circumferentially disconnects the mucosa and submucosa above the dentate line. This procedure has a slightly higher recurrence rate, but patients return to normal activity more quickly after SH than after a traditional haemorrhoidectomy<sup>15,16</sup>. After SH for haemorrhoids, annular anastomosis might result in annular scarring and stapler nail residue, which may lead to postoperative complications, such as anastomotic stenosis of anal canal<sup>17</sup>. Laser haemorrhoidoplasty (LH) is a newly developed minimally invasive and painless one day surgery technique for the treatment of symptomatic haemorrhoids, influencing the shrinkage of the haemorrhoid<sup>18</sup>.

Overall, this study aimed to compare the early outcome of stapled haemorrhoidopexy versus open haemorrhoidectomy for the treatment of second and third degree haemorrhoids. We assessed pain status between stapled haemorrhoidopexy and open haemorrhoidectomy by visual analog scale, measured the perioperative bleeding both group, estimated the time required for resumption of usual activity after surgery and compared the overall patient satisfaction after stapled haemorrhoidopexy and open haemorrhoidectomy procedure. Stapled haemorrhoidopexy and open haemorrhoidectomy procedures are regularly practiced worldwide. Both the procedures are popular in our country too. However, there are not enough study showing the comparison between the outcome of these both procedures in our country. This study was conducted in a tertiary care hospital and a post-graduate training institute in Bangladesh, which will help to learn about the outcomes and complications of these methods. Thus, allowing us to make the best care decision for people suffering from this disease. This study was designed to compare the early outcome of stapled haemorrhoidopexy and open haemorrhoidectomy for the treatment of second and third degree haemorrhoids.

## METHODS

In this quasi experimental study, adult patients who presented to the general surgery outpatient clinics in BIRDEM General hospital with symptomatic second and third degree hemorrhoid along with patients who agreed to continue follow-up for 6 weeks were included. Patients

with external thrombosed haemorrhoids, concomitant perianal fistula or abscess or anal stenosis, anorectal malignancy, unfit patients either for surgery or anaesthesia were excluded. This study was carried out from May 2023 to October 2024 after ethical clearance from Institutional review board of BIRDEM Hospital. Sampling method was convenience sampling and patients were treated by either stapled haemorrhoidopexy (n=32) or open haemorrhoidectomy (n=32). The total sample size was 64. The operative time was recorded by the operating theatre nurse, calculated by the time just before the procedure begun and time when all instrument and sponge count completed. All patients received a standard medication package postoperatively. They were advised to take similar injectable antibiotics and analgesics during initial 24 hours postoperatively and switched to oral medications later. Patients were advised to take warm sitz bath thrice a day and after each bowel motion. Patients follow up was on the first post operative day, after 1 week and after 6 weeks. Data were collected by using a questionnaire for the study by researcher herself. Data processing and analysis were done using SPSS (statistical package for social sciences), version 26.

## RESULTS

In this study comparing surgical techniques involving 64 patients, the distribution of age and sex between the two groups, SH (n=32) and OH (n=32), was analyzed. Among the SH group, the highest prevalence in the SH group was among patients aged 20-40 years, accounting for 43.8% (14 patients). In contrast, the highest prevalence in the OH group was among patients aged 40-60 years, representing 62.6% (20 patients) (Table I).

**Table I.** Distribution of the participants according to sociodemographic characteristics

Variables	Surgical techniques (n=64)		P value
	SH (n=32)	OH (n=32)	
Age			
20-40	14 (43.8%)	7 (21.9%)	0.071
40-60	11 (34.4%)	20 (62.6%)	
>60	7 (21.9%)	5 (15.6%)	
Sex			
Male	22 (68.8%)	20 (62.5%)	0.599
Female	10 (31.3%)	12 (37.5%)	

The data on various occupations indicates that there are 9 individuals in business, 20 service holders, 5 students, 18 housewives, and 13 unemployed individuals. The data on comorbidities among individuals indicates that 14 individuals have no comorbidity, 24 individuals have diabetes mellitus (DM), 2 individuals have hypertension (HTN), 1 individual have ischemic heart disease (IHD), and 23 individuals have multiple comorbidities.

Regarding the degree of disease, second-degree condition was more prevalent among the SH group 51.7% (15 individuals). In contrast, 3<sup>rd</sup> degree was more common (71.9% (23 individuals) in the OH group.

In a study comparing surgical techniques between two groups, SH (n=32) and OH (n=32), the duration of operation was analyzed. The mean duration of operation was significantly lower in OH group (27.6±5.6 min) than SH group (34.0±6.12 minutes). (p value <.001)

The data presents the comparison of per-operative bleeding between two surgical techniques, SH and OH, among 64 participants. In the SH group (n=32), 96.9% (31 participants) had less than 30 ml of bleeding, while 3.1% (1 participant) had more than 30 ml. In the OH group (n=32), 87.5% (28 participants) experienced less than 30 ml of bleeding, whereas 12.5% (4 participants) had more than 30 ml. The P-value for this comparison is 0.355, indicating no statistically significant difference in bleeding between the two surgical techniques. (Table II).

**Table II.** Distribution of the participants according to per-operative bleeding

Variables	Surgical techniques (n=64)		P value
	SH (n=32)	OH (n=32)	
Per-operative bleeding			
<30 ml	31 (96.9%)	28 (87.5%)	0.355
>30 ml	1 (3.1%)	4 (12.5%)	

Post-operative hemorrhage (7<sup>th</sup> POD) rates were 3.1% in the SH group and none in the OH group, and no significant difference was found (P = 1.0). There was a significant difference in use of tranexamic acid use between two groups. Tranexamic acid was used more in OH technique (96.9%) than SH group (40.6%) (p=0.001)

Pain assessment by VAS revealed that the SH group reported less pain on the 1st POD (3.97±0.47) and 7th

POD ( $2.19 \pm 0.78$ ) compared to the OH group ( $4.84 \pm 0.98$  and  $2.94 \pm 0.87$ , respectively), both with significant differences ( $P = 0.001$ ) (Table III).

**Table III.** Distribution of the participants according to post-operative pain

Variables	Surgical techniques (n=64)		P value
	SH (n=32)	OH (n=32)	
Pain assessment by VAS			
1 <sup>st</sup> POD	3.97±0.47	4.84±0.98	0.001
7 <sup>th</sup> POD	2.19±0.78	2.94±0.87	0.001
P value	0.001	0.001	

The SH group had a shorter duration of hospital stay ( $1.09 \pm 0.2$ ) compared to the OH group ( $1.23 \pm 0.4$ ), but the difference was not statistically significant ( $P = 0.182$ ). In terms of resuming usual activities, the SH group returned to their usual activities earlier ( $2.63 \pm 0.8$  days) compared to the OH group ( $4.28 \pm 1.2$  days), with a significant difference ( $P = 0.001$ ) (Table IV).

**Table IV.** Distribution of the participants according to duration of hospital stay and usual activity resumption

Variables	Surgical techniques (n=64)		P value
	SH (n=32)	OH (n=32)	
Duration of hospital stay	$1.09 \pm 0.2$	$1.23 \pm 0.4$	0.182
Usual activity resumption	$2.63 \pm 0.8$	$4.28 \pm 1.2$	0.001

All patients of OH group needed sitz bath for more than 7 days whereas only 6.3% of SH technique required sitz bath beyond 7 days ( $p = 0.001$ ). Laxative use was more common in the OH group (56.3%) than SH group (37.5%), though this difference was not statistically significant ( $P = 0.132$ ). The SH group also had a lower rate of urinary retention on the 1st POD (6.3%) compared to the OH group (15.6%), though this difference was not statistically significant ( $P = 0.426$ ). Additionally, the SH group experienced no wound infection on the 7th POD compared to the OH group (12.5%), but this difference was also not statistically significant ( $P = 0.054$ ) (Table V).

**Table V.** Distribution of the participants according to other post-operative outcomes

Variables	Surgical technique (n=64)		P
	SH (n=32)	OH (n=32)	value
Sitz bath			
Upto 7 days	30 (93.8%)	0	<b>0.001</b>
More than 7 days	2 (6.3%)	32 (100%)	
Laxative use			
Yes	12 (37.5%)	18 (56.3%)	0.132
No	20 (62.5%)	14 (43.7%)	
Urinary retention (1 <sup>st</sup> POD)			
Yes	2 (6.3%)	5 (15.6%)	0.426
No	30 (93.8%)	27 (84.4%)	
Wound infection (7 <sup>th</sup> POD)			
Yes	0	4 (12.5%)	0.054
No	32 (100%)	28 (87.5%)	

In the SH group, 37.5% of patients rated their results as excellent, compared to only 9.4% in the OH group. For very good outcomes, the SH group had 53.1% of patients, while the OH group had 43.8%. The SH group had fewer patients rating their results as good (6.3%) compared to the OH group (46.9%), and only 1 patient (3.1%) in the SH group rated their results as not satisfactory, whereas the OH group had none in this category (Table VI).

**Table VI.** Distribution of the participants according to patient satisfaction

Variables	Surgical techniques (n=64)		P value
	SH (n=32)	OH (n=32)	
Excellent	12 (37.5%)	3 (9.4%)	0.001
Very good	17 (53.1%)	14 (43.8%)	
Good	2 (6.3%)	15 (46.9%)	
Not satisfactory	1 (3.1%)	0	

## DISCUSSION

In this study involving 64 patients who underwent either stapled haemorrhoidopexy (SH) or open haemorrhoidectomy (OH), the distribution of age and comorbidities, as well as various outcomes, were analyzed to assess the effectiveness of these surgical techniques.

Among the patients undergoing SH (n=32), the highest prevalence was observed in those aged 20-40 years (43.8%, 14 patients). Conversely, the OH group (n=32) had the highest prevalence in the 40-60 years age range (62.6%, 20 patients). The age profile is comparable to previous study in 2016, where the mean age was 52.6 years ( $\pm 14.4$  years)<sup>12</sup> and another study in 2020 shows the age range was between 22-74 years and median was 39 years<sup>19</sup>. The SH group predominantly had second-degree haemorrhoids (51.7%, 15 individuals), whereas the OH group had a higher prevalence of third-degree haemorrhoids (71.9%, 23 individuals). Though not significant and exactly comparable, similar distribution was observed in 2021 in a previous study<sup>1</sup>.

The comorbidities among individuals indicates that 14 individuals (22%) have no comorbidity, 24 individuals (37%) have diabetes mellitus (DM), 2 individuals (3%) have hypertension (HTN), 1 individual (2%) have ischemic heart disease (IHD), and 23 individuals (36%) have multiple comorbidities.

In terms of symptoms, 53.10% experienced painless per rectal bleeding, 40.60% had bleeding with a protruding mass, and 6.30% had bleeding with constipation. The presenting complaints are similar to the study of in 2016 where, in order to, evaluate the effectiveness of stapled haemorrhoidopexy (SH) a single-institute study was conducted, analyzing high-volume results. A total of 1,144 consecutive patients, underwent SH for prolapsing haemorrhoids from January 2007 to December 2013. The surgery was indicated due to prolapsing haemorrhoids in all cases, with some patients also experiencing bleeding (7.9%), itching (8.4%), and anal wetness (8.3%)<sup>12</sup>. Similar result was also found in a previous study in 2020<sup>23</sup>.

The SH group predominantly had second-degree haemorrhoids (51.7%, 15 individuals), whereas the OH group had a higher prevalence of third-degree haemorrhoids (71.9%, 23 individuals). Though not significant and exactly comparable, similar distribution was observed by the study in 2021<sup>1</sup>.

The mean duration of surgery was significantly shorter for OH ( $27.6 \pm 5.6$  minutes) compared to SH ( $34.0 \pm 6.12$  minutes). The operating time of SH was found to be around 35 minutes on one study<sup>19</sup>. Our findings were also similar by previous study in 2016<sup>20</sup>.

Intraoperative bleeding was less in the SH group, with 96.9% (31 patients) experiencing less than 30 ml of bleeding compared to 87.5% (28 patients) in the OH group. However, the difference was not statistically significant ( $p=0.355$ ). A study in 2023 found similar result in their study. They had observed, bleeding was more in OH group compared to SH<sup>21,22</sup>. Although not totally comparable but another study in 2021 where, thirty patients who underwent SH were prospectively compared with 30 patients who underwent ligasure haemorrhoidectomy at Ain Shams University Hospitals between January 2019 and January 2020, with a follow-up period of one year. They found blood loss be to less in stapled haemorrhoidopexy than comparative group<sup>1</sup>.

Post-operative hemorrhage (7<sup>th</sup> POD) rates were 3.1% in the SH group and none in the OH group, and although no significant difference was found ( $P = 1.0$ ). But a prospective observational study was conducted at Dr. BRAM Hospital, Raipur, to evaluate the outcomes of open versus stapled haemorrhoidectomy, focusing on postoperative pain, bleeding, duration of surgery and hospital stay. The study, conducted from August 2017 to July 2018, where they involved 32 patients where 14 underwent stapled haemorrhoidopexy and 18 underwent open haemorrhoidectomy. Most participants were male and presented with grade 4 haemorrhoids. They observed that bleeding was prevalent in SH group compared to OH<sup>23</sup>.

Pain assessment showed that the SH group reported significantly lower pain scores on the 1st postoperative day ( $3.97 \pm 0.47$ ) and the 7th postoperative day ( $2.19 \pm 0.78$ ) compared to the OH group ( $4.84 \pm 0.98$  and  $2.94 \pm 0.87$ , respectively) with significant differences ( $p=0.001$ ). A single-centered observational follow-up study was conducted on patients undergoing surgery for haemorrhoids between 2016 and 2017, including a total of 106 patients. Out of these, 95 cases were analyzed where, 59 cases in the open haemorrhoidectomy group and 36 in the stapled haemorrhoidopexy group. Postoperative pain was also notably greater in the open group ( $p<0.005$ )<sup>24</sup>. Many studies also observed that pain score was less in SH group<sup>1,10,25-29</sup>.

The use of tranexamic acid was significantly higher in the OH group (96.9%) compared to the SH group (40.6%) ( $p=0.001$ ). All OH patients required a sitz bath for more than 7 days, whereas only 6.3% of the SH group needed sitz baths beyond 7 days ( $p=0.001$ ).

Regarding postoperative complications, urinary retention on the 1st postoperative day was less frequent in the SH group (6.3%) compared to the OH group (15.6%), although this difference was not statistically significant ( $p=0.426$ ). In a previous study in 2017, found that early complications of SH were fecal urgency (13.8%), urinary retention (22%), and rectal bleeding (2.77%).

Wound infections on the 7th postoperative day was absent in the SH group compared to the OH group (12.5%), but this difference was not statistically significant ( $p=0.162$ ). The aim of a clinical trial in 2022, was to determine the most effective treatment method for third and fourth-degree primary haemorrhoids. The study included 36 patients with symptomatic haemorrhoids, who were divided into two groups. Here, the Group 1 underwent Stapled Haemorrhoidopexy, and Group 2 underwent Harmonic Scalpel Haemorrhoidectomy. Both groups were monitored weekly for the first four postoperative weeks and observed that prevalence of post operative wound infection was more in SH group than comparative group<sup>19</sup>. Another study in 2012 found that there SH has similar risk of wound infection as OH<sup>26</sup>.

The SH group had a significantly shorter duration of hospital stay ( $1.09 \pm 0.2$  days) compared to the OH group ( $1.23 \pm 0.4$  days), though this difference was not statistically significant ( $p=0.182$ ). Similar results were observed by many other the studies, where they also observed shorter hospital stay in SH<sup>10,20,29,30</sup>. The SH group also returned to their usual activities earlier ( $2.63 \pm 0.8$  days) compared to the OH group ( $4.28 \pm 1.2$  days), with a significant difference ( $p=0.001$ ). A study conducted in 2016, also found that patients who received SH procedure, reverted back to normal activity earlier than OH procedure<sup>11</sup>.

In terms of patient satisfaction, 37.5% of SH patients rated their results as excellent, compared to 9.4% in the OH group. For very good outcomes, 53.1% of the SH group rated their results as such, whereas 43.8% of the OH group did. The SH group had fewer patients rating their results as good (6.3%) compared to the OH group (46.9%). Notably, no patients in the OH group rated their results as not satisfactory, compared to SH group (3.1%). Similar increased satisfaction with SH procedure than OH was also observed by previous study<sup>20,25</sup>.

Overall, SH demonstrated advantages in terms of postoperative pain, recovery time, early return to work and patient satisfaction, whereas OH showed shorter operative times. The overall result was also supported by a systemic review of 30 similar articles where SH was found to be a safe procedure. This systematic review aimed to compare the surgical outcomes of stapled haemorrhoidopexy (SH) and open haemorrhoidectomy (OH) over a 20-year period. The study involved extracting randomized controlled trials published between January 1998 and January 2019 from PubMed, with a focus on analyzing the short-term and long-term complications associated with these two techniques. The outcomes were also compared across two time periods: 1998–2008 (period 1) and 2009–2019 (period 2), to assess any trends over time. The results indicated that SH is a safe procedure, showing statistically significant reductions in operative time in 13 out of 21 studies during period 1 and in 3 out of 8 studies during period 2, less intraoperative bleeding in 3 out of 7 studies in period 1 and in 1 out of 1 study in period 2, and consistently less early postoperative pain on the visual analogue scale in 12 out of 15 studies in period 1 and in 4 out of 5 studies in period 2. These benefits contributed to shorter hospital stays in 12 out of 20 studies in period 1 and in 2 out of 2 studies in period 2. However, these advantages come at the expense of higher costs. In the long term, while chronic pain levels were similar between SH and OH patients, patient satisfaction with SH appeared to decline over time, with greater satisfaction observed in OH patients at the two-year follow-up. The review concludes that while SH shows potential advantages, particularly in the short term, there is currently insufficient evidence to support its routine use in clinical practice<sup>16</sup>. Another study in the context of SH was found to be a safe procedure, associated with statistically reduced operative time, statistically less intraoperative bleeding and consistently less early postoperative pain on the visual analogue scale resulting in shorter hospital stay<sup>31</sup>.

Haemorrhoids can be troublesome sometimes with intermittent bleeding and perianal discharge which can be a cause of concern to the patient. Haemorrhoid offers a variety of surgical modalities of treatment. Stapled haemorrhoidopexy has less complications and good patient compliance<sup>32,33</sup>. However, SH is related to high rate of recurrence and also expensive<sup>34</sup>. It is also

recommended that along with surgical management, patients should be advised of dietary and lifestyle modifications to prevent a recurrence.

## Conclusion

Patients in the stapled haemorrhoidopexy group reported significantly lower pain scores, shorter duration of hospital stay and returned to their usual activities earlier than the open haemorrhoidectomy group, indicating a quicker recovery. The incidence of intraoperative bleeding was lower in the SH group. Patient satisfaction was higher in the SH group. Patients requiring surgical treatment of hemorrhoids, stapled hemorrhoidopexy is recommended over open hemorrhoidectomy in cases where the technique is appropriate. However, the choice of procedure should also consider individual patient factors, surgeon expertise and cost of procedure.

**Authors' contribution:** SRS, MEH planed the research. SRS drafted manuscript. All authors read and approved manuscript.

**Conflicts of interest:** Nothing to declare

**Funding:** Self-funding.

## REFERENCES

1. Elhefny AM, Shoka AA, Elghandour AM, Hamed MA. A comparative study between stapled hemorrhoidopexy and laser hemorrhoidoplasty in the treatment of second-degree and third-degree hemorrhoids. *The Egyptian Journal of Surgery*. 2021 Oct 1;40(4):1046-55.
2. Maloku H, Gashi Z, Lazovic R, Islami H, Juniku-Shkololli A. Laser emorrhoidoplasty procedure vs open surgical hemorrhoidectomy: a trial comparing 2 treatments for hemorrhoids of third and fourth degree. *Acta Informatica Medica*. 2014 Dec;22(6):365.
3. Khan MA, Chowdri NA, Parray FQ, Wani RA, Mehraj A, Baba A, Laway M. Classificac, ão “PNR-Bleed” e escore de gravidade das hemorróidas-uma nova tentativa de classificac, ão de hemorróidas. *Journal of Coloproctology (Rio de Janeiro)*. 2020 Dec 7;40:398-403.
4. O'Connell PR, McCaskie AW, Sayers RD. *Bailey & Love's short practice of surgery*. CRC Press; 2023 Mar 30.
5. Kibret AA, Oumer M, Moges AM. Prevalence and associated factors of hemorrhoids among adult patients visiting the surgical outpatient department in the University of Gondar Comprehensive Specialized Hospital, Northwest Ethiopia. *Plos one*. 2021 Apr 20;16(4):e0249736.
6. Ali SA, Shoeb MF. Study of risk factors and clinical features of hemorrhoids. *International Surgery Journal*. 2017 May 24;4(6):1936-9.
7. Lee JH, Kim HE, Kang JH, Shin JY, Song YM. Factors associated with hemorrhoids in korean adults: korean national health and nutrition examination survey. *Korean journal of family medicine*. 2014 Sep;35(5):227.
8. ElBatea H, Enaba M, ElKassas G, El-Kalla F, Elfert AA. Indications and outcome of colonoscopy in the middle of Nile delta of Egypt. *Digestive diseases and sciences*. 2011 Jul;56:2120-3.
9. Uddin MZ, Sadik MG, Sarkar MH, Islam MS. Mst. Mosfika Kowsari. Risk Factors for Hemorrhoids on Screening Proctoscopy at Rajshahi Medical College Hospital in Bangladesh: A Prospective Study. *SAS J Surg*. 2023 Sep;9:804-9.
10. Nada EF, Mohamed H, Mohammad H, Elhendawey EI. A Comparative Study between Stapled and Harmonic Hemorrhoidectomy for Treatment of Third-and Fourth-Degree Piles. *The Egyptian Journal of Hospital Medicine*. 2022 Oct 1;89(1):4985-92.
11. Albuquerque A. Rubber band ligation of hemorrhoids: A guide for complications. *World journal of gastrointestinal surgery*. 2016 Sep 9;8(9):614.
12. Voigtsberger A, Popovicova L, Bauer G, Werner K, Weitschat-Benser T, Petersen S. Stapled hemorrhoidopexy: functional results, recurrence rate, and prognostic factors in a single center analysis. *International journal of colorectal disease*. 2016 Jan;31:35-9.
13. Knight JS, Senapati A, Lamparelli MJ. National UK audit of procedure for prolapsing haemorrhoids on behalf of the Association of Coloproctology of Great Britain and Ireland. *Colorectal Disease*. 2008 Jun;10(5):440-5.
14. Joshi GP, Neugebauer EA. Evidence-based management of pain after haemorrhoidectomy surgery. *Journal of British Surgery*. 2010 Aug;97(8):1155-68.
15. Yang H, Shi Z, Chen W, Chen T, Ding P, Wang J, Gao J. Modified ligation procedure for prolapsed haemorrhoids versus stapled haemorrhoidectomy for the management of symptomatic haemorrhoids (MoLish): randomized clinical trial. *BJS open*. 2022 Jun 1;6(3):zrac064.
16. Ruan QZ, English W, Hotouras A, Bryant C, Taylor F, Andreani S, Wexner SD, Banerjee S. A systematic review of the literature assessing the outcomes of stapled haemorrhoidopexy versus open haemorrhoidectomy. *Techniques in Coloproctology*. 2021 Jan;25:19-33.
17. Ji L, Li L, Weng L, Hu Y, Huang H, Wei J. Tissue selecting technique mega-window stapler combined with anal canal epithelial preservation operation for the treatment of severe prolapsed hemorrhoids: a study protocol for a randomized controlled trial. *Medicine*. 2020 Nov 6;99(45):e23122.
18. Naderan M, Shoar S, Nazari M, Elsayed A, Mahmoodzadeh H, Khorgami Z. A randomized controlled trial comparing laser intra-hemorrhoidal coagulation and Milligan-

- Morgan hemorrhoidectomy. *Journal of investigative surgery*. 2017 Sep 3;30(5):325-31.
19. Mondal SK, Roy S, Uddin MS. Promising new technique for treatment of hemorrhoids-Our experience. *Journal of Surgical Sciences*. 2017;21(2):65-9.
  20. Rakhonde AK, Chanchlani R, Narkhede V. Haemorrhoidectomy-stapler versus conventional (open): our experience. *International Surgery Journal*. 2016 Dec 8;3(2):729-35.
  21. Salama MM, El Hossainy AF, Rihan M. Comparative study between stapled and open hemorrhoidectomy results with one-year follow-up. *The Egyptian Journal of Surgery*. 2023 Jul 1;42(3):627-34.
  22. Huang WS, Chin CC, Yeh CH, Lin PY, Wang JY. Randomized comparison between stapled hemorrhoidopexy and Ferguson hemorrhoidectomy for grade III hemorrhoids in Taiwan: a prospective study. *International journal of colorectal disease*. 2007 Aug;22:955-61.
  23. Singh M, Agarwal A, Pandey K. Evaluation of outcome in open and stapler haemorrhoidectomy in grade III/IV haemorrhoids. *International Surgery Journal*. 2020 Sep 23;7(10):3294-8.
  24. Aggarwal N, Agrawal S, Ray JP. Stapled haemorrhoidopexy vs. open haemorrhoidectomy: a comparative study. *International Surgery Journal*. 2019 Mar 26;6(4):1259-63.
  25. Rakhonde AK, Chanchlani R, Narkhede V. Haemorrhoidectomy-stapler versus conventional (open): our experience. *International Surgery Journal*. 2016 Dec 8;3(2):729-35.
  26. Ammaturo C, Tufano A, Spiniello E, Sodano B, Iervolino EM, Brillantino A, Braccio B. Stapled haemorrhoidopexy vs. Milligan-Morgan haemorrhoidectomy for grade III haemorrhoids: a randomized clinical trial. *Il Giornale di Chirurgia-Journal of the Italian Surgical Association*. 2012 Oct 1;33(10):346-51.
  27. Jalil MA, Hassan ME, Kobra K, Faruk MO, Aziz MM. Stapled and open haemorrhoidectomy; A comparative study of early outcome. *Bangladesh J Med Sci*. 2022;21(2):438-443. doi:10.3329/bjms.v21i2.58079.
  28. Wani MD, Mir SA, Javaid S, Watali Y. Open hemorrhoidectomy versus stapler hemorrhoidopexy: A prospective study. *Arch Clin Exp Surg*. 2017;6:66-73.
  29. Towlati Kashani SM, Mehrvarz S, Mousavi Naeni SM, Erfanian R. Milligan-Morgan hemorrhoidectomy vs stapled hemorrhoidopexy. *Trauma Mon*. 2012;16(4):175-7.
  30. Anitha L, Nair CK, Edwin JS. A Comparative Study on Post-operative Outcomes of Stapled Haemorrhoidopexy versus Milligan-Morgan Haemorrhoidectomy in Patients above 60 Years. *Kerala Surgical Journal*. 2023 Jul 1;29(2):75-8.
  31. Ho YH, Buettner PG. Open compared with closed haemorrhoidectomy: meta-analysis of randomized controlled trials. *Techniques in coloproctology*. 2007 Jun;11:135-43.
  32. Kumar M, Pankaj D, Kumar N, Abhishek K, Bhushan V, Tajdar Y, Kumari P, Muni S. A prospective study comparing stapler and open surgical technique of hemorrhoidectomy. *Cureus*. 2023;15(3):e36304.
  33. Sachin ID, Muruganathan OP. Stapled hemorrhoidopexy versus open hemorrhoidectomy: a comparative study of short term results. *International Surgery Journal*. 2017 Jan 25;4(2):472-8.
  34. Samee MU, Qammar SM, Saifullah W, Iqbal E, Javed N, Ubaid Ullah S. Stapled hemorrhoidopexy versus traditional hemorrhoidectomy: a comparative study of two procedures in advanced hemorrhoids. *P J M H S*. 2018;12(4):1548-1551.