

Treatment outcomes of stapled hemorrhoidopexy for hemorrhoidal disease: A single-center study

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ABSTRACT

Objectives: To describe the clinical and paraclinical characteristics and evaluate treatment outcomes of hemorrhoidal disease managed with stapled hemorrhoidopexy (Longo procedure) at Hai Phong University of Medicine and Pharmacy Hospital. **Methods:** A retrospective descriptive study was conducted on 64 patients who underwent stapled hemorrhoidopexy between January and June 2025. Data were collected from medical records and postoperative follow-up using a standardized form. **Results:** Mean age was 49.41 ± 16.03 years and males accounted for 64.1%. Prolapse was present in 100% of cases, anal pain in 70.3%, and bleeding in 64.1%; 76.6% had at least two symptoms. Grade III hemorrhoids accounted for 67.2% and grade IV for 32.8%. Mean operative time was 36.03 ± 9.46 minutes. Postoperative pain lasted 2.2 ± 0.87 days on average; urinary retention occurred in 21.9%; postoperative day-1 bleeding occurred in 1.6%. Mean postoperative hospital stay was 5.52 ± 1.46 days. Mild anal stenosis and recurrence were observed in 9.4% and 1.6%, respectively. Very high satisfaction was reported in 95.3% of patients. **Conclusions:** Stapled hemorrhoidopexy demonstrated favorable early outcomes, including short operative time, acceptable postoperative pain, low bleeding rates, and high patient satisfaction. However, urinary retention remains a notable complication, and longer follow-up is required to better assess recurrence and long-term outcomes.

Keywords: hemorrhoids; Longo procedure; stapled hemorrhoidopexy; treatment outcomes.

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Received: 20/04/2026

Reviewed: 22/04/2026

Accepted: 22/05/2026

INTRODUCTION

Hemorrhoidal disease is one of the most common anorectal conditions, significantly affecting patients' quality of life due to symptoms such as rectal bleeding, pain, discomfort, and prolapse. Depending on the severity of the disease and clinical presentation, management options range from conservative treatment and office-based procedures to surgical intervention [1].

Stapled hemorrhoidopexy, also known as the Longo procedure, involves circumferential resection of a ring of rectal mucosa using a circular stapling device. This technique

repositions the prolapsed hemorrhoidal tissue and reduces arterial inflow to the hemorrhoidal plexus while avoiding direct excision in the highly innervated anoderm. As a result, stapled hemorrhoidopexy has been associated with less postoperative pain, faster recovery, and earlier return to normal activities compared with conventional excisional hemorrhoidectomy [2], [6].

However, despite its advantages, the Longo procedure remains a subject of ongoing debate. Some studies have reported higher recurrence rates and specific complications such as staple line bleeding, rectal stenosis, and, rarely, pelvic sepsis. Therefore, careful

patient selection, appropriate surgical technique, and postoperative monitoring are essential to optimize outcomes and minimize complications.

In Vietnam, stapled hemorrhoidopexy has been widely adopted in surgical practice and has demonstrated favorable short-term outcomes, including reduced postoperative pain and acceptable complication rates [3–5]. However, most available domestic studies have involved relatively small cohorts or focused mainly on operative techniques, while data regarding postoperative functional outcomes, patient satisfaction, and early recurrence in routine clinical practice remain limited.

At Hai Phong University of Medicine and Pharmacy Hospital, stapled hemorrhoidopexy has been routinely performed for Grade III and IV hemorrhoidal disease. Nevertheless, no previous study has systematically evaluated the clinical characteristics, perioperative outcomes, and short-term postoperative results of this procedure at our institution. Therefore, we conducted this study to describe the clinical and paraclinical characteristics and to evaluate the treatment outcomes of hemorrhoidal disease managed with stapled hemorrhoidopexy at Hai Phong University of Medicine and Pharmacy Hospital.

METHODS

Study design

This was a retrospective descriptive study.

Study setting and period

The study was conducted at Hai Phong University of Medicine and Pharmacy Hospital. Patients who underwent stapled hemorrhoidopexy (Longo procedure) between January 2025 and June 2025 were included.

Study population

A total of 64 patients diagnosed with hemorrhoidal disease and treated with stapled hemorrhoidopexy during the study period were enrolled.

Inclusion criteria:

Patients with a confirmed diagnosis of hemorrhoidal disease based on clinical evaluation and anorectal endoscopy, who underwent stapled hemorrhoidopexy at our institution during the study period, with complete medical records and available postoperative follow-up data for analysis.

Exclusion criteria:

Patients with hemorrhoidal disease who were not treated with stapled hemorrhoidopexy; incomplete key data; secondary hemorrhoids due to other underlying conditions; concomitant anorectal diseases requiring alternative surgical approaches; full-thickness rectal prolapse; rectal cancer; or severe systemic conditions precluding surgery.

Sample size and sampling method

Convenience sampling was applied, including all eligible patients during the study period.

Study variables

The main variables were categorized as follows:

Baseline characteristics: age, sex, occupation, duration of disease, and history of previous treatments.

Clinical and paraclinical characteristics: reason for admission, presenting symptoms, number and location of hemorrhoids, anal sphincter tone, anemia status, hemorrhoid grading based on anorectal endoscopy, and presence of perianal skin tags.

Intraoperative characteristics: type of anesthesia, operative time, level of purse-string suture placement, and additional procedures if required.

Early postoperative outcomes: bleeding, pain, urinary retention, time to first defecation, and length of hospital stay.

Postoperative pain was assessed on postoperative day 1 using the Visual Analog Scale (VAS) and categorized as mild, moderate, or severe according to clinical records.

Follow-up outcomes: anal sphincter tone, anal stenosis, recurrence, and patient satisfaction.

Recurrence was defined as recurrent symptomatic prolapse or bleeding requiring additional medical or surgical management during follow-up.

Patient satisfaction was assessed during follow-up visits or telephone interviews and categorized as “very satisfied” or “satisfied” based on patients’ subjective overall evaluation of symptom improvement and postoperative quality of life.

Data collection procedures

Data were retrospectively collected using a standardized data collection form from inpatient medical records, anesthesia

records, operative reports, laboratory results, anorectal endoscopy findings, and postoperative follow-up records.

Follow-up information was obtained from outpatient visits or, when available, from telephone-based follow-up records. Data were cross-checked across available sources to minimize information bias inherent to retrospective study designs.

Statistical analysis

Data were entered, cleaned, and analyzed using SPSS software (version 26.0). Continuous variables were expressed as mean $\pm$ standard deviation, while categorical variables were presented as frequencies and percentages.

Ethical considerations

This study was based on retrospective medical records and available postoperative follow-up data. All patient information was anonymized during data collection, analysis, and reporting, and was used solely for scientific research purposes. The study complied with ethical standards for research involving human subjects.

RESULTS

Baseline, clinical and paraclinical characteristics

Table 1. Baseline characteristics of the study population (n = 64)

Characteristic	n	%
Sex		
Male	41	64.1
Female	23	35.9
Age group (years)		
<30	7	10.9
30–<60	38	59.4
≥ 60	19	29.7
Duration of disease		
<5 years	39	60.9
5–10 years	25	39.1
Previous treatment		
None	57	89.1

Characteristic	n	%
Traditional medicine	1	1.6
Medical therapy	1	1.6
Office-based procedures	3	4.7
Previous surgery	2	3.1

Comment: The mean age was 49.41 ± 16.03 years, and most patients were male and aged 30–<60 years. The majority had disease duration <5 years and had not received previous treatment.

Table 2. Clinical and paraclinical characteristics

Variables	n	%
Prolapsed hemorrhoids	64	100
Anal pain	45	70.3
Rectal bleeding	41	64.1
≥2 symptoms	49	76.6
All three symptoms	29	45.3
1 hemorrhoidal pile	31	48.4
2 hemorrhoidal piles	7	10.9
3 hemorrhoidal piles	26	40.6
No anemia	56	87.5
Mild anemia	8	12.5
Grade III hemorrhoids	43	67.2
Grade IV hemorrhoids	21	32.8
Perianal skin tags	15	23.4

Comment: Prolapse was present in all patients (100%). Most patients had multiple symptoms, with 76.6% presenting with at least two symptoms and 45.3% presenting with the full triad of prolapse, pain, and bleeding. Grade III hemorrhoids were predominant (67.2%). All patients had normal anal sphincter tone preoperatively, and no anal stenosis was observed.

Intraoperative outcomes

Table 3. Intraoperative outcomes

Variables	n	%
Operative time		
10–<20 min	1	1.6
20–<30 min	13	20.3
30–<40 min	22	34.4
40–<50 min	12	18.7
≥50 min	16	25.0

Variables	n	%
Anal packing after surgery	64	100
Excision of skin tags	15	23.4

Comment: Most procedures were completed within 30–40 minutes. Complete circumferential mucosal resection was achieved in all patients, and intraoperative blood loss was minimal.

Early postoperative outcomes

Table 4. Early postoperative outcomes

Variables	n	%
Pain (postoperative day 1)		
No pain	1	1.6
Mild pain	39	60.9
Moderate pain	24	37.5
Severe pain	0	0
Postoperative bleeding (day 1)	1	1.6
First defecation ≤ 24 h	28	43.8
First defecation 24–48 h	36	56.3
Comfortable defecation	2	3.1
Anal discomfort	58	90.6
Painful defecation	4	6.3
Urinary retention	14	21.9

Comment: Postoperative pain was predominantly mild to moderate. Most patients achieved bowel movement within 48 hours after surgery, while urinary retention was the most common early postoperative complication.

Follow-up outcomes

Table 5. Follow-up outcomes

Variables	n	%
Direct follow-up	60	93.8
Telephone follow-up	4	6.2
Normal sphincter tone	64	100
Mild anal stenosis	6	9.4
Recurrence	1	1.6
Very satisfied	61	95.3
Satisfied	3	4.7

Comment: During follow-up, all patients maintained normal anal sphincter tone. Mild anal stenosis was observed in 9.4% of cases, and recurrence occurred in 1.6%. Patient satisfaction

was high, with all patients reporting either satisfaction or high satisfaction with the treatment outcomes.

DISCUSSION

The findings of this study support the role of stapled hemorrhoidopexy as an effective minimally invasive option for selected patients with Grade III–IV hemorrhoidal disease in routine clinical practice. Reduced postoperative pain, acceptable complication rates, and high patient satisfaction may facilitate earlier recovery and return to daily activities, which are particularly important for working-age patients.

The demographic characteristics in our study, with a mean age of 49.41 years and a predominance of male patients, are consistent with previous domestic studies, suggesting that hemorrhoidal disease is not limited to the elderly but is also common among the working-age population [3], [4]. Minor variations in mean age across studies may reflect differences in population characteristics and inclusion criteria. The higher proportion of male patients is similar to that reported by Nguyen Hoang Dieu [9]; however, gender differences are unlikely to have significant pathophysiological implications and may instead be influenced by behavioral and lifestyle factors.

Clinically, prolapsed hemorrhoids were present in all patients, which aligns with the indication of stapled hemorrhoidopexy, primarily applied in Grade III–IV internal hemorrhoids. The high proportion of patients presenting with multiple symptoms suggests that many patients seek medical attention at an advanced stage of disease. This observation is consistent with previous reports [3], [7], where most patients had not received definitive treatment prior to surgery. This factor may partly explain the marked

symptomatic improvement observed after surgical intervention.

The mean operative time in our study was 36.03 minutes, which falls within the range reported in previous studies [3]–[5]. Variations in operative time may be attributed to disease severity, the presence of circumferential hemorrhoids, adjunctive procedures such as excision of perianal skin tags, and surgeon experience. In our study, 23.4% of patients underwent additional excision of skin tags, which may have contributed to prolonged operative time in certain cases. These findings indicate that operative time reflects not only the Longo technique itself but also associated procedures.

Postoperative pain was predominantly mild to moderate, with a short duration. This is consistent with the underlying principle of stapled hemorrhoidopexy, in which the staple line is placed above the dentate line in a region with reduced somatic innervation, thereby minimizing pain compared with conventional excisional hemorrhoidectomy [2]. A randomized study by Watson et al. also demonstrated significantly reduced postoperative pain following stapled hemorrhoidopexy, particularly in the early postoperative period [8]. Thus, the advantage of reduced pain is supported by both clinical evidence and anatomical rationale.

The rate of postoperative bleeding in our study was low (1.6%), comparable to previous reports [3], [5], supporting the safety of the procedure when performed appropriately. However, it should be noted that stapled hemorrhoidopexy does not remove hemorrhoidal tissue completely but rather repositions it and reduces blood supply. Therefore, delayed bleeding may still

occur if purse-string suturing or stapler firing is not performed accurately.

Urinary retention was observed in 21.9% of patients, consistent with previous studies such as Le Trung Hieu (23.7%) [4], but lower than that reported by Nguyen Xuan Tuyen (46.6%) [5]. This variation may be related to anesthesia type, fluid management, and postoperative pain. In our study, all patients underwent spinal anesthesia, which has been associated with transient bladder dysfunction due to inhibition of the micturition reflex. This suggests that urinary retention is not solely procedure-specific but is also influenced by perioperative management strategies.

The rate of anal stenosis in our study was 9.4%, higher than some previous reports [3]–[5]. However, all cases were mild and did not significantly affect function. Possible contributing factors include excessive mucosal resection or additional procedures in the anal canal. These findings emphasize the importance of appropriate purse-string placement and limiting excessive manipulation within the anal canal to reduce the risk of complications.

The recurrence rate in our study was low (1.6%), consistent with short-term outcomes reported in previous studies [6], [7]. However, long-term studies, particularly the eTHoS trial, have demonstrated higher recurrence rates with stapled hemorrhoidopexy compared to conventional excisional techniques [8]. This may be explained by the mechanism of stapled hemorrhoidopexy, which does not completely remove hemorrhoidal tissue. Therefore, despite favorable short-term results, long-term follow-up is essential for accurate evaluation of treatment efficacy.

Patient satisfaction in our study was high (95.3%), consistent with previous reports [6],

[7]. This likely reflects a combination of reduced postoperative pain, faster recovery, and minimal disruption to daily activities, which are key advantages of stapled hemorrhoidopexy in clinical practice.

This study has several limitations. The retrospective design may introduce selection bias and limit control of confounding factors. The follow-up period was relatively short, precluding comprehensive assessment of long-term recurrence and late complications. Additionally, the absence of a comparison group, such as conventional excisional hemorrhoidectomy (Milligan–Morgan or Ferguson), limits the ability to draw definitive conclusions regarding comparative effectiveness. Future prospective studies with larger sample sizes and longer follow-up are warranted.

CONCLUSION

Stapled hemorrhoidopexy demonstrated favorable short-term outcomes in the treatment of hemorrhoidal disease in this cohort. Patients experienced predominantly mild to moderate postoperative pain, low rates of bleeding, and high satisfaction. However, postoperative urinary retention remains a notable complication, and careful perioperative management is required. Long-term follow-up is necessary to better evaluate recurrence and late complications of this technique.

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to Hai Phong University of Medicine and Pharmacy Hospital and all colleagues for their support in providing clinical data and facilitating this study.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest related to this study and its publication

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