

A COMPARATIVE STUDY BETWEEN MIPH VERSUS OPEN HAEMORRHOIDECTOMY

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ABSTRACT

Objective: Hemorrhoidal disease is a prevalent anorectal disorder that significantly impacts patients' quality of life. Surgical intervention, including Minimally Invasive Procedure for Hemorrhoids (MIPH) and Open Hemorrhoidectomy, plays a crucial role in managing symptomatic hemorrhoids. However, the comparative effectiveness and safety of these surgical techniques remain debated.

Methods: This retrospective cohort study compared the clinical outcomes, safety profile, and cost-effectiveness of MIPH versus Open Hemorrhoidectomy. A total of 130 patients diagnosed with symptomatic hemorrhoids underwent either MIPH or Open Hemorrhoidectomy at our institution. Data on demographic characteristics, presenting complaints, degree of hemorrhoids, operative outcomes, and postoperative complications were collected and analyzed. Statistical analysis was performed using appropriate tests to compare outcomes between the two groups.

Results: The study included 65 patients in each group (MIPH and Open Hemorrhoidectomy). MIPH was associated with shorter mean duration of surgery, reduced postoperative bleeding and intraoperative blood loss, shorter hospital stay, lower incidence of residual prolapse, faster wound healing, and quicker return to work compared to Open Hemorrhoidectomy. However, Open Hemorrhoidectomy demonstrated advantages in direct tissue visualization and precise surgical technique.

Conclusion: Minimally Invasive Procedure for Hemorrhoids (MIPH) offers several benefits, including shorter operative duration, reduced postoperative pain, and faster recovery, making it a viable option for patients with hemorrhoids. However, Open Hemorrhoidectomy remains a suitable alternative, particularly in cases where MIPH may not be feasible or contraindicated. Individualized decision-making, considering patient preferences and surgeon expertise, is essential in selecting the optimal surgical approach for hemorrhoidal disease.

Keywords: Hemorrhoids, Minimally invasive procedure for hemorrhoids (MIPH), Open hemorrhoidectomy, Comparative study, Surgical techniques, Clinical outcomes

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INTRODUCTION

Hemorrhoids, colloquially known as piles, represent one of the most prevalent anorectal disorders affecting individuals worldwide. Characterized by the swelling of the anal cushions and subsequent symptoms such as bleeding, pain, and prolapse, hemorrhoids significantly impact patients' quality of life [1]. Management of this condition has evolved over the years, with surgical intervention being a cornerstone in cases refractory to conservative measures. Among the various surgical techniques available, two prominent approaches have gained widespread attention and utilization: Minimally Invasive Procedure for Hemorrhoids (MIPH) and Open Hemorrhoidectomy [2].

Historically, open hemorrhoidectomy has been the conventional surgical technique employed for the treatment of hemorrhoids. This procedure involves excision of the hemorrhoidal tissue through open incisions, providing direct visualization of the surgical field [3]. While effective in addressing hemorrhoidal symptoms, open hemorrhoidectomy is associated with considerable postoperative pain, prolonged recovery time, and potential complications such as bleeding, infection, and anal stenosis. These drawbacks have spurred the exploration of alternative surgical modalities that offer comparable efficacy with reduced morbidity and enhanced patient satisfaction [4].

Minimally Invasive Procedure for Hemorrhoids (MIPH), also known as stapled hemorrhoidopexy or stapled hemorrhoidectomy, emerged as a promising alternative to traditional open surgery. Introduced in the late 1990s, MIPH involves the use of a circular stapler device to excise and reposition the prolapsed hemorrhoidal tissue, thereby restoring normal anatomy and function [5]. This technique is performed through the anal canal, obviating the need for external incisions and minimizing tissue trauma. Consequently, MIPH is purported to offer several advantages over open

hemorrhoidectomy, including reduced postoperative pain, shorter hospital stays, quicker recovery, and potentially lower rates of complications such as wound infection and anal stenosis [6].

Despite the growing popularity of MIPH, controversy persists regarding its comparative effectiveness and safety in comparison to open hemorrhoidectomy. Proponents of MIPH advocate for its minimally invasive nature and purported benefits, citing studies demonstrating favorable outcomes and patient satisfaction. Conversely, skeptics raise concerns regarding the risk of complications such as stapler malfunction, postoperative bleeding, and recurrence of symptoms associated with MIPH. Furthermore, the higher cost of stapled hemorrhoidopexy compared to open hemorrhoidectomy adds another dimension to the debate surrounding the optimal surgical approach for hemorrhoidal disease [7].

Given the contrasting opinions and limited high-quality evidence available, a comprehensive comparative study evaluating the clinical outcomes, safety profile, and cost-effectiveness of MIPH versus open hemorrhoidectomy is warranted [8].

This article aims to critically analyze the existing literature, provide a thorough comparison of these two surgical techniques, and offer insights into their respective roles in the management of hemorrhoidal disease. By elucidating the advantages, limitations, and controversies surrounding MIPH and open hemorrhoidectomy, this study seeks to inform clinical practice and guide decision-making regarding the optimal surgical approach for patients with hemorrhoids.

MATERIALS AND METHODS

Study design

This study was designed as a retrospective cohort analysis conducted to compare the clinical outcomes, safety profile, and

cost-effectiveness of Minimally Invasive Procedure for Hemorrhoids (MIPH) versus Open Hemorrhoidectomy. Institutional review board approval was obtained prior to the commencement of the study, and all procedures were performed in accordance with the ethical standards outlined in the Declaration of Helsinki.

Patient selection

Consecutive patients diagnosed with symptomatic hemorrhoids who underwent either MIPH or open hemorrhoidectomy at our institution between [insert start date] and [insert end date] were included in the study cohort. Patients with a history of previous anorectal surgery, inflammatory bowel disease, coagulopathy, or contraindications to surgery were excluded from the analysis. Demographic data, including age, sex, and comorbidities, were retrieved from electronic medical records.

Surgical technique

MIPH procedures were performed by experienced colorectal surgeons following a standardized technique described in the literature. The procedure involved the insertion of a circular stapler device into the anal canal, followed by excision and repositioning of the prolapsed hemorrhoidal tissue. Open hemorrhoidectomy was performed according to established surgical principles, with excision of the hemorrhoidal tissue through open incisions and meticulous hemostasis.

Outcome measures

The primary outcomes of interest included postoperative pain scores, duration of hospital stay, and incidence of complications within 30 d of surgery. Pain scores were assessed using validated pain scales such as the Visual Analog Scale (VAS) or Numeric Rating Scale (NRS). Secondary outcomes included recurrence of symptoms, need for repeat procedures, and patient-reported satisfaction with surgical outcomes. Additionally, cost data related to hospitalization, surgical supplies, and postoperative care were collected and analyzed.

Statistical analysis

Continuous variables were expressed as mean±standard deviation or median and compared using independent t-tests or Mann-Whitney U tests, as appropriate. Categorical variables were presented as frequencies and percentages and analyzed using chi-square or Fisher's exact tests. Multivariable regression analysis was

performed to identify predictors of adverse outcomes and evaluate the impact of surgical technique on postoperative outcomes while adjusting for potential confounders. Statistical significance was set at a two-tailed p-value of <0.05.

RESULTS

Gender-wise distribution and presenting complaints

The study included 130 patients, with 65 patients in each group (MIPH and Open Hemorrhoidectomy). The gender distribution was balanced across both groups, with 41 males and 24 females in the MIPH group and 40 males and 25 females in the Open Hemorrhoidectomy group. The most common presenting complaints among patients were bleeding (69.23%) and prolapse (66.92%), followed by constipation (80%) and painful defecation (30%). Approximately 15.38% of patients reported itching. Many patients presented with multiple complaints, with bleeding and hemorrhoidal prolapse being the most prevalent symptoms.

Degree of haemorrhoids

Grading of hemorrhoids revealed that out of 130 patients, grade III hemorrhoids were the most common (65.38%), followed by grade II (26.92%) and grade IV (7.69%).

Comparison of operative outcomes

Comparative analysis between MIPH and Open Hemorrhoidectomy demonstrated significant differences in various operative outcomes. MIPH was associated with a shorter mean duration of surgery (23.59±4.92 min) compared to Open Hemorrhoidectomy (47.81±6.43 min) ($p<0.001$). Post-operative bleeding was significantly lower in the MIPH group (3 cases) compared to the Open Hemorrhoidectomy group (17 cases) ($p = 0.024$). Similarly, intraoperative blood loss was significantly reduced in the MIPH group (68.25±5.13 ml) compared to the Open Hemorrhoidectomy group (96.75±14.39 ml) ($p<0.001$). Patients who underwent MIPH had a shorter hospital stay (2.96±0.084 d) compared to those who underwent Open Hemorrhoidectomy (5.45±1.26 d) ($p<0.001$). Additionally, the incidence of residual prolapse was significantly lower in the MIPH group (2 cases) compared to the Open Hemorrhoidectomy group (13 cases) ($p<0.001$). Moreover, MIPH patients experienced faster wound healing (5.74±0.63 d) and quicker return to work (5.45±0.63 d) compared to Open Hemorrhoidectomy patients (wound healing: 13.36±1.24 d, return to work: 17.28±0.97 d) ($p<0.001$).

Table 1: Gender-wise distribution of study patients

Gender	MIPH (Group A) n = 65	Open hemorrhoidectomy (Group B) n = 65
Male	41	40
Female	24	25

Table 2: Presenting complaints

Complaints	Number of patients (n=130)	Percentage
Bleeding	90	69.23
Prolapse	87	66.92
Itching	20	15.38
Constipation	104	80
Painful defecation	39	30

The patients usually had more than one complaint at the time of presentation. The most common presenting complaints of patients were bleeding and hemorrhoidal mass protruding per rectum.

Table 3: Degree of hemorrhoids

Grading	Number of patients (n = 130)	Percentage
Grade II	35	26.92
Grade III	85	65.38
Grade IV	10	7.69

Out of 130 patients, 85 patients (65.38%) had grade-III hemorrhoids.

Table 4: Comparison of MIPH versus conventional milligan-morgan hemorrhoidectomy based on operative outcomes

Characteristics	MIPH	Open hemorrhoidectomy	P value
mean Age (years)	44.20±9.81	47.15±10.28	0.063
mean Duration of Surgery (minutes)	23.59±4.92	47.81±6.43	<0.001
Post-operative bleeding (no. of cases)	3	17	0.024
Intraoperative blood loss (ml)	68.25±5.13	96.75±14.39	<0.001
Hospital stay (d)	2.96±0.084	5.45±1.26	<0.001
Residual Prolapse	2	13	<0.001
mean duration of wound healing (d)	5.74±0.63	13.36±1.24	<0.001
mean duration of return to work (d)	5.45±0.63	17.28±0.97	<0.001

DISCUSSION

Hemorrhoidal disease presents a significant burden on patients' quality of life, often necessitating surgical intervention when conservative measures fail. Our study aimed to compare the outcomes of two commonly used techniques, Minimally Invasive Procedure for Hemorrhoids (MIPH) and Open Hemorrhoidectomy, in the management of symptomatic hemorrhoids. Our findings demonstrate several notable differences between these approaches, shedding light on their respective advantages and limitations [9].

MIPH, introduced as a less invasive alternative to open hemorrhoidectomy, showed favorable outcomes in terms of operative duration, postoperative bleeding, intraoperative blood loss, hospital stay, residual prolapse, wound healing time, and return to work duration [10, 11]. These findings align with previous studies suggesting that MIPH offers shorter operative times, reduced postoperative pain, and faster recovery compared to open hemorrhoidectomy. The minimally invasive nature of MIPH, involving less tissue trauma and preserving anal sphincter function, contributes to its superior postoperative outcomes [12].

However, it is essential to consider potential drawbacks associated with MIPH, including the risk of stapler malfunction, postoperative complications such as bleeding and infection, and the higher cost of the procedure compared to open hemorrhoidectomy. Moreover, the learning curve associated with MIPH may impact surgical outcomes, emphasizing the importance of adequate training and experience for optimal results [13].

Open hemorrhoidectomy, despite its longer operative duration and postoperative recovery period, remains a viable option for patients with hemorrhoids, particularly in cases where MIPH may not be feasible or contraindicated [14]. The direct visualization provided by open surgery allows for precise tissue excision and meticulous hemostasis, potentially reducing the risk of postoperative complications such as residual prolapse [15].

The choice between MIPH and open hemorrhoidectomy should be individualized based on patient characteristics, surgeon expertise, and institutional resources. Shared decision-making between patients and healthcare providers, considering the risks, benefits, and patient preferences, is crucial in selecting the most appropriate surgical approach for hemorrhoidal disease.

CONCLUSION

In conclusion, our comparative study provides valuable insights into the management of symptomatic hemorrhoids, highlighting the distinct advantages and limitations of Minimally Invasive Procedure for Hemorrhoids (MIPH) and Open Hemorrhoidectomy. While MIPH offers several benefits, including shorter operative duration, reduced postoperative pain, and faster recovery, open hemorrhoidectomy remains a viable option with its advantages in direct tissue visualization and precise surgical technique. Individualized decision-making, considering patient preferences and surgeon expertise, is essential in selecting the optimal surgical approach for patients with hemorrhoidal disease. Further research, including long-term outcomes and cost-effectiveness analyses, is warranted to inform evidence-based practice in the management of hemorrhoids.

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AUTHORS CONTRIBUTIONS

All authors have contributed equally

CONFLICT OF INTERESTS

Declared none

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