Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/tv3yvc08

COMPARISON OF PILE SUTURING VS HEMORRHODECTOMY FOR THE MANAGMENT OF THIRD- AND FOURTH-DEGREE HAEMORRHOIDS

Dr. Mohammed Ali al Adwani[1], Dr Bareera Bibi[2], Muhammad Rashid[3], Muhammad Zulfiqar Ali[4], Dr. Rai Ahmad Khan Kharl[5], Dr Maria Bashir[6], Dr. Arif Khurshid[7]

[1]Consultant General & Colorectal Surgeon, Armed forces Hospitals Alhada Taif, Adwani.zahrani@yahoo.com
[2]House officer, Hayatabad medical complex, bareerabibi25@gmail.com
[3]Consultant Thoracic Surgeon, Armed Forces Hospital Alhada Taif KSA, rashidrazee502@gmail.com
[4]Consultant General Surgery, Armed forces hospital Alhada Taif, doc.zulfiqarali@gmail.com
[5]Consultant vascular surgeon, Armed forces hospital Alhada Taif KSA, raiahmad313@gmail.com
[6]Senior register General Surgery, Fatima memorial Hospital, Lahore
[7]Consultant General Surgeon, Armed Forces Hospital Alhada, Taif, docaarif@yahoo.com

ABSTRACT:

Objective: This study aimed to compare the outcomes of pile suturing and hemorrhoidectomy in the management of third- and fourth-degree hemorrhoids, focusing on operating time, hospital stay, post-operative pain and complications.

Methodology: This study included 70 adult patients diagnosed with third- or fourth-degree hemorrhoids. Participants were assigned to either pile suturing (Group A) or hemorrhoidectomy (Group B). Surgical procedures were performed under regional or general anesthesia. The primary outcome measures included operating time, hospital stay, and pain levels assessed using the visual analogue scale (VAS) at a two-week follow-up. Secondary outcomes included complications.

Results: The mean operating time for pile suturing was significantly shorter (28.94 ± 3.226 minutes) compared to hemorrhoidectomy (49.89 ± 2.938 minutes) (P = 0.0001). The average hospital stay was also shorter for the pile suturing group (3.54 ± 1.221 days) compared to the hemorrhoidectomy group (5.86 ± 0.772 days) (P = 0.0001). Post-operative pain at two weeks was lower in the pile suturing group (0.86 ± 0.733) compared to the hemorrhoidectomy group (1.49 ± 1.011) (P = 0.004). Complications were significantly fewer in the pile suturing group, with 5.7% experiencing bleeding compared to 22.9% in the hemorrhoidectomy group (P = 0.04). Recurrence rates were similar between the groups.

Conclusion: Pile suturing demonstrated superior short-term outcomes, including reduced operating time, hospital stay, pain, and bleeding, compared to hemorrhoidectomy. While recurrence rates were comparable, pile suturing offers a less invasive and quicker recovery alternative for patients with third- and fourth-degree hemorrhoids.

Keywords: Pile suturing, hemorrhoidectomy, third-degree hemorrhoids, fourth-degree hemorrhoids, post-operative pain, complications, recurrence rates.

INTRODUCTION: Hemorrhoids, or piles, are among the most prevalent anorectal disorders affecting individuals of all ages. They arise when the blood vessels in the anal or rectal area become engorged or irritated, resulting in various symptoms including pain, haemorrhage, pruritus, and discomfort. [1] Hemorrhoids are categorised into two primary varieties according to their location: internal hemorrhoids, located within the rectum, and external hemorrhoids, situated beneath the skin surrounding the anus. Internal hemorrhoids are categorised into four degrees of severity, from grade I (moderate) to grade IV (severe), with the latter frequently necessitating surgical intervention. While hemorrhoids are generally not life-threatening, they can induce considerable discomfort and adversely affect the quality of life of those affected. [2, 3]

Hemorrhoids are a primary reason for consultations with proctologists and general practitioners for anorectal issues. Hemorrhoids, despite their prevalence, frequently go underdiagnosed and undertreated, as numerous individuals choose self-management or postpone medical appointment owing to shame or ignorance regarding treatment alternatives. Comprehending the pathogenesis, risk factors, and therapeutic approaches for hemorrhoids is essential for proficiently managing this prevalent ailment. [4-6]

Among the several surgical techniques, two methods have garnered significant attention: pile suturing and hemorrhoidectomy. Both treatments seek to mitigate the symptoms of haemorrhoidal prolapse and avert recurrence; nevertheless, they vary in surgical methodology, risks, and long-term results. [7-8] Pile suturing, or stapled hemorrhoidopexy, is a minimally invasive technique utilising a specialised stapling apparatus to realign and secure prolapsed haemorrhoidal tissue. This treatment has become popular because to its diminished postoperative pain, abbreviated recovery period, and reduced occurrence of complications relative to standard hemorrhoidectomy. [9, 10]Conversely, hemorrhoidectomy, regarded as the gold standard for surgically addressing third- and fourth-degree hemorrhoids, entails the excision of the haemorrhoidal mass together with adjacent tissue. [11, 12]

The management of third- and fourth-degree hemorrhoids, which often involve prolapse and significant symptoms such as pain, bleeding, and discomfort, presents a clinical challenge in proctology. The clinical efficacy of pile suturing compared to hemorrhoidectomy remains unclear, with ongoing debates regarding recurrence rates, long-term outcomes, and patient satisfaction. Therefore, a direct comparison between pile suturing and hemorrhoidectomy in the treatment of third- and fourth-degree hemorrhoids is crucial to provide evidence-based guidance on the most effective and patient-friendly surgical option. Such a study could offer valuable insights into optimizing treatment protocols, reducing the burden of postoperative morbidity, and ultimately improving patient outcomes in the management of advanced hemorrhoidal disease.

METHODOLOGY:

This comparative study was conducted from January 2024 to July 2024 at Fatima memorial Hospital, Lahore. The study adhered to ethical standards and received approval from the hospital. A total of 70 patients were enrolled in the study, with 35 patients allocated to each group. Participants were assigned to either the pile suturing group or the hemorrhoidectomy group. The inclusion criteria for the study included adult patients aged 30 to 60 years with a clinical diagnosis of third- or fourth-degree hemorrhoids. Patients were excluded if they had grade I or II hemorrhoids, significant comorbidities that contraindicated surgery, or a history of prior hemorrhoidal surgery. All participants provided written informed consent prior to inclusion in the study.

Surgical procedures for both groups were performed under regional or general anesthesia, depending on patient and surgeon preference. In the pile suturing group, the hemorrhoidal tissue was sutured to reduce prolapse without excising the hemorrhoidal mass. This technique involved placing continuous or interrupted sutures at the base of the hemorrhoid to anchor it in place, thereby maintaining the hemorrhoidal tissue in its anatomical position. In the hemorrhoidectomy group, conventional surgery was performed, where the hemorrhoidal tissue was excised using either the open or closed method. The decision to leave the wound open or close it with sutures was based on the surgical technique selected by the operating surgeon.

The primary outcome measures assessed in the study included operating time, hospital stay, and pain levels at the two-week post-surgery follow-up. Operating time was measured from the initiation of the procedure to its completion, and hospital stay was recorded as the number of days the patient remained hospitalized following the procedure. Pain levels were assessed at two weeks follow up using a visual analogue scale (VAS), with scores ranging from 0 to 10, where 0 indicated no pain and 10 indicated the worst possible pain. Secondary outcomes included the incidence of complications such as bleeding and recurrence.

The statistical analysis was performed using SPSS 24. Continuous variables were presented as means with standard deviations, while categorical variables were expressed as frequencies and percentages. Differences between the groups for continuous variables were assessed using the independent t-test, while categorical variables were compared using the chi-square test. A P-value of less than 0.05 was considered statistically notable.

RESULTS:

In this study, a total of 70 participants were included, with 35 patients in each treatment group: pile suturing (Group A) and hemorrhoidectomy (Group B). The average age of participants was similar across both groups, with Group A having a mean age of 43.49 ± 8.695 years, and Group B having a mean age of 44.06 ± 8.855 years. The total mean age for all participants was 43.77 ± 8.716 years. Gender distribution was also comparable between the two groups, with 54.3% males and 45.7% females in Group A, and 57.1% males and 42.9% females in Group B. Comorbidities were more common in Group A, with 28.6% of patients having hypertension, while Group B had a higher proportion of patients with no comorbidities (71.4%). Both groups had a similar distribution of hemorrhoidal grades, with Group A having 62.9% of patients with grade III hemorrhoids and 37.1% with grade IV hemorrhoids, while Group B had 60.0% with grade III and 40.0% with grade IV hemorrhoids. The operating time was significantly shorter for Group A (Pile Suturing), with a mean time of 28.94 ± 3.226 minutes compared to 49.89 ± 2.938 minutes in Group B (Hemorrhoidectomy) (P = 0.0001). Additionally, Group A had a significantly shorter hospital stay, with an average of 3.54 ± 1.221 days, compared to 5.86 ± 0.772 days in Group B (P = 0.0001). Regarding post-surgical pain, patients in Group A reported a lower pain score at the 2-week follow-up (0.86 ± 0.733) compared to Group B (1.49 ± 1.011) (P = 0.004). When complications were analyzed, Group A (Pile Suturing) exhibited a significantly lower rate of bleeding, with 5.7% of patients experiencing this complication, compared to 22.9% in Group B (Hemorrhoidectomy) (P = 0.04). However, the rate of recurrence was similar between the two groups, with 11.4% of patients in Group A and 20.0% in Group B experiencing recurrence (P = 0.32).

Table 1 Baseline characteristics

Baseline characteristics		Groups			
		Group A (Pile suturing)		Group B (Hemorrhodectomy)	
		N	%	N	%
Gender	Male	19	54.3%	20	57.1%
	Female	16	45.7%	15	42.9%
Comorbidities	Diabetes	5	14.3%	4	11.4%
	Hypertension	10	28.6%	6	17.1%
	None	20	57.1%	25	71.4%
Grade of hemorrhoids	III degree	22	62.9%	21	60.0%
	IV degree	13	37.1%	14	40.0%

Table 2 Comparison of operating time, hospital stay and pain score at 2 weeks follow up

	Groups	N	Mean	Std. Deviation	P value
Operating time (Mins)	Group A (Pile suturing)	35	28.94	3.226	0.0001
	Group B (Hemorrhodectomy)	35	49.89	2.938	
Hospital stay (days)	Group A (Pile suturing)	35	3.54	1.221	0.0001
	Group B (Hemorrhodectomy)	35	5.86	.772	
Pain score VAS at 2 weeks follow up	Group A (Pile suturing)	35	.86	.733	0.004
	Group B (Hemorrhodectomy)	35	1.49	1.011	

Table 3 Comparison of complications

Complications		Groups				P value
		Group A (Pile suturing)		Group B (Hemorrhodectomy)		
		N	%	N	%	
Bleeding	Yes	2	5.7%	8	22.9%	0.04
	No	33	94.3%	27	77.1%	
Recurrence	Yes	4	11.4%	7	20.0%	0.32
	No	31	88.6%	28	80.0%	

DISCUSSION:

In this study, we compared the outcomes of pile suturing and hemorrhoidectomy in the management of third- and fourth-degree hemorrhoids. Our results demonstrated several key differences between the two techniques, which are consistent with findings in the existing literature, particularly in terms of operating time, hospital stay, post-operative pain, and complication rates.

Our study found that pile suturing (Group A) was associated with significantly shorter operating times compared to hemorrhoidectomy (Group B), with a mean difference of approximately 21 minutes. This result is consistent with studies by Khawer et al., which highlighted a shorter surgical duration for alternative methods like pile suturing compared to traditional hemorrhoidectomy, due to its less invasive nature and reduced requirement for extensive tissue dissection.[13] Similarly, Zhang et al., found that procedural modifications like pile suturing and stapled hemorrhoidopexy resulted in reduced operative times compared to conventional hemorrhoidectomy.[14] The shorter surgical duration in our study may reduce the risk of intraoperative complications and lead to a faster recovery, making pile suturing a more appealing option for patients, especially those with comorbidities.

Furthermore, we observed a significant difference in hospital stay between the two groups. The average length of hospital stay was shorter in the pile suturing group (3.54 ± 1.221 days) compared to the hemorrhoidectomy group (5.86 ± 0.772 days). This finding is in line with El-Wahab A et al, who reported that patients undergoing minimally invasive techniques, such as pile suturing, had shorter hospitalization periods compared to those undergoing hemorrhoidectomy, which is often associated with more extensive recovery.[8] The reduced hospital stay associated with pile suturing is likely due to less post-operative pain and fewer complications, which aligns with the overall trend toward shorter recovery times seen with less invasive approaches.

In terms of pain management, our study found that the pain score at the two-week follow-up was significantly lower in the pile suturing group compared to the hemorrhoidectomy group. Specifically,

the mean pain score for pile suturing was 0.86 ± 0.733, while for hemorrhoidectomy, it was 1.49 ± 1.011. This result mirrors findings by El-Wahab A et al, who noted that patients undergoing pile suturing or stapled hemorrhoidopexy reported less post-operative pain and discomfort than those who underwent traditional hemorrhoidectomy.[8] The reduced pain following pile suturing can be attributed to the less traumatic nature of the procedure, as it involves suturing the hemorrhoidal tissue rather than excising it completely, leading to faster recovery and fewer pain management needs.

Complications were another important outcome in our study. The rate of bleeding was significantly lower in the pile suturing group (5.7%) compared to the hemorrhoidectomy group (22.9%), which is consistent with previous studies suggesting that hemorrhoidectomy carries a higher risk of bleeding due to the extensive tissue removal involved. However, the rate of recurrence was not significantly different between the two groups in our study. Recurrence rates were 11.4% for pile suturing and 20.0% for hemorrhoidectomy, which is similar to results from Aditya et al, who found no significant difference in recurrence rates between minimally invasive procedures and conventional hemorrhoidectomy in their comparative study.[15] Recurrence is a well-known issue in hemorrhoidal surgery, with both techniques carrying a risk of recurrence over time, particularly when post-operative care and lifestyle modifications are not followed strictly. In our study, recurrence rates were not significantly different between the groups, suggesting that while pile suturing offers better short-term recovery and fewer complications, it may not provide a substantial advantage in preventing long-term recurrence compared to traditional hemorrhoidectomy.

Our study also aligns with the broader literature, which shows that the choice between pile suturing and hemorrhoidectomy depends on a variety of factors, including the patient's clinical condition, the surgeon’s experience, and the availability of resources. Both techniques have their merits, with pile suturing often favored for its lower morbidity and quicker recovery, while hemorrhoidectomy remains the gold standard for more severe cases of hemorrhoidal disease.

CONCLUSION:

In conclusion, this study demonstrates that pile suturing offers significant advantages over hemorrhoidectomy in the management of third- and fourth-degree hemorrhoids, including shorter operating times, reduced hospital stays, lower pain scores, and bleeding, particularly in terms of bleeding. While recurrence rates were similar between the two techniques, pile suturing's minimally invasive nature makes it a preferable option for patients seeking faster recovery and less post-operative discomfort.

REFERENCES:

1. Sandler RS, Peery AF. Rethinking what we know about hemorrhoids. Clin Gastroenterol Hepatol. 2019;17(1):8-15.
2. Margetis N. Pathophysiology of internal hemorrhoids. Ann Gastroenterol. 2019;32(3):264.
3. Wronski K. Etiology of thrombosed external hemorrhoids Etiologia zakrzepicy żył okołoodbytowych. Postepy Hig Med Dosw. 2012;66:41-4.
4. Sadiqa A, Khan MS, Akram I, Rafiq MH, Zaman A, Khan TM, Mumtaz M, Khan S. Risk Factors of Hemorrhoids in a Tertiary Care Hospital of Rawalpindi: A Descriptive Cross-Sectional Study. Eur J Health Sci. 2022;7(4):41-7.
5. Idrees JJ, Clapp M, Brady JT, Stein SL, Reynolds HL, Steinhagen E. Evaluating the accuracy of hemorrhoids: comparison among specialties and symptoms. Dis Colon Rectum. 2019;62(7):867-71.
6. Hong J, Kim I, Song J, Ahn BK. Socio-demographic factors and lifestyle associated with symptomatic hemorrhoids: Big data analysis using the National Health insurance Service-National Health screening cohort (NHIS-HEALS) database in Korea. Asian J Surg. 2022;45(1):353-9.
7. Ibrahim EM, Hassan HM, Atayp Beshna SA, Zaitoun MA. Evaluation of Laser Pile Surgery versus Ligasure Hemorrhoidectomy in Treatment of Hemorrhoids. Zagazig Univ Med J. 2024;30(1.6):2679-86.

8. El-Wahab A, Ehab H, Osman AG, Helmy M. Comparative study between pile plication technique and open hemorrhoidectomy in the management of noncomplicated second-degree and third-degree hemorrhoids. Egypt J Surg. 2023;41(4):16-21
9. Raj K, Agarwal PN, Nasar MA. A comparative study to evaluate milligan morgan hemorrhoidectomy versus pile suture method in management of haemorrhoids. International Surgery Journal. 2021 Jan 29;8(2):664-7.
10. Du T, Quan S, Dong T, Meng Q. Comparison of surgical procedures implemented in recent years for patients with grade III and IV hemorrhoids: a network meta-analysis. Int J Colorectal Dis. 2019;34:1001-12.
11. Wee IJ, Koo CH, Seow-En I, Ng YY, Lin W, Tan EJ. Laser hemorrhoidoplasty versus conventional hemorrhoidectomy for grade II/III hemorrhoids: a systematic review and meta-analysis. Ann Coloproctol. 2023;39(1):3-7.
12. Tan VZ, Peck EW, Sivarajah SS, Tan WJ, Ho LM, Ng JL, Chong C, Aw D, Mainza F, Foo FJ, Koh FH. Systematic review and meta-analysis of postoperative pain and symptoms control following laser haemorrhoidoplasty versus Milligan-Morgan haemorrhoidectomy for symptomatic haemorrhoids: a new standard. Int J Colorectal Dis. 2022;37(8):1759-71.
13. Khawer R, Muhammad Asghar J, Khalid M, Asma K. A randomized trial to compare pile suturing with hemorrhoidectomy for treatment of third and fourth degree haemorrhoids. Pak Armed Forces Med J 2010; 60(2): 186-9.
14. Zhang C, Zhang W, Xu J. Comparison of the outcomes of hemorrhoidectomy and PPH in the treatment of grades III and IV hemorrhoids. Medicine 2022;101:00(e29100).
15. Aditya, Raj K, Agarwal PN, Md Abu N. A comparative study to evaluate milligan morgan hemorrhoidectomy versus pile suture method in management of haemorrhoids. Int Surg J 2021;8:664-7