

LATERAL INTERNAL SPHINCTEROTOMY AS A PAIN-RELIEF ADJUNCT IN OPEN HEMORRHOIDECTOMY: A COMPARATIVE ANALYSIS

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Abstract

Background: Hemorrhoids, or piles, are swollen veins in the lower rectum and anus, typically located at the 3, 7, and 11 o'clock positions. They commonly occur due to raised intra-abdominal pressure, such as in obesity, constipation, and pregnancy. The most frequent symptom is rectal bleeding, though other symptoms include prolapse, pain, mucous discharge, and itching. Hemorrhoids affect between 4.4% and 36.4% of the general population. Surgery is indicated for grade 3 and 4 hemorrhoids and grade 2 cases unresponsive to treatment. To reduce postoperative pain, lateral internal sphincterotomy has become an effective adjunct to hemorrhoidectomy by alleviating internal anal sphincter hypertonicity. This study aims to compare postoperative pain in two groups of patients undergoing open hemorrhoidectomy, with and without lateral internal sphincterotomy. **Materials and Methods:** This non-randomized comparative study was conducted over two years at the Department of General Surgery, RIMS, Ranchi, including 60 patients with grade 3-4 hemorrhoids. Group A underwent Milligan-Morgan open hemorrhoidectomy, while Group B also received a lateral internal sphincterotomy. Outcomes included postoperative pain, complications, bowel continence, return to work, and patient satisfaction over a three-month follow-up. **Result and Conclusion:** The study demonstrated reduced postoperative pain, improved quality of life, and shorter hospital stays in Group B. Additionally, the lateral internal sphincterotomy added minimal time to the total surgical duration.

INTRODUCTION

Hemorrhoids, or dilated anal cushions, are commonly located at the 3, 7, and 11 o'clock positions around the anus, often arising from conditions that elevate intra-abdominal pressure, such as obesity, constipation, and pregnancy. Symptoms typically include rectal bleeding, prolapse, pain, mucous discharge, and itching, with prevalence estimates ranging from 4.4% to 36.4% in the general population.^[1] Hemorrhoids may be classified as internal, graded from 1 to 4 based on severity, or external, the latter being more sensitive due to their skin-covered location. Conservative treatments—like rubber band ligation, infrared coagulation, and sclerotherapy—are effective for grade 1 and grade 2 hemorrhoids. However, surgical intervention is often required for grade 3 and grade 4 cases, or for those unresponsive to treatment. The Milligan-Morgan

open hemorrhoidectomy is one of the most commonly performed techniques, though it is often associated with significant postoperative pain due to reflexive spasm of the internal anal sphincter.^[2]

Various methods have been explored to reduce postoperative pain, with lateral internal sphincterotomy being recognized as a valuable adjunct procedure. This additional procedure alleviates pain by reducing internal sphincter hypertonicity.^[3] This study aims to compare the postoperative pain levels in two patient groups undergoing open hemorrhoidectomy: one group with lateral internal sphincterotomy and one without.

Aims and Objectives

The primary aim is to compare postoperative pain between hemorrhoidectomy alone and hemorrhoidectomy with sphincterotomy among patients with advanced hemorrhoids.

Primary Objective: To assess the effectiveness of hemorrhoidectomy with and without lateral internal sphincterotomy in reducing postoperative pain.

Secondary Objectives: To evaluate intraoperative and postoperative complications, analgesic requirements, bleeding and urinary retention.

Ultimately, this study will provide insights into the effectiveness of lateral internal sphincterotomy as an adjunct to hemorrhoidectomy in minimizing pain and improving recovery outcomes in patients undergoing surgery for severe hemorrhoids.

MATERIALS AND METHODS

This non-randomized, comparative study was conducted over two years at the Department of General Surgery, RIMS, Ranchi. The study included all patients aged 18-60 years, admitted with grade 2 (refractory to medical treatment), 3, or 4 hemorrhoids. Exclusion criteria involved concurrent anal pathologies such as inflammatory bowel disease, malignancy, cirrhosis with portal hypertension, pregnancy, and conditions like thrombosed piles and incontinence.

A total of 60 patients were divided into two groups: Group A underwent the Milligan-Morgan open hemorrhoidectomy, while Group B received the same procedure with additional lateral internal sphincterotomy. Patients were preoperatively stabilized and prepared with informed consent, metronidazole, sitz baths, and enemas the night before and morning of surgery.^[4]

All surgeries were performed under spinal anesthesia with patients in the lithotomy position. Hemorrhoidectomy was performed with hemostasis, and lateral internal sphincterotomy was added for Group B. Postoperative care included analgesics, sitz baths, a high-fiber diet, and regular follow-up assessments at intervals of 12, 24, and 48 hours, then weekly up to three months.

Primary outcomes, including intraoperative and postoperative complications, pain (measured using the Visual Analog Scale), urinary retention, bleeding, bowel continence, return to work, and patient satisfaction, were evaluated across both groups.

RESULTS

Postoperative Pain: This study assessed postoperative pain at 12, 24, and 48 hours following surgery in two patient groups: Group A, which underwent open hemorrhoidectomy alone, and Group B, which had an additional lateral internal sphincterotomy. Pain levels were categorized as mild, moderate, or severe, and the differences between groups were statistically significant at each time point, with P values of 0.02, 0.01, and 0.02, respectively.

After 12 Hours: In the early postoperative period (12 hours), 57% of patients in Group A reported severe pain compared to only 16% in Group B,

demonstrating a marked difference in pain severity. Mild pain was noted in only 10% of Group A patients but in 57% of Group B, indicating that lateral internal sphincterotomy contributed to a significant reduction in pain levels.

After 24 Hours: At 24 hours, the difference in pain reduction remained evident. Severe pain decreased to 46% in Group A and further declined to 6% in Group B. Mild pain was more prevalent in Group B (54%) than in Group A (30%). This shift suggests continued benefits of lateral internal sphincterotomy in reducing pain intensity over time.

After 48 Hours: By 48 hours post-surgery, mild pain was observed in 76% of Group B patients, compared to only 36% in Group A. Moderate pain remained in 24% of Group B and persisted at a high level of 64% in Group A, with no severe pain reported in either group. These findings highlight that patients undergoing hemorrhoidectomy with lateral internal sphincterotomy experienced consistently lower levels of postoperative pain compared to those with hemorrhoidectomy alone, supporting the effectiveness of the additional procedure in enhancing patient comfort and recovery.

Analgesia Used: All patients received opioid analgesics (Inj. PENTAZOCINE) on the night of surgery, followed by an on-demand protocol allowing them to self-administer analgesics according to their pain tolerance. The oral analgesic administered was tramadol 100 mg. Pain levels were categorized based on the number of tablets taken over the first 48 hours: 0-2 tablets indicated mild pain, 2-4 tablets indicated moderate pain, and more than 4 tablets indicated severe pain. Analysis of analgesic consumption revealed a significant difference between the two groups, with a P value of 0.021. Group B, which underwent hemorrhoidectomy with lateral internal sphincterotomy, demonstrated a notably lower requirement for analgesics in the postoperative period, suggesting that this surgical adjunct effectively alleviates pain and reduces the need for additional pain management. This finding reinforces the beneficial impact of lateral internal sphincterotomy in enhancing postoperative comfort for patients following hemorrhoidectomy.

Bleeding: Postoperative bleeding is a common complication associated with open hemorrhoidectomy. In Group A, which underwent the Milligan & Morgan open technique alone, 80% of patients experienced confined bleeding, while 20% reported moderate bleeding, with no patients experiencing severe bleeding. In Group B, which had the additional lateral internal sphincterotomy, 84% of patients also had confined bleeding, while 16% reported moderate bleeding, and again, no patients experienced severe bleeding. The results indicated that there were no statistically significant differences in bleeding between Group A, which underwent the Milligan & Morgan open technique alone, and Group B, which had the additional lateral internal sphincterotomy, with a P value of 0.713. This finding suggests that the addition of lateral internal

sphincterotomy does not significantly affect the incidence or severity of postoperative bleeding, indicating that both surgical approaches have comparable bleeding outcomes.

Urinary Retention: Urinary retention is a common complication observed in the immediate postoperative period following open hemorrhoidectomy, particularly on postoperative days 1 and 2. This condition is often attributed to the effects of spinal anesthesia or postoperative pain. In this study, two groups were monitored for their ability to void urine voluntarily. For patients who were unable to do so, bladder catheterization was performed.

The results showed a significant difference between the two groups. In Group A, which underwent the open technique alone, 44% of patients required bladder catheterization for urine drainage, while 56% were able to void without assistance. In contrast, Group B, which received the additional lateral internal sphincterotomy, demonstrated a much lower rate of urinary retention, with only 12% requiring catheterization and 88% able to void independently. Statistical analysis revealed a P value of 0.012, indicating a significant difference between the two procedures in terms of urinary retention. These findings suggest that the addition of lateral internal sphincterotomy is associated with a lower incidence of urinary retention postoperatively, enhancing patient recovery and comfort.

AFTER 12 HRS OF SURGERY:

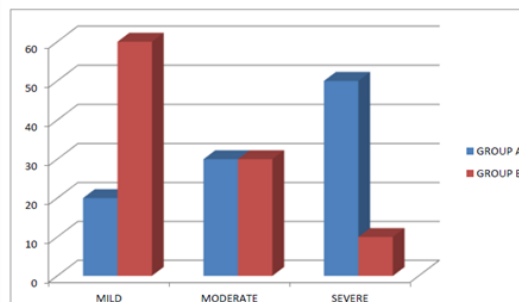
| | GROUP A | GROUP B |
|----------|---------|---------|
| Mild | 10% | 57% |
| Moderate | 33% | 27% |
| Severe | 57% | 16% |
| P Value | 0.02 | |

AFTER 24 HOURS OF SURGERY:

| | GROUP A | GROUP B |
|----------|---------|---------|
| Mild | 30% | 54% |
| Moderate | 24% | 40% |
| Severe | 46% | 6% |
| P Value | 0.01 | |

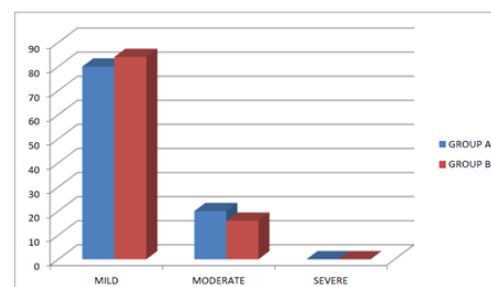
AFTER 48 HOURS OF SURGERY:

| | GROUP A | GROUP B |
|----------|---------|---------|
| Mild | 36% | 76% |
| Moderate | 64% | 24% |
| P Value | 0.02 | |



BLEEDING:

| BLEEDING | GROUP A | GROUP B |
|----------|---------|---------|
| CONFINED | 80% | 84% |
| MODERATE | 20% | 16% |
| SEVERE | 0 | 0 |



DISCUSSION

Hemorrhoids are a prevalent condition affecting the anal region, with various treatment modalities available, including conservative management for grades 1 and 2, and surgical interventions such as open hemorrhoidectomy (Milligan & Morgan), closed hemorrhoidectomy, stapled hemorrhoidopexy, and Doppler-guided hemorrhoidal artery ligation. Despite the emergence of newer techniques, open hemorrhoidectomy remains the gold standard for managing grade 3 and 4 hemorrhoids due to its effectiveness, as supported by findings from Kanellos et al.^[5]

Postoperative complications, particularly pain, urinary retention, and bleeding, are commonly encountered following hemorrhoidectomy. Numerous studies, including those by Kanellos et al., have investigated methods to alleviate postoperative

pain, with many indicating that lateral internal sphincterotomy can significantly reduce pain by addressing the spasms of the internal sphincter muscle, a primary contributor to postoperative discomfort.

This study aimed to evaluate the effectiveness of lateral internal sphincterotomy in managing postoperative pain after open hemorrhoidectomy. A total of 60 patients were enrolled, excluding those with fissures and Crohn's disease, and were assessed for pain using a visual analog scale at multiple intervals post-surgery. The results indicated a statistically significant difference in pain levels between the two groups, with a P value of 0.01 at 24 hours and 0.02 at 48 hours, favoring the group that received sphincterotomy, as similarly noted by Asfar et al.^[6]

In terms of analgesia use, the study demonstrated a notable difference, with a P value of 0.02, indicating reduced analgesic consumption in the group that underwent sphincterotomy. Additionally, urinary retention was less prevalent in Group B, with a P value of 0.012, suggesting that lateral internal sphincterotomy may improve urinary outcomes post-surgery, findings also echoed in Wasvary et al.'s research.^[7]

While bleeding was assessed with a P value of 0.07, indicating no significant difference, the overall hospital stay duration was shorter for Group B (4.6 days) compared to Group A (8.1 days), with a P value of 0.00, as well as a shorter time to return to work (11.9 days vs. 21.4 days), also statistically significant (P value of 0.00). These outcomes align with studies by Kanellos et al. and Asfar et al., which also report enhanced recovery times with sphincterotomy.

CONCLUSION

The findings from this study, along with support from studies by Kanellos et al., Kanellos et al., and Asfar

et al., reinforce the efficacy of combining lateral internal sphincterotomy with open hemorrhoidectomy in reducing postoperative pain, urinary retention, and improving recovery times, highlighting its value as a beneficial adjunct in hemorrhoid surgery.

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REFERENCES

1. Favetta U, Amato A, Interisano A, Pescatori M. Clinical, manometric and sonographic assessment of the anal sphincters. A comparative prospective study. *Int J Colorectal Dis.* 1996;11(4):163–6.
2. McConnell JC, Khubchandani IT. Long-term follow-up of closed hemorrhoidectomy. *Dis Colon Rectum.* 1983 Dec;26(12):797–9.
3. Schouten WR, van Vroonhoven TJ. Lateral internal sphincterotomy in the treatment of hemorrhoids. A clinical and manometric study. *Dis Colon Rectum.* 1986 Dec;29(12):869–72.
4. Whitehead J. Sample size calculations for ordered categorical data. *Stat Med.* 1993 Dec 30;12(24):2257–71.
5. Kanellos I, Zacharakis E, Christoforidis E, Angelopoulos S, Kanellos D, Pramateftakis MG, et al. Usefulness of lateral internal sphincterotomy in reducing postoperative pain after open hemorrhoidectomy. *World J Surg.* 2005 Apr;29(4):464–8.
6. Asfar SK, Juma TH, Ala-Edeen T. Hemorrhoidectomy and sphincterotomy. A prospective study comparing the effectiveness of anal stretch and sphincterotomy in reducing pain after hemorrhoidectomy. *Dis Colon Rectum.* 1988 Mar;31(3):181–5.
7. Wasvary HJ, Hain J, Mosed-Vogel M, Bendick P, Barkel DC, Klein SN. Randomized, prospective, double-blind, placebo-controlled trial of effect of nitroglycerin ointment on pain after hemorrhoidectomy. *Dis Colon Rectum.* 2001 Aug;44(8):1069–73