ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 08 | August - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A RANDOMISED CONTROLLED TRIAL FOR COMPARING THE OUTCOMES AFTER HAEMORRHOIDECTOMY, WITH AND WITHOUT LATERAL INTERNAL SPHINCTEROTOMY

General Surgery

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ABSTRACT

Introduction: Hemorrhoids are a common anorectal condition characterized by the abnormal enlargement of vascular cushions in the anal canal. Management ranges from conservative treatments, including dietary modifications and topical agents, to surgical interventions like hemorrhoidectomy. Lateral Internal Sphincterotomy (LIS) is often combined with hemorrhoidectomy to reduce postoperative pain and prevent complications like sphincter hypertonicity and anal fissures, improving overall recovery. The aim of this study was to conduct a comparative analysis of outcomes following haemorrhoidectomy with and without lateral internal sphincterotomy (LIS) in the management of postoperative complications. **Material and Method:** This prospective randomized controlled trial (RCT) was conducted at the Outpatient Clinic of the Department of General Surgery, KD Medical College, Mathura, to compare postoperative outcomes of haemorrhoidectomy with and without lateral internal sphincterotomy (LIS). A total of 60 patients (30 per group) were randomized using a computer-generated table. Key outcomes assessed included postoperative pain (VAS) and bleeding incontinence. Statistical analysis was performed using SPSS, with significance set at $p \leq 0.05$. **Result:** Pain relief was significantly better in Group A at all time points ($p \leq 0.001$), with most patient's pain-free by 4 weeks. Bleeding and Constipation were significantly lower in Group A. **Conclusion:** This study finds that combining haemorrhoidectomy with lateral internal sphincterotomy significantly reduces postoperative pain and preserves anal sphincter function without increasing bleeding risk. Given these benefits, the combined approach is recommended to enhance recovery, patient comfort, and overall satisfaction.

KEYWORDS

Hemorrhoidectomy, Lateral Internal Sphincterotomy, Postoperative Pain and constipation

INTRODUCTION

Hemorrhoids, or piles, are a prevalent anorectal condition marked by the abnormal enlargement and displacement of the vascular cushions in the anal canal. The defining feature of hemorrhoidal disease is the abnormal dilation and distortion of these vascular channels, along with the degeneration of the supporting connective tissue within the anal cushions.[1] These cushions, which comprise blood vessels, smooth muscle, and connective tissue, are normally present to help maintain fecal continence by sealing the anal canal. The anal canal is divided by the dentate line, a key anatomical landmark. Above this line, the canal is lined with columnar epithelium, where internal hemorrhoids form. Internal hemorrhoids are pain- insensitive due to their visceral innervation. Below the dentate line, the canal is covered by squamous epithelium, where external hemorrhoids develop. External hemorrhoids are sensitive to pain due to the somatic innervation in this region. Mixed hemorrhoids involve both regions, straddling the dentate line.[2&3] Hemorrhoid formation results from pathophysiological changes such as increased venous pressure, congestion, and the weakening of supportive connective tissue. These changes can be triggered by factors like chronic straining during defecation, prolonged sitting, constipation, pregnancy, or any condition that raises intra- abdominal pressure. The treatment of hemorrhoids involves a broad spectrum of options, ranging from conservative management to more aggressive surgical interventions, depending on the severity and symptoms of the condition. The therapeutic approach to hemorrhoids includes dietary and lifestyle modifications, as well as surgical solutions, with treatment decisions based on the extent and severity of the condition.[4] Conservative management is typically the first-line treatment, particularly for early- stage hemorrhoids, aiming to alleviate symptoms and prevent progression. Key components of conservative care involve dietary changes, focusing on a high-fiber diet that includes fruits, vegetables, and whole grains, along with adequate fluid intake to soften stools and reduce the need for straining during defecation. Fiber supplements like psyllium or methylcellulose are commonly recommended to boost fiber intake. Topical treatments, such as creams, ointments, or suppositories containing anesthetics, corticosteroids, or astringents, offer relief from symptoms like pain, itching, and inflammation.[5]Today, excisional haemorrhoidectomy can be safely performed as an ambulatory procedure under perianal anesthetic infiltration.[6] Lateral Internal Sphincterotomy (LIS) is a surgical procedure mainly used to treat chronic anal fissures and anal spasms, which often occur following conditions such as hemorrhoidectomy. LIS is regarded as the gold standard and first-line surgical treatment for chronic anal fissures that do not respond to conservative management.[7] This study aims for comparing the outcomes after haemorrhoidectomy, with and without lateral internal sphincterotomy.

MATERIAL AND METHOD

Prospective Randomized Controlled Trial (RCT) was conducted on Out-patient clinic of Department of General Surgery, KD Medical College, Mathura. The study protocol was submitted for review to the Institutional Ethics Committee, and the study was conducted only upon obtaining approval. Written informed consent was sought from all participants before commencing the study. The randomized control trial (RCT) was registered in the Clinical Trial Registry-India (CTRI). Total sample size of 60 will be used in which 30 and 30 participants in the intervention and control groups will be included.

Group A- underwent open haemorrhoidectomy with lateral internal sphincterotomy (LIS)

Group B- underwent open haemorrhoidectomy without LIS.

Inclusion Criteria:

Age of patients between 18 to 60 years-

- Patients with second degree hemorrhoids (internal, interno-external), refractory to medical treatment.
- Patients with 3 rd or 4 th degree hemorrhoids (internal, interno-external)
- Patient giving written informed consent was taken

Exclusion Criteria:

- First and second-degree haemorrhoids, managed by medical line of treatment.
- Patients with medical co-morbidities like diabetes mellitus, hypertension, IHD, asthma. Etc.
- Previously treated Haemorrhoids- medical and surgical
- Faecal incontinence
- Patients with any concomitant perianal pathology such as perianal fissure, perianal fistula, rectal prolapse.

Follow-up and Data Collection

- Patients were followed up at 12, 24, 48 hours, and then after 1 and 4 weeks post-surgery for assessments of postoperative pain, bleeding, and faecal incontinence.
- An independent surgical resident, blinded to group allocation and the procedure performed, conducted postoperative assessments, follow-up visits, and data collection.

Statistical Analysis

Comparisons and analyses between VAS scores in the two groups on various days were conducted using the Student's t-test. Chi-square tests were applied for additional statistical analysis. A p-value of less than 0.05 was considered statistically significant.

RESULTS

The distribution of pain intensity in Groups A and B across four time points: 24 hours, 48 hours, 1 week, and 4 weeks. At 24 hours, all patients in Group A experienced pain, with 86.67% reporting mild pain

and 13.33% moderate pain, while in Group B, 73.33% reported moderate pain and 26.67% severe pain, showing a highly significant difference ($p < 0.001$). At 48 hours, 70% of Group A patients were pain-free, and 30% had mild pain, whereas no patients in Group B were pain-free, with 43.33% experiencing mild pain, 53.33% moderate pain, and 3.33% severe pain ($p = 0.0001$). After 1 week, 73.33% of Group A patients were pain-free, with 26.67% reporting mild pain, compared to 10% pain-free, 83.33% with mild pain, and 6.67% with moderate pain in Group B ($p = 0.0001$). At 4 weeks, 96.67% of Group A patients were pain-free, while 3.33% experienced mild pain, whereas in Group B, 50% were pain-free, 46.67% had mild pain, and 3.33% reported moderate pain ($p = 0.001$). These findings highlight significantly better pain resolution in Group A compared to Group B at all time points. (Figure 1)

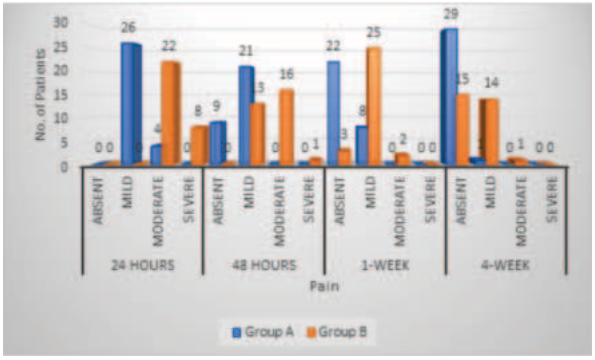

Figure 1- Comparison of Pain in Both Groups

The bleeding distribution in Groups A and B at 48 hours, 1 week, and 4 weeks, At 48 hours, 46.67% of patients in Group A had no bleeding, 46.67% experienced minimal bleeding, and 6.67% reported mild bleeding, while in Group B, only 10% were free of bleeding, with 46.67% having minimal, 36.67% mild, and 6.67% moderate bleeding. The difference was statistically significant ($p = 0.0008$). At 1 week, all patients in Group A were free of bleeding, compared to 46.67% in Group B, where an additional 46.67% had minimal bleeding and 6.67% mild bleeding, showing a significant difference ($p = 0.002$). At 4 weeks, 100% of patients in Group A and 90% in Group B were free of bleeding, while 10% of Group B reported minimal bleeding, with no significant difference between the groups ($p = 0.7$). These results indicate better bleeding resolution in Group A at earlier time points, with similar outcomes in both groups by 4 weeks. (Figure 2)

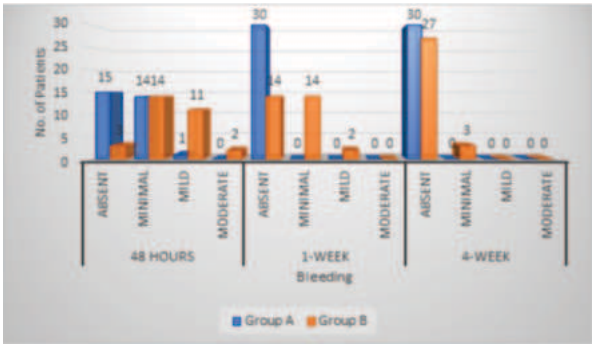

Figure 2- Comparison of Bleeding in Both Groups

DISCUSSION

The distribution of pain intensity between Groups A and B was assessed at four postoperative time points: 24 hours, 48 hours, 1 week, and 4 weeks. At 24 hours, all patients in Group A experienced pain, with the majority (86.67%) reporting mild pain and 13.33% experiencing moderate pain. In contrast, Group B had a more severe pain profile, with 73.33% reporting moderate pain and 26.67% experiencing severe pain, a highly significant difference ($p< 0.001$). By 48 hours, 70% of patients in Group A were pain-free, and the remaining 30% reported mild pain. In Group B, however, none were pain-free, with 43.33% experiencing mild pain, 53.33% moderate pain, and 3.33% severe pain ($p = 0.0001$). After one week, the trend continued, with 73.33% of Group A being pain-free and 26.67% experiencing mild pain, whereas only 10% of Group B was pain-free, with 83.33% reporting mild pain and 6.67% experiencing moderate pain ($p = 0.0001$). By four weeks, pain resolution was significantly better in Group A, where 96.67% were pain-free, and 3.33% had mild pain. In Group B, only 50% were pain-free, while 46.67% had mild pain and 3.33% moderate pain ($p = 0.001$). These findings indicate that pain resolution was significantly better in Group A compared to Group B at all time points. Findings from other studies support and contrast these results. Vijayaraghavalu S et al.[8] reported significantly lower mean pain scores at 12, 24, and 48 hours in patients who underwent lateral internal sphincterotomy (LIS) in addition to hemorrhoidectomy. However, Khubchandani[9] found no statistical difference in postoperative pain, attributing this to the location of LIS distal to the dentate line. Similarly, Kanellos et al.[10] observed a significant difference in pain scores after the first defecation and one-week post-surgery in patients with Grade 4 hemorrhoids.

The distribution of postoperative bleeding between Groups A and B was evaluated at 48 hours, 1 week, and 4 weeks. At 48 hours, 46.67% of patients in Group A had no bleeding, while an equal proportion (46.67%) experienced minimal bleeding, and 6.67% reported mild bleeding. In contrast, only 10% of patients in Group B were free of bleeding, with 46.67% experiencing minimal bleeding, 36.67% reporting mild bleeding, and 6.67% having moderate bleeding. The difference was statistically significant ($p = 0.0008$). By 1 week, all patients in Group A were free of bleeding, whereas in Group B, 46.67% had no bleeding, 46.67% had minimal bleeding, and 6.67% experienced mild bleeding, indicating a significant difference ($p = 0.002$). At 4 weeks, 100% of patients in Group A and 90% in Group B were free of bleeding, while 10% of Group B had minimal bleeding. However, this difference was not statistically significant ($p = 0.7$). These findings suggest that bleeding resolution was significantly better in Group A at earlier time points, but outcomes in both groups became comparable by 4 weeks. Supporting studies provide similar insights into postoperative bleeding. Selvarajan R et al.[11] reported that bleeding was observed in 16.7% (5 patients) of Group A and 20% (6 patients) of Group B, with no significant difference ($p = 0.7433$). Arija D et al.[12] found that per rectal bleeding was reported in 15% (9 cases) of Group A on the first postoperative day (POD) and in 5% (3 cases) of Group B, though the difference was not statistically significant ($p = 0.068$). At 48 hours, 11.7% (7 cases) in Group A experienced per rectal bleeding compared to only 1.7% (1 case) in Group B, demonstrating a significant difference ($p = 0.028$). By the first week, 11.7% (7 cases) of Group A still had per rectal bleeding, with a significant difference ($p = 0.006$). Overall, these findings indicate that postoperative bleeding varies depending on the time frame and the surgical approach used. While some studies report a significant difference between groups in the early postoperative period, the long-term bleeding outcomes appear comparable.

CONCLUSION

The findings of this study indicate that performing a haemorrhoidectomy combined with a lateral internal sphincterotomy offers significant advantages over haemorrhoidectomy alone. Specifically, patients who underwent the combined procedure experienced less postoperative pain, which is a critical factor influencing recovery and overall patient comfort. Importantly, the rate of postoperative bleeding was found to be similar in both groups, suggesting that adding lateral internal sphincterotomy does not increase the risk of bleeding complications. Considering these benefits, the incorporation of lateral internal sphincterotomy into the standard haemorrhoidectomy procedure can be recommended as a routine surgical technique, aiming to enhance pain relief and improve overall patient satisfaction and quality of life in the postoperative period.

REFERENCES

1. Loder PB, Kamm MA, Nicholls RJ, Phillips RK. Haemorrhoids: pathology, pathophysiology and aetiology. Br J Surg. 1994;81(7):946-54.
2. Morgado PJ, Suárez JA, Gómez LG, Morgado PJ. Histoclinical basis for a new classification of hemorrhoidal disease. Dis Colon Rectum. 1988;31(6):474-80.
3. Aigner F, Gruber H, Conrad F, Eder J, Wedel T, Zelger B, Engelhardt V, Lametschwandtner A, Wienert V, Böhler U, Margreiter R, Fritsch H. Revised morphology and hemodynamics of the anorectal vascular plexus: impact on the course of hemorrhoidal disease. Int J Colorectal Dis. 2009;24(1):105-13.
4. Acheson AG, Scholefield JH. Management of haemorrhoids. BMJ. 2008;336 (7640):380-3.
5. Alonso-Coello P, Mills E, Heels-Ansdell D, López-Yarto M, Zhou Q, Johanson JF, Guyatt G. Fiber for the treatment of hemorrhoids complications: a systematic review and meta-analysis. Am J Gastroenterol. 2006;101(1):181-8.
6. Lohsiriwat V, Lohsiriwat D. Ambulatory anorectal surgery under perianal anesthetic infiltration: analysis of 222 cases. J Med Assoc Thai. 2007;90(2):278-81.
7. Beaty JS, Shashidharan M. Anal fissure. Clin Colon Rectal Surg. 2016;29(1):30-7.
8. Vijayaraghavalu S, Prasad VJ. The role of lateral internal sphincterotomy in haemorrhoidectomy: a study in a tertiary care center. Cureus. 2021;13(6):e15630.
9. Khubchandani IT. Internal sphincterotomy with hemorrhoidectomy does not relieve pain: a prospective, randomized study. Dis Colon Rectum. 2002;45:1452-7.

10. Kanellos I, Zacharakis E, Christoforidis E, Angelopoulos S, Kanellos D, Pramateftakis MG, Betsis D. Usefulness of lateral internal sphincterotomy in reducing postoperative pain after open hemorrhoidectomy. World J Surg. 2005;29(4):464-8.
11. Selvarajan R. Efficacy of haemorrhoidectomy versus haemorrhoidectomy with internal sphincterotomy in treatment of haemorrhoids: a retrospective randomized controlled trial study. Int Surg J. 2021;8:839-43.
12. Arija D, Melwani R, Melwani S, Kumar R, Sial I. Outcomes after hemorrhoidectomy with or without lateral sphincterotomy: an observational study. J Res Med Dent Sci. 2022;10(1):477-81.