

Does Lateral Internal Sphincterotomy Impact the Outcome of Haemorrhoidectomy

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ABSTRACT

Background: The most common complication after hemorrhoidectomy is almost always postoperative. This dreadful complication makes the patients postpone the treatment even for prolapsing, bleeding, and uncomfortable piles. There are different methods that can be used for reducing pain including performing a lateral internal sphincterotomy (LIS). Better outcome of hemorrhoidectomy combined with lateral internal sphincterotomy has been observed in a few past controlled trials with respect to decreased pain after surgery, and improved and early wound healing.

Objective: To compare the mean post-operative pain score in patients undergoing open hemorrhoidectomy with and without lateral internal sphincterotomy for III and IV degree hemorrhoids.

Study Design: Randomized control trial.

Place and Duration of Study: Department of Surgery, Jinnah Hospital Lahore from 1st July 2021 to 31st December 2021.

Methodology: One hundred and twenty patients with diagnosis of III & IV degree hemorrhoids were selected. They were divided in two groups, Group A included patients who underwent open hemorrhoidectomy with lateral sphincterotomy and Group B included patients who underwent open hemorrhoidectomy alone. Standard Milligan Morgan Hemorrhoidectomy was done under local anesthesia. A fine surgical blade was inserted in inter-sphincteric groove with blade parallel to the circular fibers of internal sphincter. Blade was then rotated so that it faces the lumen of the anal canal. With the surgeon's index finger in the canal, the blade was advanced towards the index finger so as to divide the internal sphincter but not the anal mucosa. Post-operative pain was assessed at first 48 hours post operatively according to 'Visual Analog Score'.

Results: The mean age was 34.6±7.72 in Group A and 34.28±8.09 years in Group B. There were 34 (56.67%) males in Group A and 32 (53.33%) in Group B while 26 (43.33%) females in Group A and 28 (46.67%) in Group-B. The mean pain score was 1.43±0.49 in Group A and 2.03±0.74 in Group B (P=0.001).

Conclusion: Open hemorrhoidectomy with lateral sphincterotomy results in significantly lower mean post-operative pain when compared to open hemorrhoidectomy alone

Keywords: Hemorrhoids, Open hemorrhoidectomy, Lateral sphincterotomy, Post-operative pain

INTRODUCTION

Internal hemorrhoids are anal cushions which become symptomatic due to underlying etiology. They are located specifically in the 3, 7 and 11 o'clock positions.¹ The classification of internal hemorrhoids depending upon the extent to which they protrude from anus. The grade 1 hemorrhoids are just dilate veins which may bleed but they do not prolapse. The grade 2 hemorrhoids prolapse with straining but go back themselves; grade 3 hemorrhoids prolapse and must be placed back manually; and grade 4 hemorrhoids become permanently protruded.²

Hemorrhoids are specialized immensely vascular cushions of distinct bundles of thick sub mucosa that contain blood vessels, smooth muscles, elastic and connective tissue. This may slip down due to destruction of collagen and supporting connective tissue which anchors the anal cushions. This contributes to symptoms like prolapse, pain and bleeding etc.³

Hemorrhoids disease is a known human disease from the start of history.⁴ It affects almost half of the adults above 50 years of age; however, the exact occurrence is difficult to establish because patients often defer to seek medical attention due several factors including personal, socioeconomic and cultural reasons and due to fear of pain. The protracted recovery and the cost of open operative treatment almost obstacles the treatment.⁴ There has been focus on surgical procedures to treat hemorrhoid in the past decade but Milligan Morgan Hemorrhoidectomy is still one of the most overrated surgical treatments of hemorrhoids.⁵

The principles of treatment are to alleviate symptoms, not necessarily to improve the appearance of anal canal. Conservative therapy include bulk laxatives, avoidance of straining, topical application of local anesthetic, or steroid based suppositories for pain and use of glycerin suppositories if there is any impairment of rectal evacuation.⁶ Another option is outpatient therapy. The principle of outpatient therapy is to fix the mucosa above the prolapsing hemorrhoids. It is suitable for first, second and some third-degree haemorrhoids. It includes: Rubber band ligation, Injection sclerotherapy, Photocoagulation, Cautery or laser hemorrhoidectomy and Suture ligation of haemorrhoids.

Hemorrhoidectomy may be open or closed. Stapled haemorrhoidectomy and hemorrhoidal artery ligation is also a treatment option.⁶

According to a study internal sphincterotomy significantly reduces post-operative pain after Milligan Morgan hemorrhoidectomy.⁵ Another study revealed that mean post-operative pain score in patients with open hemorrhoidectomy with internal sphincterotomy was 1.60±0.8 and in patients with open hemorrhoidectomy alone it was 2.32±1.16 at first 48 hours, with a P-value <0.01. Likewise, the early complications like urinary retention and pain during first bowel motion were also significantly low (P<0.01) in the study group in comparison to the control group.⁷

Many studies in different centers around the world are being carried out on this topic to date, majority of which support my hypothesis. Much work has not been done in our population and ethnicity.⁸⁻¹⁰ A study carried out in Jamshoro also showed significant reduction in post-operative pain in open hemorrhoidectomy with lateral sphincterotomy.⁸ My study will contribute to analyze the implications of lateral sphincterotomy with open hemorrhoidectomy in our population and will encourage the local surgeons to practice this procedure with confidence.

MATERIALS AND METHODS

This randomized control trial was conducted in Surgical Unit, Jinnah Hospital Lahore from 1st July 2021 to 31st December 2021 after approval from Hospital Ethical Review Board. The sample size for this study was calculated to be 120 cases; being divided into two groups. Group A patients underwent open hemorrhoidectomy with lateral sphincterotomy and Group B patients underwent open hemorrhoidectomy alone. This was estimated using confidence interval of 95%, power of test was taken as 80% and taking mean VAS pain score 1.60±0.8⁷ in Open hemorrhoidectomy with internal sphincterotomy VS 2.32±1.16⁷ in open hemorrhoidectomy alone group in patients with III and IV degree haemorrhoids. All patients having age between 20-50 years, both males and females and grade III & IV hemorrhoids

were included. Patients with hemorrhoidal recurrence and having hemorrhoids with other anorectal diseases i.e. anal fissure, perianal fistula, perianal abscess were excluded.

Group A included patients who underwent open hemorrhoidectomy with lateral sphincterotomy. In this procedure, in addition to Standard Milligan Morgan Hemorrhoidectomy, intersphincteric groove was identified. Local anesthetic with weak adrenaline solution was infiltrated in the submucosal and intersphincteric planes. A fine surgical blade was inserted in intersphincteric groove with blade parallel to the circular fibers of internal sphincter. Blade was then rotated so that it faces the lumen of the anal canal. With the surgeon's index finger in the canal, the blade was advanced towards the index finger so as to divide the internal sphincter but not the anal mucosa. About 30% fibers were divided. Group B included patients who underwent open hemorrhoidectomy alone. Standard Milligan Morgan Hemorrhoidectomy was done under local anesthesia. Post-operative pain was assessed at first 48 hours post operatively according to 'Visual Analog Score'. Predictable bias and confounding factors like grade of hemorrhoids, other perianal conditions and age was controlled by restriction and randomization. Rest would be addressed during final analysis.

All the collected data was entered into SPSS-15. The mean pain score was compared to test the hypothesis. Data was stratified for grade of hemorrhoids to address the effect modifier. Then student's t-test was applied to check the significance; p-value ≤ 0.05 was considered significant.

RESULTS

There were 35 (58.33%) patients in Group A and 38 (63.33%) patients in Group B between 20-35 years of age while 25 (41.67%) patients in Group A and 22 (36.67%) in Group B between 36-50 years of age with mean ages was 34.6 ± 7.72 in Group A and 34.28 ± 8.09 years in Group B. Thirty four (56.67%) males in Group A and 32 (53.33%) in Group B while 26 (43.33%) females in Group A and 28 (46.67%) in Group B (Table 1). Mean pain score in both groups was 1.43 ± 0.49 in Group A and 2.03 ± 0.74 in Group-B, p value=0.001 showing a significant ($P < 0.05$) difference (Table 2).

Table 1: Demographic information of the patients (n=120)

Variable	Group A		Group B	
	No.	%	No.	%
Age (years)				
20-35	35	58.33	38	63.33
36-50	25	41.67	22	36.67
Gender				
Male	34	56.67	32	53.33
Female	26	43.33	28	46.67

Table 2: Mean pain score in both groups (n=120)

Pain score	Group A	Group B
	1.43 ± 0.49	2.03 ± 0.74

P value= 0.001

DISCUSSION

The most widely used surgical therapy for the hemorrhoids of third and fourth degree is open hemorrhoidectomy or Milligan-Morgan Hemorrhoidectomy.^{11,12} The surgery has the disadvantage of serious postoperative pain majorly attributed to the involuntary contraction of internal anal sphincter. Lateral internal sphincterotomy is a famous surgical procedure for treatment of anal fissures. When it is done together with hemorrhoidectomy, it would decrease the internal sphincter tone and postoperative pain. The persistent characteristic of hemorrhoidectomy is postoperative. It forces the patients to delay the treatment even for complicated hemorrhoids including prolapsed, bleeding, and uncomfortable piles. Different methods have been tried to reduce pain including Lateral internal sphincterotomy (LIS). It has been observed in a few randomized controlled trials that hemorrhoidectomy in combination with lateral internal

sphincterotomy results in relatively decreased postoperative pain and improved wound healing.^{13,14}

The outcome of this study is comparable with a study revealing that mean post-operative pain score in patients with open hemorrhoidectomy combined with internal sphincterotomy was 1.60 ± 0.8 and in patients with open hemorrhoidectomy alone it was 2.32 ± 1.16 at first 48 hours, with a P-value < 0.01 . Likewise, early complications including urinary retention and pain during first bowel motion after surgery were also significantly low ($P < 0.01$) in the hemorrhoidectomy with sphincterotomy group when compared to the control group.⁷

A study by Khan et al² compared the two groups of patients after classical Milligan Morgan hemorrhoidectomy, with and without lateral internal sphincterotomy with respect to postoperative pain. One hundred and eight patients were included in the study, 54 in each group. Patients in group B suffered less postoperative pain as compared to Group A (p value=0.000). Our findings are corresponding to these results.

Kamruzzaman et al¹³ observed that the patients who did not undergo internal sphincterotomy faced excruciating pain as compared to those who had internal sphincterotomy along with hemorrhoidectomy. This difference was found to be statistically significant. The meta-analysis of Wang showed that excisional hemorrhoidectomy combined with lateral sphincterotomy resulted in lesser post-operative pain. A study concluded on the point that post operative wound healing, pain and other complications were lesser in patients in whom lateral internal sphincterotomy was combined with hemorrhoidectomy to treat haemorrhoids.¹³ A study by Vijayaraghavalu and Rajkumar¹⁴ showed that the pain 12 hours post operatively after hemorrhoidectomy with lateral internal sphincterotomy is 5.1 ± 1.9 as compared 6.12 ± 2.3 . This difference is statistically significant ($p < 0.0008$).

Our results contribute to analyze the implications of lateral sphincterotomy with open hemorrhoidectomy in our population and encourage the local surgeons to practice this procedure with confidence.

CONCLUSION

Open hemorrhoidectomy with lateral sphincterotomy results in significantly lower mean post-operative pain when compared to open hemorrhoidectomy alone.

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