

Open Versus Closed Lateral Internal Sphincterotomy in Chronic Anal Fissures: A Prospective Study

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Abstract

Background: Fissure-in-ano is a very common anal disorder which predominantly presents with severe pain. Lateral internal sphincterotomy remains the main treatment modality. This may be performed using open or closed method, each with their attendant complications.

Objective: This prospective study compared the results and complications of open versus closed technique of lateral sphincterotomy in patients with chronic anal fissure.

Materials and Methods: A total of 64 patients with chronic anal fissure were enrolled in this study. Of these, 34 patients underwent open lateral sphincterotomy, and 30 underwent closed sphincterotomy. They were followed up for 6 months postsurgery. The results and complications of the two groups were compared and statistically analyzed.

Results: Post-operative complications such as pain, bleeding, infection, incontinence, and recurrence were compared between the two groups. Pain, bleeding, and incontinence to flatus were significantly lesser in the closed group ($P < 0.05$), while there was no difference in the incidence of infection and recurrence between the two groups.

Conclusion: Closed lateral internal sphincterotomy is a better alternative compared to open sphincterotomy in the treatment of chronic anal fissures.

Key words: Chronic fissure, Closed method, Lateral sphincterotomy, Open method

INTRODUCTION

A longitudinal ulcer in the anal canal is called as fissure in ano. It can be an acute anal fissure or chronic anal fissure. It is one of the benign painful conditions of anoderm, which is caused by raising internal sphincter spasm with impaired tissue perfusion. The classical vicious cycle formed by pain, and consequently, internal sphincter spasm that leads to fissure formation causes pain in anoderm.^{1,2} Hence, the aim of the treatment is to break this vicious cycle. Chronic

fissures are characterized by sentinel tag, hypertrophic anal papillae, anal sphincter spasm, and fibrosis. In recumbent position, the chronic fissure is commonly seen posteriorly at 6 o' clock position and sometimes in 12 o' clock position. Chronic fissures are more difficult to treat conservatively.³ There are many methods to relax the hypertonic internal anal sphincter such as topical glyceryltrinitrate (0.2%), topical diltiazem, botulinum toxin injection, and surgical internal sphincterotomy. Among these methods, surgical sphincterotomy has the highest healing rate with low recurrence.⁴⁻⁶ There are various surgical methods of treatment of anal fissure such as anal dilatation, fissure excision, fissure excision with sphincterotomy, open lateral anal internal sphincterotomy and closed anal internal sphincterotomy. This study was designed to compare the results of the open and closed technique of lateral internal sphincterotomy with reference to post-operative complications and outcomes.

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MATERIALS AND METHODS

This is a prospective study conducted from 2013 to 2014 in our hospital, which is a tertiary care center. In total, 64 patients were included in our study. These patients were evaluated and diagnosed as chronic anal fissure by detailed history and physical examination. These patients were randomly divided into two groups. In Group A 34 patients were treated with open lateral sphincterotomy (OLS) and in Group B 30 patients were treated with closed lateral sphincterotomy (CLS). In all patients, parameters such as age, sex, pain, bleeding, perianal swelling, constipation, and pruritus ani were collected before surgery. Site of anal fissure was documented for all patients. Both the groups of the patients were evaluated before surgery for anesthetic fitness. Patients with hemorrhoids, fistula and any other anorectal diseases were excluded from the study.

In Group A, with the patient in lithotomy position clear identification of the internal sphincter was done after making an 1 cm incision in 3 o' clock position. Sphincter segment was hooked with curved artery forceps and divided with electrocautery or by scissors. Then, pressure was maintained for few minutes to ensure good hemostasis. Wound was kept open for healing through secondary intention.

In Group B, the anal canal was retracted using an anal retractor. The internal sphincter is felt like a tight band. Intersphincteric groove was identified by palpation. An 11 size scalpel was introduced through the perianal skin at 3 o' clock position to enter into the intersphincteric groove. Anal canal support was provided with the back of grasping forceps, and when the tip of the blade reached the dentate line, the blade was turned inward and forward to cut the internal anal sphincter. The pressure was applied for few minutes for hemostasis.

In both methods, about $\frac{1}{3}$ to $\frac{1}{2}$ of internal sphincter was divided. Patients were followed up for 6 months after surgery to assess the results and complications such as pain, bleeding, infection, incontinence, and recurrence.

Statistical analysis was performed using SPSS software version 17. The Chi-square test was used to analyze statistical significance of results. $P < 0.05$ is considered as statistically significant.

RESULTS

In our study group, the most common presentation of anal fissure was pain on defecation. Of the 64 patients, 41 were males and 23 were females with a ratio of nearly 2:1. The mean age was 34 ± 5 years. About 60% of the patients

had a posterior fissure and 36% had anterior fissure. Only 2 patients had both anterior and posterior fissures. This is similar to the observation made by Gupta *et al.*⁷ After surgery, almost 85% of the patients were symptom-free on post-operative day 2. Post-operative pain and other complications are enlisted in Table 1.

In OLS group 9 patients had significant day 2 post-operative pain but only 2 patients had it in CLS group, which is statistically significant ($P = 0.036$). Post-operative bleeding was present in 5 patients, with all the patients in the OLS group ($P = 0.028$). Wound infection was seen in 3 patients in the OLS group, and there was none in the CLS group, which is not statistically significant ($P = 0.095$). Incontinence to flatus was present in 3 patients in the CLS group and 11 patients in the OLS group with a P value of 0.031. At the end of 6 months, of the 48 patients who reviewed, 2 patients had recurrence in the OLS group and 3 patients in the CLS group ($P = 0.75$).

DISCUSSION

Chronic anal fissure can be easily managed by surgical treatment. OLS and CLS are the two effective methods commonly performed for fissure in ano. In our study, anal pain (69%) and bleeding (60%) are the most common modes of presentation. In the study by Hananel and Gordon,⁸ 90.8% presented with pain and 71.4% with bleeding. In our study, post-operative pain relief was present in 87.5% of patients in CLS group and 75% in OLS group, which is similar to Hiltunen and Matikainen.⁹ Regarding post-operative complications, pain, bleeding, and incontinence were significantly lesser in the CLS group, while infection and recurrence were similar in both the groups. Pernikoff *et al.* have reported that the complication rate is relatively higher in OLS.¹⁰ Kortbeek *et al.*¹¹ and Ullah and Nadeem¹² also observed that closed sphincterotomy is associated with lesser complications when compared to open method.

CONCLUSION

Closed lateral internal sphincterotomy can be used as a treatment of choice for chronic anal fissure. It is effective

Table 1: Comparative table of OLS versus CLS

Factors	Group A (OLS)	Group B (CLS)	P value
Number of patients	34	30	
Pain	9	2	0.036
Bleeding	5	0	0.028
Infection	3	0	0.095
Incontinence	11	3	0.031
Recurrence	2	3	0.75

OLS: Open lateral sphincterotomy, CLS: Closed lateral sphincterotomy

and safe with lower rates of complication than open sphincterotomy technique.

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