

Comparative Analysis of Fissurectomy and Lateral Internal Sphincterotomy For Fissure in Ano at a Medical College Hospital

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ABSTRACT

Background: An anal fissure is a common benign anorectal problem resulting in pain and bleeding during defecation. The study was conducted in the department of general surgery to compare study of Fissurectomy & Lateral Internal Sphincterotomy (LIS) for the Treatment of Fissure in Ano.

Materials and Methods: The study was conducted in the Department of General Surgery, Shri Shankaracharya Institute of Medical Sciences, Junwani, Bhilai, Chhattisgarh (India). The details of the patients and the findings were recorded. At the end of the follow-up, post-surgical complications were recorded. Data were analyzed by using SPSS Statistics for Windows, Version 20.0. $p < 0.05$ was considered statistically significant.

Results: In the fissurectomy group, 26.66% patients developed retention of urine, 33.33% patients showed incontinence to flatus, 28.33% patients became incontinent to liquid, Incontinence to solid was seen in 18.33% patients and there was no recurrence in this group after six months of follow-up. In the LIS group, 10% patients developed retention of urine, 16.66% patients showed incontinence to flatus, 15% patients became incontinent to liquid, Incontinence to solid was seen in 3.33% patient and A total of 10% male patients had recurrence after six months.

Conclusion: The present study concluded that LIS was a better treatment option for anal fissure than Fissurectomy as postoperative complications were less in LIS. But the recurrence was higher in the LIS group while there was no recurrence in the fissurectomy group.

Keywords: Fissurectomy, Lateral Internal Sphincterotomy, Fissure in Ano.


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INTRODUCTION

Anal canal is a muscular tube of 3–4 cm. The lining is cuboidal columnar mucosa in upper part and stratified squamous in the lower part in relation to the dentate line. The upper part of anal canal is endodermal in origin and the lower third is ectodermal.¹ It is a structure of great surgical importance in maintaining continence and has a rich vascularity and neural nerve distribution. Fissure-in-ano is a linear ulcer of the lower half of the anal canal, usually located in the posterior commissure in the midline. In the general population, the frequency of anal fissure is around 1 in 350.² Anal fissure is a distinct clinic pathological condition of the lower anal canal. It can be defined as a ulcer in the anoderm usually in the posterior midline, less frequently in the anterior midline, and rarely in the lateral position of the anal canal.³⁻⁶ When traction is applied on each side of the anus, the fissure appears to be triangular in shape, with the apex near the

dentate line and the base over the lower anal canal.^{3,6} Anal fissure is a common condition in young adults with an approximately equal sex ratio.^{7,8} The treatment of anal fissure whether surgical or medical, aims to reduce internal anal sphincter tone alone.^{9,10} The study was conducted in the department of general surgery to compare study of Fissurectomy and Lateral Internal Sphincterotomy (LIS) for the Treatment of Fissure in Ano.

MATERIALS AND METHODS

The study was conducted in the Department of General Surgery, Shri Shankaracharya Institute of Medical Sciences, Junwani, Bhilai, Chhattisgarh (India). Before the commencement of the study ethical approval was taken from the ethical committee of the institute and informed consent was taken from the patient. All patients attending the department of surgery with chronic anal

fissure and age above 18 years were included in the study. The details of the patients and the findings were recorded. Patients with multiple anal fissures, recurrent fissures, fissures with hemorrhoids and fistula, fissures associated with malignancies, fissures secondary to specific diseases like tuberculosis, etc., pregnant women were excluded from the study.

All of them were initially managed according to the same conservative standard protocol, namely, medical treatment including dietary modification, stool softeners, and local ointments. All patients were assessed five to six weeks after the first visit, and surgical treatment was offered in the case of refractory symptoms. All the included patients were randomized into two groups (fissurectomy and LIS). The patients were started on stool softener two days before surgery. They were kept on a liquid diet 24 hours before the operation.

On the day of operation, the patients were given an enema to avoid any soiling during surgery. All the patients underwent surgery in the lithotomy position after giving spinal anesthesia. Prophylactic parenteral antibiotics were administered just before the procedure according to a standardized protocol.

In the fissurectomy group, anal dilatation was done for four minutes by using a four-finger technique followed by fissurectomy. The fissure was excised using a scalpel, and the wound was curated till a healthy margin was reached up to the level of the internal sphincter. Thus, a fresh ulcer was made without scar tissue and was allowed to heal by secondary intention. The presence of any concomitant skin tag or sentinel pile was also excised. In the LIS group, the surgery was done using the closed method. A bivalve speculum was inserted into the anal canal. The groove between the internal and external anal sphincter was felt with the left-hand index finger. Then a scalpel was inserted into the groove and cautiously turned towards the internal sphincter to divide the muscle partially at the level of the apex of the fissure. Then an anal pack was given to stop any minor bleeding which was taken out after 24 hours and an oral liquid diet was started after four hours. All the patients were kept on IV antibiotics and

analgesics for an appropriate period. The patients were discharged on the third day after a final look into the wound. They were advised to do a warm sitz bath and use a stool softener for two to three weeks along with local ointment to lubricate the anal canal.

The first visit was scheduled after two weeks and subsequent visits on the first and second months. Then the patients were followed up for the next six months. At the end of the follow-up, post-surgical complications were enquired, recorded, and interpreted.

Statistical analysis Data were analyzed by using SPSS Statistics for Windows, Version 20.0 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp). Appropriate statistical tests were used to compare the results of fissurectomy and LIS. Descriptive results were expressed as mean and SD of various parameters. $p < 0.05$ was considered statistically significant.

RESULTS

The present study included 120 participants in which 30 were males and 30 were females in the fissurectomy group and the LIS group comprised 30 males and 30 females. In the fissurectomy group, 26.66% patients developed retention of urine, of whom 30% were male and 23.33% were female.

A total of 33.33% patients showed incontinence to flatus which was found to be more in females (40%). 28.33% patients became incontinent to liquid, most of whom were female (36.66%). Incontinence to solid was seen in 18.33% patients, with 23.33% of them being female. There was no recurrence in this group after six months of follow-up.

In the LIS group, 10% patients developed retention of urine, 10% each were male and female. A total of 16.66% patients showed incontinence to flatus which was found to be more in females (26.66%). 15% patients became incontinent to liquid, most of whom were female (20%). Incontinence to solid was seen in 3.33% patient, who was females. A total of 10% male patients had recurrence after six months.

Table 1: Complications in fissurectomy group.

Complications	Males (N=30) %	Females(N=30) %	Total (N=60) %
Retention of urine	9(30%)	7(23.33%)	16(26.66%)
Incontinence to flatus	8(26.66%)	12(40%)	20(33.33%)
Incontinence to liquid	6(20%)	11(36.66%)	17(28.33%)
Incontinence to solid	4(13.33%)	7(23.33%)	11(18.33%)
Recurrence after 6 months	0(0%)	0(0%)	0(0%)

Table 2: Complications in lateral internal sphincterotomy (LIS) group.

Complications	Males (N=30) (%)	Females(N=30) (%)	Total (N=60) (%)
Retention of urine	3(10%)	3(10%)	6(10%)
Incontinence to flatus	2(6.66%)	8(26.66%)	10(16.66%)
Incontinence to liquid	3(10%)	6(20%)	9(15%)
Incontinence to solid	0(0%)	2(6.66%)	2(3.33%)
Recurrence after 6 months	3(10%)	0(0%)	3(5%)

DISCUSSION

Sphincterotomy as the surgical treatment of choice for chronic anal fissure was first described by Boyer.¹¹ Following that, a lot of procedures have been developed to address the issue. Fissurectomy, anal dilatation, posterior and lateral sphincterotomy, and advancement flap are few proposed procedures among them.¹² In lateral internal sphincterotomy, the internal sphincter is divided in its distal third away from the fissure itself - either in the right or left lateral position.¹³

In the fissurectomy group, 26.66% patients developed retention of urine, of whom 30% were male and 23.33% were female. A total of 33.33% patients showed incontinence to flatus which was found to be more in females (40%). 28.33% patients became incontinent to liquid, most of whom were female (36.66%). Incontinence to solid was seen in 18.33% patients, with 23.33% of them being female. There was no recurrence in this group after six months of follow-up. In the LIS group, 10% patients developed retention of urine, 10% each were male and female. A total of 16.66% patients showed incontinence to flatus which was found to be more in females (26.66%). 15% patients became incontinent to liquid, most of whom were female (20%). Incontinence to solid was seen in 3.33% patient, who were females. A total of 10% male patients had recurrence after six months. Mousavi *et al* also had better results with LIS compared to fissurectomy.¹⁴

Kortbeek *et al* also stated that closed sphincterotomy with less postoperative complications is successful in the treatment of fissure-in-ano. No case of delayed or absent healing was observed in both the modified closed LIS group and the closed LIS group. Only one recurrence of anal fissure was noted on long-term follow-up in the study. No cases of incontinence to stool or flatus were noted on long-term follow-up in the study.¹⁵

A study done by Hoffman and Goliger revealed that patients undergoing LIS had occasional incontinence to flatus and feces.¹⁶

Garcia *et al* demonstrated that incontinence among patients undergoing LIS was ranging from 16.1% to 26.7%.¹⁷

Daniel O in his study of chronic anal fissures found that LIS is an effective procedure with a high rate of resolution of symptoms but with a risk of temporary or permanent incontinence.¹⁸

CONCLUSION

The present study concluded that LIS was a better treatment option for anal fissure than Fissurectomy as postoperative complications were less in LIS. But the recurrence was higher in the LIS group while there was no recurrence in the fissurectomy group.

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