

# A Comparative Study of Efficacy of Outcome of Lateral Internal Sphincterotomy versus Subcutaneous Fissurectomy in Chronic Fissure in Ano

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## Abstract

**Background:** Fissure-in-ano is a very common problem across the world which causes considerable morbidity and affects the patient's quality of life to a greater extent. Anal fissure is a common painful condition affecting the anal canal. The main aim of study was to compare the efficacy of outcome of subcutaneous fissurectomy versus lateral internal sphincterotomy in chronic fissure in Ano. **Subjects and Methods:** The study was a prospective, parallel group, comparative trial. The study was conducted at Department of General Surgery, Chalmeda AnandRao Institute of Medical Sciences, Karimnagar. The number of patients included in the study was 50. Patients were divided into lateral internal sphincterotomy groups and subcutaneous fissurectomy groups. Patients were followed up regularly for relief of symptoms i.e., pain in the anal region and bleeding from anal region and for complications like incontinence; duration of sitz baths and number of work days lost. **Results:** The mean age group in the present study was  $38.24 \pm 9.96$  for subcutaneous fissurectomy and  $39.2 \pm 10.4$  for lateral internal sphincterotomy; there was no significant difference in the mean age in either of the groups with P value  $> 0.05$ . **Conclusion:** The current study shows results in favor of subcutaneous fissurectomy with a healing rate of 100% with faster pain-relief and minimal or no complications if performed by the hands of an experienced surgeon.

**Keywords:** Lateral internal sphincterotomy, subcutaneous fissurectomy, anal fissure

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## Introduction

Anal fissure is a common disorder, but its exact incidence is unknown. The condition may frequently be misdiagnosed as hemorrhoids by primary care providers. The clinical hallmark of anal fissure is pain during, and especially after, defecation. The pain may be short lived with acute fissures, but may last hours or even become continuous in chronic cases.<sup>[1]</sup>

Subcutaneous lateral internal sphincterotomy is the treatment of choice for chronic anal fissures. Sphincterotomy can be carried out using an open or a subcutaneous technique and under local or general anaesthesia. This procedure, however, has been associated with an overall risk of incontinence of about 10% in a systematic review of randomized surgical trials.<sup>[2]</sup>

The standard algorithm for anal fissure treatment has traditionally consisted of a trial of fiber supplementation, sitz baths, and topical analgesics. If the pain is intolerable or conservative care fails, surgery is performed (usually a lateral internal sphincterotomy/subcutaneous fissurectomy).

This study aim was to compare the efficacy of outcome of subcutaneous fissurectomy versus lateral internal sphincterotomy in chronic fissure in ano.

## Subjects and Methods

### Study Design

The study was a prospective, parallel group, comparative trial.

### Samplings

The number of patients included in the study is 50, Out of which 25 are in the test group and 25 are in the control group.

**Study Center**

The study was conducted at Department of General Surgery, Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar from October 2016 to November 2018.

**Inclusion Criteria**

- Patients between 25 to 70 years
- Age of both sexes
- Patients of chronic fissure in ano.

**Exclusion criteria**

- Recurrent fissures
- Fissures with hemorrhoid’s and fistula
- Fissure associated with malignancies
- Fissure secondary to specific diseases like tuberculosis, crohn’s disease etc.
- Pregnant women

**Group A:** Patients were treated with lateral internal sphincterotomy.

**Group B:** patients were treated with subcutaneous fissurectomy

The patients were followed up for a period of 6 months and were evaluated for relief of symptoms. Observations were recorded at the end of 6 months following the treatment in a proforma designed for the purpose. Subcutaneous fissurectomy and Lateral internal sphincterotomy were performed by senior surgeons in the hospital.

Patients in both the treatment groups were prescribed standard treatment for fissure in the form of stool softeners, sitz bath and fibre diet. Also, the operated patients were treated with a single dose of a broad spectrum antibiotic at the start of surgery.

**Ethics approval**

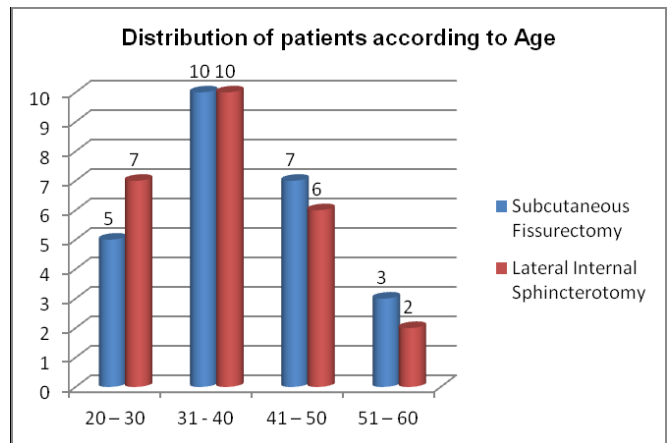
This study was reviewed and approved by the institute ethics committee, CAIMS, Karimnagar. All patients gave written informed consent to be included.

**Statistical Analysis**

The data obtained was analyzed using SPSS software version 20.0. Appropriate statistical tests were used to compare subcutaneous fissurectomy and lateral internal sphincterotomy. Descriptive results are expressed as mean and SD of various parameters. Probability value (p value) was used to determine the level of significance, p value < 0.05 was considered as significant, p value < 0.01 was considered as highly significant.

**Results**

In the present study it was observed that patients with chronic fissure were more common in the age group of 31-40 years. The mean age group in the present study was 38.24 ± 9.96 for subcutaneous fissurectomy and 39.2 ± 10.4 for lateral internal sphincterotomy; there was no significant difference in the mean age in either of the groups with p- value > 0.05 [Figure 1].



**Figure 1: Age distribution of the patients**

In the present study it was observed that the group which underwent subcutaneous fissurectomy had 60% males and 40 % females compared to 64 % males and 36 % females in the group which underwent lateral internal sphincterotomy. There was no statistical significance (p>0.05) in gender wise distribution in both groups [Table 2]

**Table 1: Gender distribution of the patients**

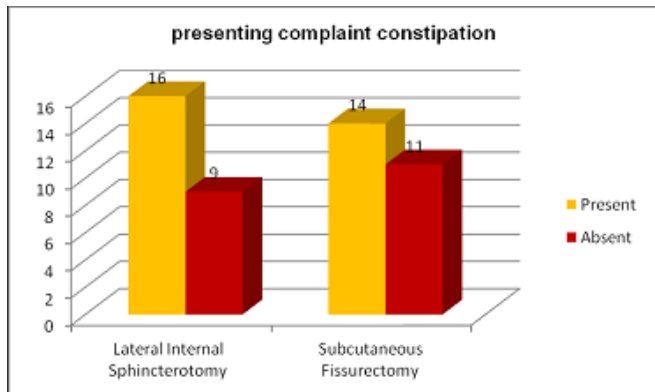
Gender	Subcutaneous Fissurectomy No (%)	Lateral Internal Sphincterotomy No (%)
Male	15 (60)	16 (64)
Female	10 (40)	9 (36)

The mean duration of symptoms in patients undergoing subcutaneous fissurectomy was 3.36 ± 0.37 and lateral internal sphincterotomy was 3.38 ± 0.36 there was no significant difference in duration of treatment in either groups. Pain was presenting symptom in 100 % of cases in either groups [Table 2].

64 % of cases who underwent lateral internal sphincterotomy presented with constipation as one of the presenting complaint compared to 56 % of cases who underwent subcutaneous

**Table 2: Comparison of symptom duration in both treatment arms**

Duration	Subcutaneous Fissurectomy No (%)	Lateral Internal Sphincterotomy No (%)
3 months	10 (40)	11 (44)
3.5 months	11 (44)	10 (40)
4 months	4 (16)	4 (16)
Mean ± SD	3.36 ± 0.37	3.38 ± 0.36



**Figure 2: Comparison of presenting complaint constipation**

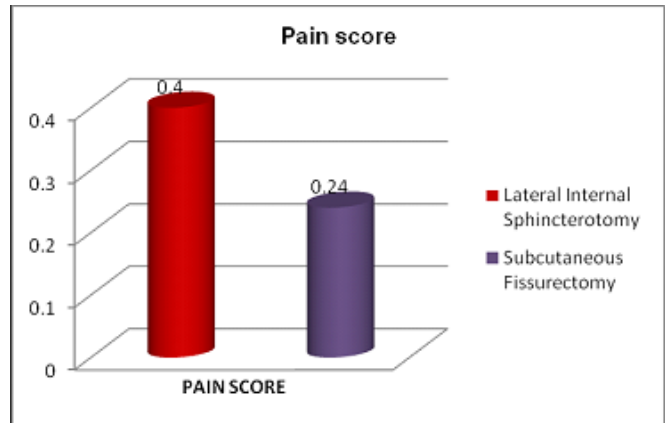
fissurectomy, there was no significant difference in presenting complaint in either group [Figure 2].

**Table 3: Comparison of patients based on site of fissure in ano**

Position of fissure	Lateral Internal Sphincterotomy No (%)	Subcutaneous Fissurectomy No %
Posterior	15 (60)	16 (64)
Anterior	10 (40)	9 (36)

[Table 3] shows that 80 % of cases who underwent lateral internal sphincterotomy had fissure in the posterior wall and 20 % cases had fissure in the anterior wall compared to 84 % of cases who underwent subcutaneous fissurectomy, had fissure in the posterior wall and 16 % cases had fissure in the anterior wall there was no significant difference in position of fissure in either groups (p=0.713).

In the present study all the patients were followed up after 6 months, pain score was evaluated using VAS it was observed that mean pain score was 0.4 in cases who underwent lateral internal sphincterotomy compared to 0.24 in cases who underwent subcutaneous fissurectomy, though the mean pain score was lower in patients who underwent



**Figure 3: Comparison of main score in patients after 6 months follow up**

subcutaneous fissurectomy this decrease in mean pain score was not statistically significant p=0.34 [Figure 3].

All the patients were followed up after 6 months it was observed that 84 % of cases who underwent lateral internal sphincterotomy had healing compared to 96 % of cases who underwent subcutaneous fissurectomy, i.e. healing was higher in patients who underwent subcutaneous fissurectomy [Table 4].

In the present study, patients who underwent lateral internal sphincterotomy showed a higher mean duration of absenteeism 3.08 weeks when compared to patients who underwent subcutaneous fissurectomy 0.76 weeks. The duration of absenteeism was significantly higher in patients who underwent lateral internal sphincterotomy p<0.001 [Table 5].

## Discussion

In year 1818 for the first time, Boyer suggested sphincterotomy as a treatment of anal fissures. [3] Later on, several surgical techniques (fissurectomy, anal dilation, posterior and lateral sphincterotomy and advanced flap) have been performed for management of CAF. [4]

The overall incidence of posterior anal fissure was found to be 80% making it the most common site involved. Anterior anal fissure was noted in 20% of patients. This is in conjunction with the study from Boulous which says posterior fissure (85.7%) is more common than anterior fissure (14.2%). [5]

Twenty five patients underwent subcutaneous fissurectomy, 22 (88%) patients healed completely at the end of 6 weeks, while 24(96%) fissures healed completely by six months. Out of 25 patients who underwent lateral internal sphincterotomy 18 (72%) fissures healed completely by 6th week, while 21 (84%) fissures healed completely by six months.

**Table 4: Comparison of healing in patients after 6 months follow up**

Healing	Lateral Internal Sphincterotomy No (%)	Subcutaneous Fissurectomy No (%)
Present	21 (84)	24 (96)
Absent	4 (16)	1 (4)

**Table 5: Comparison of Mean duration of absenteeism in patients after surgery**

Absenteeism	Lateral Internal Sphincterotomy Mean $\pm$ SD	Subcutaneous Fissurectomy Mean $\pm$ SD
Absenteeism In weeks	3.08 $\pm$ 1.2	0.76 $\pm$ 0.66
t-value	8.0	P < 0.001

In the lateral internal sphincterotomy group, mean pain score was 3.52 after 6 weeks follow up and Mean pain score was 0.4 after 6 months. Fissure was completely healed in 18 (72%) out of 25 patients by 6 weeks. Scouten WR et al reported pain relief in 98% of cases after undergoing internal sphincterotomy.<sup>[6]</sup> Jensen et al have reported a healing rate of 100% and Evans et al and Wiley et al have reported healing rate of 97% with lateral internal sphincterotomy.<sup>[7-9]</sup>

In the subcutaneous fissurectomy group, mean pain score was 2.64 by the end of 6th week and 0.24 by the end of six months. Fissure was completely healed in 22 (88%) out of 25 patients by 6 weeks and 24 (96%) at the end of six months. Subcutaneous fissurectomy is novel procedure; there are no studies available in this aspect.

There is no incontinence in subcutaneous fissurectomy group; transient incontinence for flatus was present in 2(4%) patients of the lateral internal sphincterotomy group. Adriano Tocchhi et al. report no long-term complication after internal sphincterotomy.<sup>[10]</sup> There was no recurrence in the subcutaneous fissurectomy group; but in 1(2%) recurrence occurred in the lateral internal sphincterotomy group.

In the present study, patients who underwent subcutaneous fissurectomy require sitz bath for a mean duration of 0.4 weeks when compared to patients who underwent lateral internal sphincterotomy (2.4 weeks). Patients who underwent subcutaneous fissurectomy showed a higher mean duration of absenteeism 0.7 weeks when compared to patients who underwent lateral internal sphincterotomy subcutaneous fissurectomy 3.08 weeks. Comparison between subcutaneous fissurectomy and lateral internal sphincterotomy showed a difference in pain relief (P=0.17), complications (P=0.03), mean duration of sitz baths (P<0.01), absenteeism (P<0.01) which was statistically significant.

The mean pain score decreased from 8.12 $\pm$ 1.33 to 0.34 $\pm$ 0.74 in patients treated with fissurectomy and from 8.44 $\pm$ 1.19 to 0.24 $\pm$ 1.20 in patients treated surgically with lateral internal sphincterotomy at the end of six weeks. The decrease in mean pain score in group B (lateral internal sphincterotomy)

as compared to group A (fissurectomy) at the end of 6 weeks was not statistically significant (p>0.001).

In this study showed that the lower rate of distressing complications, especially incontinence, and greater satisfaction of the patients, lateral internal sphincterotomy could be considered as a better alternative, sphincter-saving, and perhaps preferable approach in the surgical management of chronic anal fissures.

## Conclusion

The current study shows results in favor of subcutaneous fissurectomy with a healing rate of 100% with faster pain-relief and minimal or no complications if performed by the hands of an experienced surgeon. By comparing the above two modalities of treatment for chronic anal fissure, we conclude that subcutaneous fissurectomy is a better line of treatment in terms of faster pain relief, lesser complications, less mean duration of sitz baths and less absenteeism.

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