



## RESEARCH ARTICLE

### COMPARATIVE STUDY OF EFFICACY OF OUTCOME OF LATERAL INTERNAL SPHINCTEROTOMY VERSUS SUBCUTANEOUS FISSURECTOMY IN CHRONIC FISSURE IN ANO

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#### ABSTRACT

Anal fissure is a common painful condition affecting the anal canal. Chronic anal fissures are traditionally treated by manual anal dilatation or lateral internal sphincterotomy. There is a degree of anal incontinence with these procedures. Subcutaneous fissurectomy was performed in 20 cases with a control of 20 cases operated by lateral internal sphincterotomy. Results were evaluated for pain relief ( $p < 0.01$ ), incontinence ( $p = 0.03$ ), and no. of work days lost ( $p < 0.01$ ). Subcutaneous fissurectomy was found to yield superior results when compared to lateral internal sphincterotomy.

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## INTRODUCTION

Anal fissure is a disruption of the skin at distal anal canal. Majority of the population (30-40%) suffers from this condition at least once in a lifetime (Corman, 1998). Anal fissure was first described by Recamier in 1829 (Kodner *et al.*, 1999). Most anal fissures are located in the posterior midline, with 10% to 15% occurring anteriorly. "Off the midline" fissures must be viewed with suspicion for underlying pathology such as Crohn's disease, HIV/AIDS, tuberculosis, syphilis and anal carcinoma. Early fissures have the appearance of a simple tear in the anoderm. With the passage of time, chronic fissures develop thickened skin margins, and fibers of the internal anal sphincter (IAS) become visible at the fissure's base. Many patients with chronic fissures develop a sentinel skin tag at the distal fissure margin and a hypertrophied anal papilla just proximal to the fissure within the anal canal. 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. The pain is often severe enough for patients to dread or even attempt to void bowel movements altogether; some patients describe the pain as akin to passing razor blades or broken glass. Fissure patients also can experience rectal bleeding, usually consisting of small quantities of fresh blood. 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, then surgery is the option. This study is aimed to compare the efficacy of outcome of subcutaneous fissurectomy versus lateral internal sphincterotomy (LIS) in chronic fissure in ano in terms of pain, incontinence and number of work days lost (absenteeism).

## PATIENTS AND METHODS

### Study Design

The study was a prospective, parallel group, comparative trial. Patients admitted with chronic fissure in ano. 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 duration is ONE year.

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## INCLUSION CRITERIA

- Patients between 20 to 60 years of age of both sexes,
- Admitted patients of chronic fissure in ano.

## EXCLUSION CRITERIA

- Children and mentally handicapped patients
- 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.

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

## TECHNIQUE OF SUBCUTANEOUS FISSURECTOMY: (Fig -1)

Prior to the surgical treatment, per rectal examination is done and the extent of fissure is noted. Index finger is placed on the fissure and transverse incision is given with 11 no surgical blade just below the fissure.



**Fig. 1. Subcutaneous fissurectomy**

The incision is advanced till the extent of fissure. The fissure is elevated and released from the underlying circular sphincter fibers, so that the fissure edges are allowed to come together to

heal on its own. In fact the closure of fissure edges can be felt by the index finger as soon as the fissure is lifted from the sphincter fibers. The incision is left open by placing a gauze piece without suturing. The gauze piece falls off on second or third post op day. Sentinel pile is excised only if it is too large. In the postoperative period, patient is given laxatives. Sitz baths are not advised as a routine. .

## TECHNIQUE OF LATERAL INTERNAL SPHINCTEROTOMY: (Fig-2)

Lateral internal sphincterotomy is the most commonly performed operation in patients with chronic anal fissure needing surgical treatment (Saad and Omer, 1992).



**Fig. 2. Lateral internal sphincterotomy**

Postoperative treatment is dragging by way of Sitz bath and the percentage of complications viz. incontinence cannot be ignored (Peter and Lunniss, 2008). When the operation is performed under local anesthesia, the patient is placed in the left lateral position and sandbag is kept under the left hip. Anesthesia of the anal region is achieved by bilateral inferior haemorrhoidal nerve block. When general or spinal anesthesia is given, lithotomy position is preferred. A speculum is inserted into the anal canal. The internal anal sphincter is felt as a band around the blades of the speculum. Lower border is easily palpated by gently pressing a pair of forceps upwards the intersphincteric groove. In the closed method, No. 11 blade on a Bard Parker handle is introduced through the perianal skin at 3 o'clock position of the anus.

Then it is passed cephalad with the flat of the blade sandwiched between the internal anal sphincter and anal skin until it reaches the dentate line. The sharp edge of the blade is turned towards the internal sphincter and by incising on outwards and laterally for about 0.5 cm the internal sphincterotomy is performed. As the blade cuts through the internal sphincter, there is a characteristic gritty sensation felt which diminishes as soon as the incision is complete and there is sudden release of tension. At this point the scalpel is withdrawn as it has reached the outer surrounding ring of the external sphincter. Following the operation the internal sphincter is given a slight gentle instrumental dilatation. The slight ooze of blood from the small external wound can soon be arrested by external pressure of the swab in the anus. The external wound, which is less than a centimeter in length, is left unsutured to allow drainage some

of blood from the subcutaneous wound. In open method, the internal sphincter fibers are exposed and then incised. The fissure is untouched unless there is hypertrophied anal papilla or a huge sentinel pile which requires removal. They are excised using a sharp pointed scissors leaving the small superficial wound without damaging the subcutaneous external sphincter. At the completion of the sphincterotomy the anus is covered with a gauze and cotton pad which is secured by a 'T' bandage. If the operation is done under local anesthesia the wound is reinspected 30 minutes later for any evidence of bleeding. Postoperative anal dilatation is initially recommended to be performed twice per week.

**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.

**OBSERVATION AND RESULTS**

**• Comparison of Pain score in patients after 6 weeks follow up**

In the present study all the patients were followed up with VAS score for pain in the post-operative period it was observed that the mean VAS score for pain in lateral internal sphincterotomy was significantly higher than subcutaneous fissurectomy p<0.001.

**Table 1. Comparison of Pain score in patients after 6 weeks follow up**

Vas score for pain	Lateral Sphincterotomy		Internal Sphincterotomy		Subcutaneous Fissurectomy	
	Mean	SD	Mean	SD	Mean	SD
Pain	6.36	1.4	3.6	1.9		
t value	5.56		p		<0.001	

**• Comparison of Pain score in patients after 6 months follow up**

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

**Table 2. Comparison of Pain score in patients after 6 months follow up**

Vas score for pain	Lateral Sphincterotomy		Internal Sphincterotomy		Subcutaneous Fissurectomy	
	No.	%	No.	%	No.	%
Pain	0.4	0.64	0.24	0.52		
t value	0.963		p		0.34	

**• Comparison of complications in patients after 6 months follow up**

In the present study all the patients were followed up after 6 months for the occurrence of complications it was observed that there are no complications in subcutaneous fissurectomy group; but in lateral internal sphincterotomy group, 16% presented with complications-- one case infection, two cases presented with incontinence and one case presented with recurrence of symptoms. Occurrence of complication was significantly higher in lateral internal sphincterotomy group p=0.03.

**Table 3. Comparison of complications in patients after 6 months follow up**

complications	Lateral Internal Sphincterotomy		Subcutaneous Fissurectomy		
	No.	%	No.	%	
Present	4	16	0	0	
Absent	21	84	25	100	
Chi square	4.34		p		0.03

**• Comparison of Mean duration of Sitz bath in patients after surgery**

In the present study patients who underwent lateral internal sphincterotomy requires sitz bath for a mean duration of 2.4 weeks when compared to patients who underwent subcutaneous fissurectomy. The duration of sitz bath was significantly higher in patients who underwent lateral internal sphincterotomy p<0.001.

**Table 4. Comparison of Mean duration of Sitz bath in patients after surgery**

Sitz bath	Lateral Internal Sphincterotomy		Subcutaneous Fissurectomy		
	Mean	SD	Mean	SD	
Sitz bath	2.4	0.65	0.4	0.5	
t value	11.7		p		<0.001

**• Comparison of Mean duration of absenteeism in patients after surgery**

In the present study patients who underwent LIS 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. Comparison of Mean duration of absenteeism in patients after surgery**

Absenteeism	Lateral Internal Sphincterotomy		Subcutaneous Fissurectomy		
	Mean	SD	Mean	SD	
Absenteeism in weeks	3.08	1.2	0.76	0.66	
t value	8.0		P		<0.001

## DISCUSSION

In the present study, a comparative analysis of subcutaneous fissurectomy and lateral sphincterotomy has been done with regards to efficacy in terms of pain relief, complications, absenteeism in patients with chronic anal fissure. The current study included a total of 50 patients of chronic fissure in ano. The patients were randomly allocated into two groups of Lateral internal sphincterotomy (group A) and subcutaneous fissurectomy (group B) comprising 25 patients each. In the subcutaneous fissurectomy group, mean pain score was 2.64 by the end of 6<sup>th</sup> 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 fewer studies available in this aspect. According to Pelta *et al*, with subcutaneous fissurectomy, out of 118 patients, 100% patients achieved undisturbed wound healing rates, only 2% patients experienced flatus incontinence (Pelta *et al.*, 2007). In this series there is no incontinence in subcutaneous fissurectomy group; but transient incontinence for flatus was present in 2(4%) patients of the LIS group. Adriano Tocchhi *et al.* report no long-term complication after internal sphincterotomy and patient satisfaction was 96% (Adriano Tocchi *et al.*, 2004). In this series there is no long term complications and patient satisfaction is 100% According to A Aziz *et al*, with LIS, 140 out of 146 patients had completed healing of fissure by 3 months out of which 124 patients healed by 6 weeks, 12 patients healed by 7 weeks and 4 patients by 3 months. The overall healing rate was 97.5%. But 4.1% patients experienced transitory flatus incontinence (Aziz and Sheikh, 2009). In this series the there was no recurrence in the subcutaneous fissurectomy group; but 1(2%) recurrence occurred in the LIS group. In the present study patients who underwent subcutaneous fissurectomy requires sitz bath for a mean duration of 0.4 weeks when compared to patients who underwent LIS (2.4 weeks).

Patients who underwent subcutaneous fissurectomy showed much less duration of absenteeism 0.7 weeks; as compared to patients who underwent LIS 3.08 weeks. Comparison between subcutaneous fissurectomy and LIS 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) respectively; which is statistically significant. Hence Subcutaneous fissurectomy is a better surgical option for chronic fissure in ano than conventional LIS.

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