

## ORIGINAL ARTICLE

# Efficacy of Lateral Internal Sphincterotomy in Treating Chronic Anal Fissure

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## ABSTRACT

**Aim of the study:** To determine the effectiveness of lateral internal sphincterotomy in the treatment of chronic anal fissures resistant to pharmacological treatment (chemical sphincterotomy) in terms of recovery time, frequency of recurrences and complications.**Study design:** This was a prospective descriptive study.**Place and duration:** In the Department of Surgery, Lahore General Hospital, Lahore during the time period from January 2021 to August 2021.**Material and methods:** The study included 80 patients with chronic anal fissure, regardless of age and sex, after the history and clinical examination. All these patients were operated on under general or spinal anesthesia after obtaining consent and routine examinations. Lateral internal sphincterotomy was performed and patients with OPD were followed for 6 to 8 weeks to determine the benefit of the procedure.**Results:** The study included 57 men and 23 women (M: F ratio 2.2: 1) with a history of pain, bleeding, discharge with or without sentinel tag during defecation. The average age was 36 and ranged from 20 to 55. The fissure was found in the majority of patients at 6 O clock position (91.2% for men and 52.2% for women). The duration of symptoms was longer in women due to social problems. LIS was used in all patients. Patients were followed in OPD at weeks 1, 2, 4 and 6. Most of the patients fully recovered after 4 weeks. Occasional constipation occurred in 31 (54.4%) men and 11 (47.8%) women. The study found crater ulcers in all 80 patients. All patients had a history of painful bowel movements (100%), but 24 men (42.1%) and 12 women (52.2%) had bleeding and discharge. In 51 male patients (89.5%), the fissure was in the posterior and anterior midline in 3 patients (13.1%). Half of the patients had anterior fissure and the other half had posterior fissures. The sentinel tag was observed in 46 (80.7%) men and 17 (73.9%) women. 11 (19.3%) men and 6 (26.1%) women reported liquid stool incontinence, while 15 men (26.3%) and 9 women (16.9%) reported flatus incontinence. No relapse was observed in all patients after 4 months.**Conclusion:** As long as the patient is willing to accept the risk of transient fecal incontinence, we can accept the Gold Standard of Treatment (LIS) as first-line therapy for chronic anal fissure.**Keywords:** Lateral internal sphincterotomy, Chronic anal fissure, Fecal incontinence.

## INTRODUCTION

An anal fissure is a linear ulceration of the anoderm located distal to the dentate line, usually in the posterior midline<sup>1-2</sup>. Superficial fissures are very similar to paper cuts and usually heal spontaneously within a few weeks, but some anal fissures become deep and do not heal<sup>3</sup>. An anal fissure is considered chronic if it has been present for more than 6 weeks with keratinized margins, a sentinel marker and a hypertrophic anal papilla, and internal anal sphincter fibers are visible<sup>4-5</sup>. Chronic anal fissure is a common mild anal disease that causes significant morbidity. Anal fissures are common in young adults of both sexes<sup>6</sup>. In 80-90% of cases, the furrows are mainly located in the posterior midline, but the anterior ones are found in 25% of women and 10% of men. Multiple or different locations should raise the suspicion of inflammatory bowel disease, tuberculosis, leukemia, or HIV infection<sup>7</sup>. Anal fissures are extremely painful and appear with the flow of bright red blood during and after a bowel movement. The pain may be less intense during a bowel movement, but it increases after that. Perianal eczema is often associated with a chronic anal fissure<sup>8-9</sup>. The symptoms of the fissure cause significant morbidity and reduced quality of life in young otherwise

healthy individuals. Anal fissure is associated with increased anal tone<sup>10</sup>. This increased pressure inside the anus at rest may contribute to the ischemic condition of the anal sphincter muscles. Indeed, ano-dermal blood flow in the posterior midline has been shown to be reduced<sup>11</sup>. Poor blood flow inhibits anal fissure healing until the internal sphincter cycle is disrupted and blood flow is reduced by drugs or surgery. Conventional drug therapy includes the use of topical GTN, calcium channel blockers, botulinum toxin, alpha-adrenergic antagonists, beta-adrenergic agonists, and newer agents such as gonyautoxin<sup>12</sup>. Conventional surgical treatment includes anal finger dilation and lateral sphincterotomy. Rectal pressure at rest is reduced by lateral sphincterotomy, which is the most common operation for chronic anal fissure. This operation was described in 1951 and 1959. Among many treatments, it remains the first line of treatment<sup>10-12</sup>. In this study, the aim was to determine the speed of chronic anal fissure healing, mean fissure healing time, and relapse rates following lateral internal sphincterotomy.

## PATIENTS AND METHODS

This prospective descriptive study was conducted in the Department of Surgery, Lahore General Hospital, Lahore

during the time period from January 2021 to August 2021. The study enrolled 80 consecutive patients with chronic anal fissure (defined as anal fissure with symptoms greater than 6 weeks), treatment failure, and long history. All patients underwent a detailed interview and clinical examination. An anorectal examination revealed a sentinel tag and a chronic ulcer butt on hole crater. Patients with anal pain due to haemorrhoid thrombosis, acute fissure, anal abscess, anal canal and anorectal surgery were excluded from the study. All patients were operated in the lithotomy position under spinal or general anesthesia. Parka's anal retractor was inserted to stretch the anal canal and define the inter-sphincteric sulcus. A circumferential incision, 0.5 cm long, made with a number 11 blade at the 3 o'clock position. The plane formed between the rectal mucosa and the internal sphincter. Trim the internal sphincter to 1 cm with scissors or a diathermy. If a Sentinel tag is present, it is cut. Patients were discharged after removing the packs and sitz bathing. After surgery, they were followed for 4 months to relieve pain, heal fissures, complications and fissure recurrence.

## RESULTS

The study included 80 patients aged 20-55 years (mean 36 years) diagnosed with chronic anal fissure. All patients underwent lateral internal sphincterotomy (LIS) under spinal or general anesthesia. The study included 57 men and 23 women (M: F ratio 2.2: 1).

Table 1: Patient's demographics and age wise distribution

Sr. no	No. %age
Males	57(71.3%)
Females	23(28.7%)
Age Distribution	
18 - 27 years	28(35%)
28 - 37 years	36(45%)
38-47 years	8(10%)
48-56 years	8(10%)
Total	80(100%)

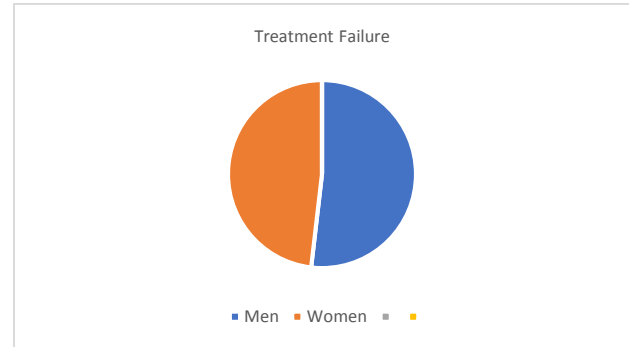
Table 2: Distribution of patients with respect to the Anal fissure characteristics and location

Anal Pain	50(62.5%)
Bleeding / Discharge	35(43.8%)
Chronic Constipation	25(31.3%)
Sentinel Tag	
Males	46(57.5%)
Females	17 (73.9%)
Location of Fissure	
Anterior to midline	51(89.5%)
Posterior to midline	3(13.1%)
Fissure Crater	80(100%)

All patients had a history of painful bowel movements (100%), but 24 men (42.1%) and 12 women (52.2%) had bleeding and discharge. The duration of symptoms ranged from 3 months to 1 year in men and from 1.5 months to 5 years in women. Occasional constipation occurred in 31 (54.4%) men and 11 (47.8%) women. The study found crater ulcers in all 80 patients. In 51 male patients (89.5%), the fissure was in the posterior and anterior midline in 3 patients (13.1%). Half of the patients had anterior fissure and the other half had posterior fissures. The sentinel

tag was observed in 46 (80.7%) men and 17 (73.9%) women.

40 (70.2%) men and 15 (65.2%) women reported treatment failure. Figure-1



After surgery, the patients were advised to continue OPD in weeks 1, 2, 4 and 6. Almost all patients achieved rapid relief from painful bowel movements and discharge after surgery. Fissure healing was also faster in patients with lateral internal sphincterotomy. Most of the patients recovered completely within 4 weeks (95% men and 90% women). By the sixth week, all men recovered completely. In two patients, the fissure did not heal in the sixth week. Faecal incontinence is the most important complication after LIS. The assessment of fecal incontinence in this group of patients was based on a detailed history and test results. 11 (19.3%) men and 6 (26.1%) women reported liquid stool incontinence, while 15 men (26.3%) and 9 women (16.9%) reported flatus incontinence. Urinary incontinence was transient in both sexes and lasted for 2 and a half weeks. None of the patients reported recurrence of symptoms during the 4-month follow-up.

## DISCUSSION

An anal fissure is a longitudinal ano-dermal defect in the anal canal mucosa, usually extending from the dentate line to the edge of the anus, and was recognized as a clinical unit in 1934. It is a challenge to manage if not well diagnosed and treated in time<sup>13</sup>. Sharp furrows usually heal with conservative treatment. Fissures longer than 6 weeks with chronic features (sentinel tag, anal papillary hyperplasia, and fibrous polyps underlying anal sphincter exposure) are unlikely to be treated conservatively<sup>14</sup>. Anal fissures affect all age groups, especially young adults. The mean age in our study was 38 years. As can be seen in our study (71.3% of patients were male) and in some other studies, men are more likely to be affected than women. Although the exact aetiology of the anal fissure is unknown, trauma due to hard faecal matter and hypertonicity of the internal sphincter are believed to be the initial factors<sup>14-15</sup>. Despite these findings, only 31.3% of patients with chronic anal fissure suffer from constipation. However, in our study, the relationship between constipation and the fissure was greater at 54.5%. The most common location for a primary anal fissure is the posterior anal midline. Half of the patients with anterior fissures have a history going back to birth. Acrochordon was detected in 82.69% of men and 81.81% of women, which has been observed in various

studies as a common occurrence in fissures<sup>16-17</sup>. A variety of treatment options are available for chronic anal fissures, ranging from simple dietary adjustments, laxatives, topical application of GTN, Ca channel blockers, to more invasive surgical interventions such as lateral internal sphincterotomy<sup>18-19</sup>. Various treatments have been developed to reduce the anal canal resting pressure and eventually heal the fissure. The goal of treatment is to temporarily reduce the pressure in the anal canal (reversible sphincterotomy) by reducing muscle tone. LIS is the gold standard in the surgical treatment of an anal fissure<sup>20</sup>. The main problem with sphincterotomy is the frequency of anal closure, which in some studies is reported as 30%. However, long-term urinary incontinence (more than 2 months) ranges from 3.3% to 7%<sup>21-22</sup>. In our study, we observed transient urinary incontinence for two to two and a half weeks. In addition, LIS consistently provides better rates of recovery, lower rates of relapse, and greater patient satisfaction with drug therapies. In some studies, the cure rate exceeds 90%. In this study, the four-week cure rate was almost 95% for men and 90% for women. Compared to surgical sphincterotomy, chemical sphincterotomy appears to be less effective in treating chronic anal fissure due to side effects and the frequency of repeated doses<sup>23</sup>.

## CONCLUSIONS

Lateral internal sphincterotomy is the most frequently used surgical technique in the treatment of an anal fissure, it is highly effective and allows to heal the fissure in 90-100% of patients. It is also the preferred method of treatment in cases where drug treatment has failed or cracks frequently occur. LIS is associated with acceptable transient complications.

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