

# Tailored Lateral Sphincterectomy versus Conventional Lateral Sphincterectomy in the Management of Chronic Anal Fissures – A Comparative Study

B. Shailendra<sup>1</sup>, Bal Singh<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of General Surgery, MNR Medical College and Hospital, Sangareddy, Telangana

<sup>2</sup>Assistant Professor, Department of General Surgery, MNR Medical College and Hospital, Sangareddy, Telangana,

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Corresponding author: Dr Bal Singh

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## Abstract

**Background:** Chronic fissure in ano is a distal anal mucosal tear that require surgical correction. Lateral internal sphincterectomy is considered as gold standard technique with high recovery rate and have transient incontinence and recurrence drawbacks. The present study was designed to assess the efficacy of tailored lateral sphincterectomy and conventional lateral sphincterectomy in the management of chronic anal fissures.

**Material and Methods:** Fifty-two clinically diagnosed cases of chronic fissure in ano above 21 years of age were recruited. Cases were randomly divided into two groups. Group 1 treated with tailored sphincterectomy and group 2 with conventional lateral internal sphincterectomy. Cases were followed for two weeks and assessed the bleeding per-rectum, pain score, fecal incontinence, and flatus incontinence.

**Results:** The mean pain score in tailored group was 5.3 on 1<sup>st</sup> day, 3.0 on 3<sup>rd</sup> day and 1.3 on 5<sup>th</sup> day, whereas in group 2, pain scores were 5.4, 3.1, 1.5 on 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> day respectively. Fecal incontinence (5 in conventional & none in tailored), flatus incontinence (1 in conventional & none in tailored), fecal soiling (1 in tailored & 2 in conventional), and recurrence (1 in tailored and 5 in conventional) was observed and the difference of fecal incontinence ( $p < 0.001$ ), flatus incontinence ( $p = 0.0204$ ) and recurrence ( $p = 0.0368$ ) was statistically significant.

**Conclusion:** Tailored lateral sphincterectomy is an effective treatment choice for the chronic fissure in ano than conventional lateral sphincterectomy in terms of low fecal and flatus incontinence and recurrence rate.

**Keywords:** Tailored lateral sphincterectomy, Recurrence, Pain, Chronic fissure in ano.

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## Introduction

Fissure in ano is an anodermal tear that extends between dentate line and anal verge [1]. It is predominant in people between age group 21-39 years and accounting 10% of visits to the colorectal wings [2]. The factors like constipation, infection, diarrhea, anodermal ischaemia, chronic

constipation and hypertonicity of sphincter ani internus and externus musculature are responsible for disease development [3]. It is characterized by bleeding and pain during defecation that persists for quite long which in turn ruins the quality of life of an individual [4]. There may be

mismatch in the prevalence of anorectal disorders possibly much higher than what is seen in general practice. Majority cases hesitate to seek consultation which results in devastating the condition [5].

Healthy dietary habits, high fluid intake, and conventional drugs such as local muscular relaxants including nitrates, calcium channel blockers, alpha and beta-adrenoreceptor antagonists are available management options for chronic anal fissures [6,7]. In cases who do not respond to medical therapy surgical correction is necessary [8]. Lateral internal sphincterectomy is considered as gold standard surgical option for chronic fissure in ano that do not respond to conservative surgical approach [9].

Studies reported that lateral internal sphincterectomy has healing rate of 92-100%; moreover, various disturbances between 0-30% for flatus, 0-20% for liquid incontinence and 0-5% for solid incontinence have been reported [10]. Studies on lateral internal sphincterectomy have reported 47.6% of postoperative morbidity, and anal incontinence [11]. Modified surgical techniques including partial and tailored lateral internal sphincterectomy can decrease the postoperative complications, recurrence and incontinence [12]. With above reference, the present study was designed to assess the efficacy of tailored lateral sphincterectomy and conventional lateral sphincterectomy in the management of chronic anal fissures.

## Results

**Table 1: Age and gender wise distribution of study participants (n=52)**

Demographic data	Group 1 (n=26)		Group 2 (n=26)	
	Frequency	Percentage	Frequency	Percentage
<b>Age (In years)</b>				
21-30	03	11.54%	05	19.23%
31-40	11	42.30%	09	34.62%
41-50	07	26.92%	08	30.77%
Above 50	05	19.23%	04	15.38%
<b>Gender</b>				
Male	19	73.08%	22	84.62%

## Materials and Methods

The present prospective study was conducted in the Department of General Surgery at MNR Medical College and Hospital, Sangareddy during August 2021 to August 2022. A total of 52 clinically diagnosed and confirmed cases of chronic fissure in ano attending Outpatient department of General surgery subjected to surgery above 21 years of age were included. Cases with fistula in ano, perineal abscess, acute fissure in ano and other systemic complications and cases not willing to participate were excluded. Written informed consent was obtained from each participant and study protocol was approved by institutional ethics committee (No.MMCH/IEC/2021/06/13).

Study participants were randomly divided into two groups. Group 1 cases were undergone tailored sphincterectomy procedure and group 2 cases were undergone conventional lateral internal sphincterectomy. After the surgical procedure, cases were followed for two weeks and assessed the bleeding per-rectum, pain score, fecal incontinence, and flatus incontinence. The postoperative pain was assessed by visual analogue score.

The outcome values were analyzed by using SPSS version 23.0. Descriptive statistics was used to represent categorical variables in the form of frequency and percentage. Association analysis was conducted by using chi-square test and paired t test.  $P < 0.05$  was considered as statistically significant result.

Female	07	26.92%	04	15.38%
<b>Symptoms</b>				
Constipation	21	80.76%	20	76.92%
Bleeding	15	57.69%	18	69.23%
Pain	25	96.15%	26	100%
Discharge	02	7.69%	04	15.38%

**Table 2: Details of postoperative symptoms and complications**

	Group 1 (n=26)	Group 2 (n=26)	p-value
<b>Fecal incontinence</b>			
Yes	-	05 (19.23%)	0.001
No	26 (100%)	21 (80.76%)	
<b>Flatus incontinence</b>			
Yes	-	01 (3.84%)	0.0204
No	26 (100%)	25 (96.15%)	
<b>Fecal soiling</b>			
Yes	01 (3.84%)	02 (7.69%)	0.0587
No	25 (96.15%)	24 (92.30%)	
<b>Recurrence</b>			
Present	01 (3.84%)	05 (19.23%)	0.0368
Absent	25 (96.15%)	21 (80.76%)	
<b>Constipation</b>			
Present	02 (7.69%)	04 (15.38%)	0.0394
Absent	24 (92.30%)	22 (84.62%)	
<b>Pruritus ani</b>			
Present	-	01 (3.84%)	0.835
Absent	26 (100%)	25 (96.15%)	

**Table 3: Assessment of pain score by visual analogue score**

Pain score	Group 1	Group 2	p-value
	Mean±SD	Mean±SD	
<b>Pain score</b>			
First day	5.3±0.36	5.4±0.22	0.0435
Third day	3.0±0.72	3.1±0.50	0.631
Fifth day	1.3±0.85	1.5±0.69	1.284
Duration of hospital stay	3.2±1.08	4.1±2.41	0.001

## Discussion

Chronic anal fissure commonly encountered painful anorectal condition in the surgical practice. Several medical therapies and surgical options are available to manage the fissures. Tailored lateral sphincterectomy is most invasive and effective method with minimal rate of inconstence and recurrence. In this study, majority participants in both study groups were between age group 31-40 years (42.30% in group 1 & 34.62% in group 2) and 41-50 years (26.92% in group 1 &

30.7% in group 2). Male participants (73.08% in group 1 & 84.62% in group 2) were more common than female participants (26.92% in group 1 & 15.38% in group 2) (Table 1).

A study by Nikhat AF *et al.*, reported pain during defecation was common symptom (100%), followed by bleeding per rectum (82%), constipation (72%) and itching in cases under tailored lateral sphincterectomy [13]. A study by Lee KH *et al.*, reported

pain during defecation (99.6%), bleeding (56.4%) and prolapse (16.5%) was commonly associated in cases with chronic anal fissure [14]. Lattoo M *et al.*, found pain during defecation (100%), bleeding per rectum (93.05%), constipation (80.05%), itching (32%) and discharge (11%) are common symptoms associated with chronic fissure in ano [15]. Magdy A *et al.*, reported pain during defecation, bleeding and constipation common associated symptoms in chronic fissure in ano [16].

The results of present study were similar to above findings where high grade pain during defecation (96.15% in tailored & 100% in conventional) was a commonly associated symptom followed by constipation (80.76% in tailored & 76.92% in conventional) and bleeding (57.69% in tailored & 69.23% in conventional) in both groups (Table 1).

A study by Nikhat AF *et al.*, on efficacy of tailored lateral sphincterectomy for chronic fissure in ano reported flatus incontinence in 2% of study cases [13]. Lattoo M *et al.*, reported that 5.5% of cases showed flatus incontinence, 15.27% showed pruritus ani and 18.05% showed minor bleeding in tailored lateral sphincterectomy [15]. Magdy A *et al.*, reported greatest rate of healing time and low incontinence rate in tailored group than conventional lateral sphincterectomy group [16]. A study by Bara B *et al.*, noticed flatus incontinence in seven cases, urine retention in 4 cases, solid incontinence in one case and recurrence of condition after six months was seen in 2 cases [17].

However, in present study, and fecal incontinence (1 in tailored & 5 in conventional), flatus incontinence (1 in conventional & none in tailored) and fecal soiling (1 in tailored & 2 in conventional), was observed and the difference of fecal incontinence ( $p < 0.001$ ), and flatus incontinence ( $p = 0.0204$ ) was statistically significant between the study groups. Recurrence of symptoms was seen in one case of tailored group and 5 cases of conventional group and this difference was

statistically significant ( $p = 0.0368$ ). Constipation issues was seen in two cases of tailored group and in four cases of conventional group and the difference was significant ( $p = 0.0394$ ). Pruritus ani was observed in one case of convention group and none on tailored group (Table 2).

The mean pain score in group 1 was 5.3 on 1<sup>st</sup> day, 3.0 on 3<sup>rd</sup> day and 1.3 on 5<sup>th</sup> day, whereas in group 2, pain scores was 5.4, 3.1, 1.5 on 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> day respectively. The mean difference between two study group was significant on 1<sup>st</sup> day ( $p = 0.0435$ ). The duration of hospital stay was less in tailored group (3.2 days) than conventional group (4.1 days) ( $p < 0.001$ ). A study by Ashoka CD *et al.*, reported mean pain score 5.6, 2.8, 1.2 in lateral sphincterectomy alone group and 5.6, 2.7 and 1.2 in tailored lateral sphincterectomy group on day 1, 3 and 5 in respectively. The mean difference between study groups was statistically not significant ( $p > 0.05$ ) [18].

A study by Nikhat AF *et al.*, stated that lateral internal sphincterectomy was an effective treatment choice for chronic fissure in ano than gold standard lateral internal sphincterectomy [13]. A study by Bara B *et al.*, reported that lateral internal sphincterectomy was a superior treatment choice for chronic fissure in ano than fissurectomy [17]. A study by Lee KH *et al.*, stated that lateral internal sphincterectomy is effective treatment method with minimal postoperative complications and recurrence [14].

Lattoo M *et al.*, reported no major faecal incontinence and recurrence was in tailored lateral sphincterectomy in chronic fissure in ano [15]. Pandit RK *et al.*, concluded that lateral internal sphincterectomy was an efficient with regard to incontinence and recurrence of condition [19].

The findings of present study were consistent with above findings. In terms of limitations, this study included limited number of cases with limited follow up period. Further long term follow up studies are required with higher sample number.

## Conclusion

Lateral sphincterectomy is gold standard surgical treatment choice of chronic anal fissures. The results of present study showed that the cases under tailored lateral sphincterectomy reported significantly less fecal incontinence, flatus incontinence, recurrence rate, and constipation than cases under conventional lateral sphincterectomy. Tailored lateral sphincterectomy is an effective treatment choice for the chronic fissure in ano than conventional lateral sphincterectomy.

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