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"A Comparitive Study of Outcome of Bilateral Vs Unilateral Lateral Internal Sphincterotomy for Chronic Anal Fissures"

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Abstract
Aims and objectives: *To compare the outcome of bilateral vs unilateral lateral internal sphincterotomy for chronic anal fissures.*
Materials, methods and observation: *A comparative study of outcome of bilateral vs unilateral lateral internal sphincterotomy in chronic anal fissures , conducted in the Department of General surgery at Govt Rajaji Hospital Madurai, for the period of 6 months a total of 60 patients who underwent sphincterotomies for chronic anal fissures were included in the comparative study and randomized in to two groups, of 30 patients in group A(bilateral lateral internal sphincterotomy) and 30 patients in Group B (unilateral lateral internal sphincterotomy) were considered for the study.*
Conclusion: *. Although bilateral LIS takes some extra time for the procedure, it is significantly better procedure than unilateral LIS in treatment of chronic anal fissures in terms of early pain relief, reduction of resting anal pressure and complete healing rate in 4 weeks.*
KEYWORDS:

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I. Introduction

Anal fissure is a painful linear mucosal tear situated in distal anal canal extending from just below dentate line till the anal verge. Anal fissures affect all age groups, with equal incidence across both thesexes. An anal fissure characteristically presents with pain, bright red bleeding, mucous discharge andconstipation. Injury to anal mucosa by hard stool appears to be initiating event in the development of anal fissure. Fissures are classified into an acute and a chronic form based on their pathogenesis.

Chronic anal fissures (CAF) are defined by both or either chronology and morphology. The criteriaare duration of symptoms for longer than 8 weeks, the presence of a sentinel pile, a skin tag or an ulcer with exposed internal sphincter fibers.There is evidence that anal fissure is associated with spasm of internal anal sphincter and reduction in blood flow that leads to delayed or non-healing ofthe ulcer.

Therefore the aim of treatment strategies is to reduce the sphincter tone which in turn increases local vascularity, with either medical agents, such as glyceryl trinitrate, calcium channel blockers or botulinum toxin, or surgical interventions, like lateral internal sphincterotomy . Internal sphincter is formed by circular muscle fibers and dividing it at one point of the circle opens up, relaxes and decreases the tone of the internal sphincter, which is the basis for doing unilateral LIS in chronic analfissures. Dividing the internal sphincter at two places may actually relax the sphincter more effectively and help in faster healing and recovery. However, the risk of incontinence may increase. There are very few studies available which have evaluated the role of bilateral internal sphincterotomy / bilateral botulinum toxin injections for treatment in CAF. This study aims to compare and evaluate the outcome of bilateral versus unilateral lateral internal sphincterotomy in patients with chronic anal fissure.

II. Aims And Objectives

IIA: Primary objective:
This study aims to study the following in bilateral and unilateral sphincterotomies forchronic anal fissures

IIB: Secondary objectives:

1. To know the degree of post operative pain among the sample respondents of two differentgroups.
2. To study the difference in the period required to get discharged after the operation.
3. To identify the difference between the two surgical techniques (unilateral and bilateral) inwound healing.
4. To evaluate the possibility of recurrence of Fissures after surgery.

III. Materials And Methods

The study was conducted at Govermment Rajaji Hospital Madurai.
All patients were divided into two equal groups (Group A and Group B) of 30 each by computer generated randomization. Demographic data including age, sex, symptoms with their duration andposition of fissures were noted in both groups.

IIIA: ELIGIBILITY CRITERIA:

A.INCLUSION CRITERIA:
• Age >18 yrs
• Patients consented to the study according to designated proforma
• Both sexes
• Patients with anal fissure for more than 3 months
• Unresponsive to medical treatment
• Recurrence of symptoms

B.EXCLUSION CRITERIA:
• Age <18yrs
• Immunocompromised patients
• Pregnancy
• Patients with anorectal malignancies
• Previous anorectal surgeries
• Patient not willing for the study.

IV. Observation And Results

In the comparative study of outcome of bilateral vs unilateral lateral internal sphincterotomy in chronic anal fissures , conducted in the Department of General surgery at Govt Rajaji Hospital Madurai, for the period of 6 months a total of 60 patients who underwent sphincterotomies for chronic anal fissures were included in the comparative study and randomized in to two groups, of 30 patients in group A(bilateral lateral internal sphincterotomy) and 30 patients in Group B (unilateral lateral internal sphincterotomy) were considered for the study.

METHOD OF COLLECTION OF DATA

A total of 60 patients undergoing midline laparotomy after taking written and informed consent and were divided equally in to 30 cases each in the study group(Bilateral lateral internal sphincterotomy)and control group (Unilateral lateral internal sphincterotomy) and were followed up in the post operative period.

SOURCE OF DATA:

All patients satisfying inclusion criteria admitted in General surgery Department,GRH for a period of 6 months.

ANALYSIS

Data analysis was done with the help of computer using SPSS 18 software. Using this software range, frequencies, percentages, means, standard deviations, chi square and 'p' values were calculated by One way ANOVA and Chi-square test was used to test the significance of difference between quantitative variables.

STATISTICAL ANALYSIS:

Table 1: Mean age distribution

	Groups	N	Minimum	Maximum	Mean	SD	P Value
AGE	Study group	30	20	69	42.83	12.83	.523
	Control group	30	19	75	44.83	16.83	

Table 1 reveals the mean age distribution of the sample respondents of two different groups. Minimum age of the study group is 20 years and the maximum age is 69 years, Hence the mean age of the study group is 42.83 years. The range of age of the sample respondents lies between 19 years and 75 years.Hence the mean age of the controlled group is 44.83 years.

Table 2: Gender Distribution between two groups

Groups	Gender		P value
	Male	Female	
Study group	27(90.0%)	3(10.0%)	1.000
Control group	27(90.0%)	3(10.0%)	

Table 2 illustrates the gender of the sample respondents. Out of the 30 respondents in each group 90 percent of the respondents are males and 10 percent of the respondents are females.

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Table 3: Association of postoperative pain with different groups

Groups	Post operative pain					P value
	No Pain	Mild Pain	Moderate Pain	Severe Pain	Very Severe	
Study group	18(60.0%)	11(36.7%)	1(3.3%)	0(0.0%)	0(0.0%)	.000*
Control group	0(0.0%)	2(6.7%)	14(46.7%)	13(43.3%)	1(3.3%)	

Ho: The respondents of the controlled group experience no or mild postoperative pain (Fissure) than the respondents of the study group.
H1: The respondents of the controlled group experience severe postoperative pain (Fissure) than the respondents of the study group.

Table 3 elucidates the degree of postoperative pain that the respondents experience. The degree of pain is differentiated into five levels such as no pain, mild pain, moderate pain, severe pain and very severe pain. 60 percent of the respondents belong to the study group have reveled that they had no post operative pain, 36.7 percentage have revealed that they had mild pain. Majority of the respondents of the study group have no postoperative pain. Instead 46.7 percent of the respondents of the controlled group have revealed that they had

moderate pain and 43.3 percent have stated that they had severe pain. The association between the groups regarding the postoperative pain is highly significant as p value is .000.Hence the alternate hypothesis is accepted.

Table 4: Association of Incontinence with different groups

Groups	Incontinence		P value
	Yes	No	
Study group	1(3.3%)	29(96.7%)	.313
Control group	0(0.0%)	30(100.0%)	

Ho: There is occurance of Incontinence in Bilateral Surgery.
H1:There is a difference in occurance of incontinence between the two groups selected for the study.

Table 4 explains the response of the respondents regarding incontinence. The respodents of the controlled group have stated that they had no incontinence. And majority of the respondents (96.7%) in the study group have stated that they had no incontinence. Eventhough majority of the resondents in study group did not report incontinence, the result is not significant to support the alternate hypothesis.

Table 5: Association of Wound healing with different groups

Groups	Wound healing		P value
	Healed	Un Healed	
Study group	30(100.0%)	0(0.0%)	.313
Control group	29(96.7%)	1(3.3%)	

Ho: Wound healing is comparatively better among the controlled group.
H1 :Wound healing is comparatively better among the study group.

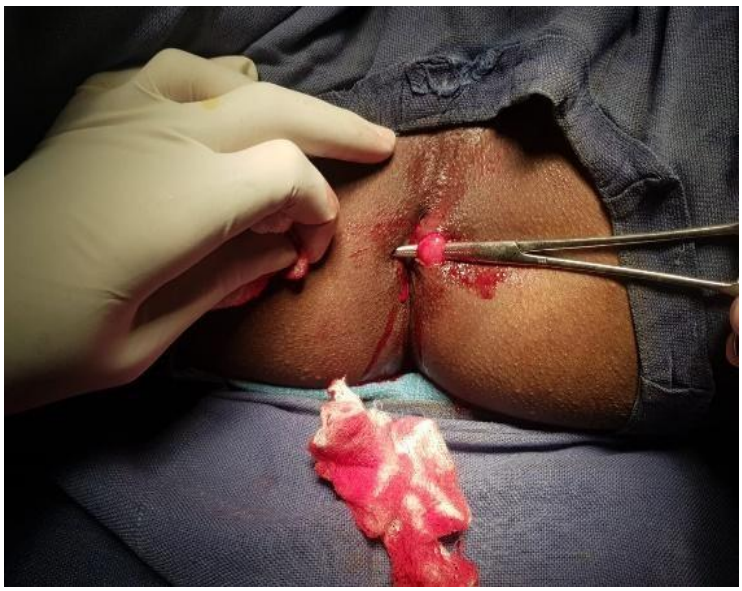
Wound healing is assessed among the two different groups. The hypothesis framed to identify the betterment of wound healing among the respomdents of the two groups. Table 5 states that wound healing is more or less the same between the two groups.

Table 6: Association of Post operative day of discharge with different groups

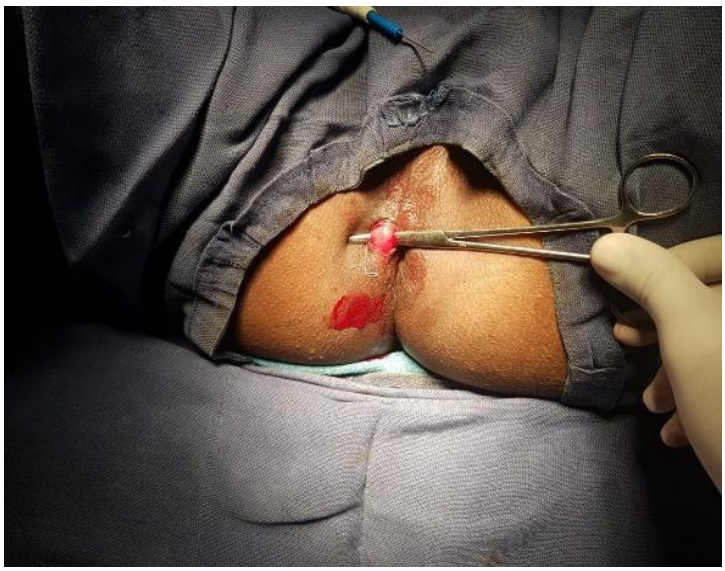
Groups	Post operative day of discharge			P value
	Day of surgery	0 to 2 days	2 to 4 days	
Study group	24(80.0%)	6(20.0%)	0(0.0%)	.000*
Control group	4(13.3%)	14(46.7%)	12(40.0%)	

H0 = Unilateral surgery enables early discharge
H1= Bilateral surgery enables early discharge

It is evident from the data in Table 6 that the bilateral lateral internal sphincterotomy surgery enables early discharge.



Hooking out internal sphincter muscle fibre from 9'O clock position.



Hooking out internal sphincter muscle fibre from 3'O position.

V. Discussion

There are many modalities for the treatment of chronic anal fissures, but so far surgical Lateral internal sphincterotomy remains the gold standard.However, there is always inherent risk of incontinence associated with these surgical procedures. Our study aims to compare surgical outcome of bilateral to unilateral LIS in patients with chronic anal fissures.

Mean operative time for bilateral LIS, as expected, was longer than that for unilateral LIS and but this did not have any major impact on perioperative outcome.

Verbal Pain Intensity Score (VPIS) is used to assess the intensity of pain post-operatively. In the present study, the mean VPIS was higher in unilateral LIS group at 24 hours and at the end of 1st week which was statistically significant.However, at the end of 2nd week no significant difference inpain scores was found between two groups and all patients were pain free at the end of 3rd week.

Bilateral LIS releases at least two coalesced arc of the internal bundles and possibly divide and relax the sphincter more effectively than in unilateral cases, leading to early significant pain relief.

After internal sphincterotomy, most of the chronic anal fissure take 4-8 weeks for complete healing. At the end of 4th week 69% and 60% of the patients in group A and group B respectively had completely healed fissures (p-value <0.05). No statistical difference in complete healing was noticed in two groups on further follow up.

In study group, as the sphincterotomy was done bilaterally and only up to level of fissure apex, this

resulted in early and better fissure healing rates with no recurrence, probably secondary to better decrease in anal pressures.

As the extent of sphincterotomies were selective and not up to dentate line, there were no cases of permanent incontinence in either groups.Bilateral Lateral Internal Sphincterotomy is associated with better early reduction of anal pressures, higher earlier healing rate, improvement in quality of life and better patient satisfaction than for Unilateral Lateral Internal Sphincterotomy

VI. Conclusion

Although bilateral LIS takes some extra time for the procedure, it is significantly better procedure than unilateral LIS in treatment of chronic anal fissures in terms of early pain relief, reduction of resting anal pressure and complete healing rate in 4 weeks. The risks of incontinence and recurrenceof fissure are negligible with superior patients' satisfaction.

Hence study conducted in 160 patients who underwent sphincterotomy 30 patients who underwent bilateral lateral internal sphincterotomy were followed up in the early post operative period and regular follow up. All patients have reported earlier pain relief and better wound healing with no lossin continence .Therefore, bilateral lateral internal sphincterotomy overweighs the disadvantages of unilateral lateral internal sphincterotomy. Hence the technique should be considered.

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