# A Comparitive Study between 2% Diltiazem Application Versus Lateral Sphincterotomy in Fissure in ANO

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## ABSTRACT

**Introduction:** Fissure in Ano is common ailment seen in general population. Various medical treatments are now evolving for this painful condition along with surgical techniques like Lateral sphincterotomy. Increased tone of anal sphincter being the factor for which pharmacological modalities are used. In this study Comparison between 2% Diltiazem application with Lateral Sphincterotomy was done.

**Material and methods**: In this prospective study 80 patients with fissure in a Ano are divided in two groups, Group 1 are advised to apply 2% Diltiazem cream and group 2 undergone Lateral sphincterotomy under anesthesia. Both groups are observed for pain, healing time, bleeding and complications for 6 weeks in government general hospital / Rangaraya medical college Kakinada during period September 2014 to august 2016.

**Results**: fissures were completely healed in 37 patients out of 40 in group 1. Only 3 patients had fissures even after 6 weeks.

**Conclusion**: 2% Diltizem application can be preferred as first line of treatment for acute anal fissures, Lateral Sphincterotomy being reserved for refractory or chronic fissure cases.


**Keywords:** Fissure In Ano, Diltiazem, Lateral Spinchterotomy

## INTRODUCTION

Anal fissures are one of the common causes of severe anal pain. Pain in acute anal fissure starts immediate to defecation and persists for few hours. Anal Fissure is a longitudinal split in the anoderm of the anal canal which extends from the anal verge proximally, but not beyond, the dentate line.[1]

Etiologically they are classified as primary /idiopathic or secondary. Secondary fissures are due to some other pathology such as Crohn's disease, anal tuberculosis. Patients present with pain during defecation and occasionally passage of bright red blood per anus. The precise etiology is unknown. Fissure is mostly due to trauma from the passing of a large hard stool. constipation is frequently seen in most of the patients of anal fissure, but it is also seen after acute diarrhea, and post child birth.[2] Normal resting anal pressure is 80-160 mm Hg.[3]Acute fissures are associated with involuntary spasm of the internal sphincter high restinganal pressure. Reduction of anal sphincter pressure results in improved blood supply and healing of fissure. Skin at the lower part of the fissure acts as a marker of an chronic anal fissure – 'sentinel pile'.[8] lateral internal sphincterotomy, reduces the anal tone effectively and heal most fissures[4,5], but also result in impaired anal continence. This disadvantage has led into an alternative non-surgical method of decreasingsphinctertone[6], andpharmacological agents such as nitrates, calcium channel blockers[7] have shown promising results in lowering resting anal pressure and heal fissures without any anal incontinence. Topical 2% diltiazem reduces resting pressure[9,10] by approximately 28% and effect lasts for 3–5 h after application.[11-13] Fissures are common in both sexes.[14] anterior fissures more common in females[15]

Study was done with the aim to record the management follow up and outcome in patients in comparison between lateral sphincterotomy and diltiazem application in anal fissures at government general hospital, Kakinada.

## MATERIAL AND METHODS

This prospective study was undertaken at Government General Hospital affiliated to Rangaraya Medical College, Kakinada from September 2014 to August 2016 after obtaining ethical clearance from the ethical committee of Rangaraya Medical College. 80 patients with Fissure in Ano were selected and grouped in to 2 groups, informed written consent from all the subjects. Groups 1 were treated with topical 2% Diltiazem and group 2 were treated with Lateral Sphincterotomy. Both groups were given Cremaffin syrups and advised to have fibre rich diet and sitz baths two times a day.

**Exclusion criteria:** Children, mentally challenged patients, fissures associated with malignancies, fissures secondary to specific diseases like Tuberculosis, Crohn's disease etc., fissures with hemorrhoids and fistula and pregnant women were excluded from the study. Patients were observed weekly for 6 weeks. Criteria for comparison included were pain, healing and complications.

## STATISTICAL ANALYSIS

Statistical analysis was done using Microsoft Excel software and SPSS computer program and pearson chi-square test. P values of <0.05 are considered statistically significant.

## RESULTS

There were 15 males and 25 females with a male to female ratio of 1:1.6 in group 1 where as in group 2 males are 17 and females are 23 giving the male: female ratio 1:1.35.The mean age of occurrence of fissure is 34.92 years, in males was 36.93 years and in females 33.8 years with a standard deviation of 11.8 and 8.9.Painful defecation was the most common symptom accounting for 86.25%. Followed by constipation and bright red bleeding per anum in 68.75% and 42.5% of the patients respectively. The occurrence of posterior anal fissure was noted

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to be 88.75%anterior anal fissure was noted in 2.5% of male and 8.75% of female patients. Sentinel pile was present in 37.5% of the patients. In Group 1, fissures in 37 patients (92.5%) healed completely between 4-8weeks. In Group 2, 40 patients (100%) had complete resolution at the end of 4 weeks. In Group 1, 14 (35%) patients were pain-free at the end of 2 weeks. An additional of 19 (47.5%) patients were free of pain by 4 weeks and 4 (10%) more patients by 6 weeks. 3 patients (7.5%) were not relieved of pain even at the end of 6 weeks. In Group 2, 24 patients were relieved of pain by 2 weeks and all the patients were relieved of pain by 6weeks time.

In group 1, 3 (7.5%) patients experienced mild headache and local irritation was present in 5 (12.5%) In group 2, 14 (35%) patients experienced post-operative pain and transient incontinence for flatus was present in 2 (5%) patient, Bleeding (n=3, 7.5%). Recurrence was seen in 3 (7.5%) patient in the Diltiazem group and none in the LIS group.

Diltiazem gel therapy versus lateral internal sphincterotomy, gel therapy showed a significant difference in pain relief (P<0.025) and also in long run fissure healing (P= 0.020) which are statistically significant.

## DISCUSSION

The rationale of treating this condition lies in reducing the internal anal sphincter tone, relieving the spasm and thereby improving the circulation. Of the surgical modalities available, the gold standard procedure is lateral internal sphincterotomy (LIS) wherein there is partial division of the internal anal sphincter away from the fissure site. In the present study, a comparative analysis of topical application of 2% diltiazem gel and LIS was done with regards to efficacy, adverse effects and complications in patients with anal fissure.

In the present study, the age group most affected was 31-40 years (42.5%). According to J.C. Goligher[14] the disease is usually encountered in middle aged adults. In Udwadia T. Eseries maximum incidence was seen in 31-40 years age group. There was female preponderance (60%) compared to males (40%) in this study.

In the diltiazem group, 14 (35%) patients were pain-free at the end of 2 weeks, 19 (47.5%) by 4 weeks and 4 (10%) were pain free by 6 weeks. 3 patients (7.5%) were not relieved of pain even at the end of 6 weeks. Fissure was completely healed in 37 (92.5%) out of 40 patients by 6 weeks. In this study, out of the 40 patients that were followed up in the Diltiazem group, 3 (7.5%) patients experienced mild headache and local irritation was present in 5 (12.5%) patients. Of group 2, 14 (35%) patients experienced post-operative pain and transient incontinence for flatus was present in 2 (5%) patient. Recurrence was seen in 3 (7.5%) patient in the Diltiazem group and none in the LIS group. Study from Boulos[15] which says posterior fissure (85.7%) is more common than anterior fissure (14.2%).Study conducted by J. S. Knight[16] et al (2001) reported a healing rate of 75% after 8-12 weeks treatment with Diltiazem gel. U. K. Srivastava[17] (2007) reported a healing rate of 80% with Diltiazem gel in 12 weeks.

Comparison between Diltiazem gel therapy and internal sphincterotomy showed a difference in pain relief (P<0.025) and fissure healing (P= 0.020) which was statistically significant. The follow up period available after successful treatment with Diltiazem gel was short and therefore no long term conclusions could be drawn. Long term follow up is needed to assess the risk of recurrence after initial healing with Diltiazem gel therapy.

## CONCLUSION

Topical 2% diltiazem has minimal complications, self application, opd procedure and rapid pain relief over lateral internal sphincterotomy in acute fissures but chronic fissure in ano is treated by surgical method which needs admission.

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