A Comparative Study Between 0.2% Glyceryltrinitrate 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 forthis 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 studyComparison between 0.2% GlycerylTrinitrate application with Lateral Sphincterotomy was done.

Material and methods: In this prospective study 60 patients with fissure in Ano are divided in two groups, Group 1 are advised to apply 0.2% GlycerylTrinitrate cream and group 2 undergone Lateralsphincterotomy under anaesthesia. Both groups are observed for pain, healing time, bleeding and complications for 6 weeks in government general hospital / Rangaraya medical college Kakinada during period July 2018 to July 2019.

Results: fissures were completely healed in 27 patients out of 30 in group 1. Only 3 patients had fissures even after 6 weeks.

Conclusion: 0.2% GlycerylTrinitrate 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, 0.2% GlycerylTrinitrate, Lateral Sphincterotomy

Date of Submission: 06-01-2020
Date of Acceptance: 21-01-2020

I. 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. Etiologically they are classified as primary/idiopathic or secondary. Secondary fissures are due to some other pathologies 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 childbirth. Normal resting anal pressure is 80-160 mm Hg. Acute fissures are associated with involuntary spasm of the internal sphincter high resting anal 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 chronic anal fissure – ‘sentinel pile’. Lateral internal sphincterotomy, reduces the anal tone effectively and heal most fissures, but also result in impaired anal continence. This disadvantage has led into an alternative non-surgical method of decreasing sphinctertone, and pharmacological agents such as nitrates, calcium channel blockers have shown promising results in lowering resting anal pressure and heal fissures without any anal incontinence. Fissures are common in both sexes. Anterior fissures more common in females.

Study was done with the aim to record the management followup and outcome in patients in comparison between lateral sphincterotomy and 0.2% GlycerylTrinitrate application in anal fissures among general hospital, Kakinada.

II. Material And Methods

This prospective study was undertaken at Government General Hospital affiliated to Rangaraya Medical College, Kakinada from July 2018 to July 2019 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 0.2% GlycerylTrinitrate and group 2...
were treated with Lateral Sphincterotomy. Both groupwere 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.

**III. Result**

There were 12 males and 18 females with a male to female ratio of 1:1.5 in group 1 where as in group 2 males are 12 and females are 18 giving the male: female ratio 1:1.5. 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 66.66%. Followed by constipation and bright red bleeding per anum in 18.33% and 15% of the patients respectively. The occurrence of posterior anal fissure was noted 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 27 patients (90%) healed completely between 4-8 weeks. In Group 2, 30 patients (100%) had complete resolution at the end of 4 weeks. In Group 1, 12 (40%) patients were pain-free at the end of 2 weeks. An additional of 12 (40%) patients were free of pain by 4 weeks and 3 (10%) more patients by 6 weeks. 3 patients (10%) were not relieved of pain even at the end of 6 weeks. In Group 2, 21 patients were relieved of pain by 2 weeks and the rest 9 patients were relieved of pain by 4 weeks time.

In group 1, 3 (10%) patients experienced mild headache and local irritation was present in 5 (16.66%) patients. In group 2, 10 (33.33%) patients experienced post-operative pain and transient incontinence for flatus was present in 2 (6.6%) patient. Recurrence was seen in 3 (10%) patient in the 0.2% Glyceryl Trinitrate group and none in the LIS group.

**IV. 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 0.2% Glyceryl Trinitrate 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 the disease is usually encountered in middle aged adults. In Udwadia T. Esers maximum incidence was seen in 31-40 years age group. There was female preponderance (60%) compared to males (40%) in this study.

In the 0.2% Glyceryl Trinitrate group, 12 (40%) patients were pain-free at the end of 2 weeks, 12 (40%) by 4 weeks and 3 (10%) were pain free by 6 weeks. 3 patients (10%) were not relieved of pain even at the end of 6 weeks. Fissure was completely healed in 27 (90%) out of 40 patients by 6 weeks. In this study, out of the 30 patients that were followed up in the 0.2% Glyceryl Trinitrate group, 3 (10%) patients experienced mild headache and local irritation was present in 5 (16.66%) patients. Of group 2, 10 (33.33%) patients experienced post-operative pain and transient incontinence for flatus was present in 2 (6.6%) patient. Recurrence was seen in 3 (10%) patient in the 0.2% Glyceryl Trinitrate group and none in the LIS group. Study from Boulos which posterior fissure (85.7%) is more common than anterior fissure (14.2%).

**Comparision of our study with others:**

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DOI: 10.9790/0853-1901112729  www.iosrjournals.org 28 | Page
V. Conclusion

Topical 0.2% GlycerylTrinitrate 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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Dr.P.V.Buddha, et.al. "A Comparative Study Between 0.2% GlycerylTrinitrate Application versus Lateral Sphincterotomy in Fissure in ANO".IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), 19(1), 2020, pp. 27-29.