

## 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 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 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 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 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

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### 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.<sup>1</sup>

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 childbirth.<sup>2</sup> Normal resting anal pressure is 80-160 mm Hg<sup>3</sup>. 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 an chronic anal fissure – 'sentinel pile'<sup>8</sup>. lateral internal sphincterotomy, reduces the anal tone effectively and heal most

fissures<sup>4,5</sup>, but also result in impaired anal continence. This disadvantage has led into an alternative non-surgical method of decreasing sphincter tone<sup>6</sup>, and pharmacological agents such

as nitrates, calcium channel blockers<sup>7</sup> have shown promising results in lowering resting anal pressure and heal fissures without any anal incontinence. Fissures are common in both sexes.<sup>9</sup> anterior fissures more common in females<sup>10</sup>

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 at government 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 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.

### 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%) 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% GlycerylTrinitrate 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% GlycerylTrinitrate 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<sup>9</sup> the disease is usually encountered in middle aged adults. In Udwardia 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 0.2% GlycerylTrinitrate 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% GlycerylTrinitrate 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 (6.66%) patient. Recurrence was seen in 3 (10%) patient in the 0.2% GlycerylTrinitrate group and none in the LIS group. Study from Boulos<sup>10</sup> which says posterior fissure (85.7%) is more common than anterior fissure (14.2%).

#### Comparison of our study with others:

Name of study	No. of patients	Group	Pain relief After 2 weeks	Healing after 2 weeks	Pain relief After 12 weeks	Healing after 12 weeks
Tripathi <sup>11</sup>	100	GTN	100%	0	100%	92.5%
		LIS	70%	0	100%	100%
Thomas <sup>12</sup>	40	GTN	40%	0	100%	85%
		LIS	70%	55%	100%	100%
Oettle <sup>13</sup>	24	GTN	-	-	100%	80%
		LIS	-	-	100%	100%
Tauro <sup>14</sup>	90	GTN	76.7%	16.7%	100%	86.7%
		LIS	83.3%	20%	100%	100%

Present study	60	GTN	40%	-	100%	90%
		LIS	70%	33.33%	100%	100%

### 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.

### References

- [1]. Bailey And Love's Short Practice Of Surgery 26th Ed- 72: 1248-1249.
- [2]. Farquharson's Textbook Of Operative General Surgery, 10E-24:442
- [3]. Ganongs Review of Medical Physiology, 24E (2012).
- [4]. Scouten WR, Et Al. Ischemic Nature Of Anal Fissure. British Journal Of Surgery. 1996;83:63-65.
- [5]. Tocchi Adriano, Mazzonigianluca, Miccini Michelangelo, Cassini Diletta, BettelliElia, BrozzettiStefania. Total Lateral Sphincterotomy For Anal Fissure. International Journal Of Colorectal Disease. 2004;19:245-49.
- [6]. Jonas Marion, Scholefield JH. Taylor I, Johnson CD. Recent advances in Surgery. 24th Edition.Churchill Livingstone; 2001.Anal fissure and chemical sphincterotomy; p. 115.
- [7]. Essentials of medical pharmacology by K.D. Tripathi, 6Ed, 40-543.
- [8]. Hamilton Bailey's Physical Signs 19ed. 2016;37:620.
- [9]. Goligher John, Anal Fissure, John Goligher. Surgery of the Anus, Rectum and Colon.AITBS. (5th Edition) 1992:150
- [10]. Boulos PB, Araujo JGC. Adequate internal sphincterotomy for chronic anal fissure: subcutaneous or open technique? British Journal of Surgery. 1984;71:360-62.
- [11]. Mishra BM, Tripathi P, Mishra JM, Debata PK, Panda BK (2002) Comparative study of Glyceryltrinitrate(GTN) ointment versus surgical management of chronic anal fissure. Antiseptic 99 (5):150-153
- [12]. Mishra R, Thomas S, Maan MS, Hadke NS (2005) Topical nitroglycerin versus lateral internal sphincterotomy for chronic anal fissure: prospective randomized trail. ANZ J Surg 75 (12):1030-1031
- [13]. Oettle GJ (1997) Glyceryltrinitrate versus sphincterotomy for treatment of chronic fissure in ano. Dis Colon Rectum 40 (11):1318-1320
- [14]. Leo Francis Tauro&Vittal V. Shindhe& P. SathyamoorthyAithala& John J. S. Martis& H.DivakarShenoyComparative Study of GlycerylTrinitrate Ointment Versus Surgical Management of Chronic Anal FissureIndian J Surg (July-August 2011) 73(4):268-277

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