Fissure In ANO: Case Study
Comparison between Lateral Sphincterotomy and Glyceryl Trinitrate (0.2%)

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ABSTRACT
Anal fissure is a painful lesion involving Anal canal. Most of them subside spontaneously. Some Acute anal fissures become chronic and will not heal. Chronic fissure is treated usually by dilatation of anus and lateral sphincterotomy. Both surgical procedures may cause some degree of incontinence in some patients. Recent studies have shown that Local Glyceryl trinitrate can reduce Sphincter pressure and more than 80% Fissures heal.

INTRODUCTION
Anal fissure is a difficult and painful condition affecting patient. It is a frequently seen condition in OPD. Every General Surgeon Face Innumerable cases with this complaint in his practice. After treatment often patients get endless satisfaction. Disatrous complications are also seen because of surgery, which causes long term distress to the patient. Anal fissure is a breach of the skin at the anal verge. Posterior fissures are more common.
Anterior fissures are only seen in 8-10% cases. Although Anterior midline fissures are seen in 25% of affected women and 8% of affected Men [Hananel 1997]. About 35% of patients have both Anterior And Posterior Fissures. Fissures – of the Midline- are to be suspected for Underlying pathology like HIV, TB, CROHNS, CA of Anal canal.

Initially fissures present as a small breach in Anodermal region later skin margins get thickened and internal anal sphincter become visible at the base. In case of chronic fissures Sentinel skin tag (distal fissure margin) and Hypertrophied Anal papillae (proximal to the fissure) are seen. Though fissure in ano is a common disorder, exact incidence is not known. It is frequently misdiagnosed for haemorrhoids by primary care providers. Clinical features of anal fissure are pain during and after defecation, some patients may experience rectal bleeding. Pain persists for hours in case of chronic fissure while in case of acute fissures pain is of short duration.

Digital Rectal Examination is avoided in these patients because the pain is so Severe. In some cases anal fissure is associated with haemorrhoids and recognised on table, when sphincter is relaxed so hemorrhoidectomy should also be done in such cases.

There are different modalities of treatment for anal fissure which include

- Conservative/medical
- Surgical

Conservative (Medical) treatment of Anal fissures:
In About half of the patients healing occurs with conservative management.

In a Retrospective review Shub HA et al reported that 44% of fissure patients healed with Sitz bath, psyllium fiber supplement and Emollient Suppositories.

Anal Dilators coated with topical anaesthetic agents like 2% lignocaine have been used by few for treatment of anal fissures.

Two Randomized control studies comparing medical therapy with or without an Anal dilator showed no benefit with self Dilatation [Mc Donald, Gough MJ].

Pharmacological sphincter Relaxants
Pharmacological Sphincter Relaxants like Nitric Oxide are used. NO (NITRIC OXIDE) is a Principle Nonadrenergic Noncholinergic Neurotransmitter in Internal Anal Sphincter[5,6], and its release results in Decreased Cytosolic Calcium levels which in turn causes Relaxation of Anal Sphincter.

Topical Nitrates: (0.2% Glyceryl Trinitrate):
Topical nitrates release nitric oxide invivo, studies demonstrated that 2% Glyceryl Trinitrate leads to decrease in Resting Anal Sphincter.

SURIGICAL THERAPY FOR ANAL FISSURES:

Anal Dilatation [Lord’s Dilatation]: It used as treatment for anal fissure with a success rate of 85-100%. the recurrence rate is more variable ranging from 0-60%. Neilsen etal performed Endoanal USG and found 65% of the cases having Sphincter defects.
Sphincterotomy: Eisenhammer\textsuperscript{17,18} popularised Lateral Sphincterotomy for management of fissure in ano during 1950. Lateral Sphincterotomy is better than Posterior Sphincterotomy because of better wound healing. In a Retrospective study Abcarian\textsuperscript{19} and Hawly\textsuperscript{20} in a randomised trial, both of them concluded that Lateral internal Sphincterotomy was preferred surgical option for Fissure in Ano.

**Aetiology of Anal Fissure**

Aetiology of anal fissure is debated for many years. Hard stools has been thought to be a common cause, but some patients give no such history. According to observation probable cause of Anal fissure is Raised Resting Anal pressure [Nothmann 1974, Hancock 1977]\textsuperscript{21,22}. After successful surgery like Anal Dilatation, Lateral Internal Sphincterotomy resting Anal pressure is decreased, so elevated Anal pressure may be the cause of anal fissure. Studies using Ambulatory Manometry have confirmed sustained resting hypertonia with few episodes of internal sphincter relaxation in chronic fissure patients [Farouk, 1994]\textsuperscript{23}

**OBJECTIVES**

Objectives of our study is to compare which method is best among local glyceryl trinitrate and lateral sphincterotomy in treating patients with chronic fissure in ano in M N R medical college & hospital during the year 2014 to 2015.

**MATERIALS AND METHODS**

Our study is on 80 of chronic anal fissure from out patients and in patients of General surgery department of M N R medical college & hospital, Sanga Reddy, Hyderabad.

**Study group 1**

Patients who are treated with local GTN, 3 times a day, are followed weekly for 6 weeks to see the response in reduction of symptoms (pain and bleeding PR)

**Study group 2**

Patients who are treated by lateral internal sphincterotomy and followed weekly for 6 weeks to see the response in reduction of symptoms

**INCLUSION CRITERIA**

- Patients more than 18 years of age
- Both Males and Females
- Fissures present both Anteriorly or Posteriorly or Both
- Presence of Pain, Spasm of Sphincter And Sentinel Pile At the Anal Verge

**EXCLUSION CRITERIA**

- Fissures present in lateral positions
- Fissures due to any underlying pathologies like TB, HIV, Crohns disease
- Presence of Hemorrhoids and Anal fistulas

**RESULTS**

**AGE AND SEX DISTRIBUTION OF PATIENTS**

- Total 80 patients with posterior anal fissure were studied, all were presented with pain, bleeding and constipation.
- Among the 80 patients, 60 were male and 20 were female patients.
- 40 patients were treated with lateral internal sphincterotomy and remaining 40 were treated with topical nitroglycerine ointment application 3 times a day.

| S.NO | AGE IN YEARS | MALES | FEMALES |
|------|--------------|-------|---------|
| 1    | 25-29        | 0     | 0       |
| 2    | 30-34        | 10    | 2       |
| 3    | 35-39        | 14    | 5       |
| 4    | 40-44        | 03    | 0       |
| 5    | 45-49        | 06    | 0       |
| TOTAL| 33           | 07    |         |
It is evident from the above information that majority of patients were males and age between 30 - 40 years

Table 3 SYMPTOMS DURATION IN BOTH THE GROUPS before presenting to hospital:

| DURATION | GTN | SPHINCTEROTOMY |
|----------|-----|----------------|
| 3 MONTHS | 12  | 17             |
| 3.5 MONTHS | 18  | 17             |
| 4 MONTHS | 09  | 04             |
| 4.5MONTHS | 01  | 02             |

Symptom duration in both the groups appears to be almost similar. Average duration of symptoms before presenting is 3.38 months.

Among the 40 patients with GTN, 9 patients were discontinued from therapy because of headache, as a side effect of GTN, (due to central vasodilatation), which could not be controlled with analgesics. Only 1 patient continued treatment after analgesics and reduced dose of GTN.

Patients were followed for duration of 6 months. Pain, bleeding, and sphincter spasm were recorded at durations of 6 weeks and 6 months.

Table 4 PERSISTANCE OF COMPLAINTS AFTER 6 WEEKS:

| PATIENT GROUP | PAIN PERSISTED IN ( No of patients) | SPASM PERSISTED ( No of patients) | BLEEDING ( No of patients) | NO HEALING ( No of patients) |
|---------------|-------------------------------------|-----------------------------------|---------------------------|------------------------------|
| GTN           | 06                                  | 23                                | 02                        | 23                           |
| SPHINCTEROTOMY | 02                                | 0                                 | 0                         | 10                           |

From the above statistics it is evident that lateral sphincterotomy is better compared to GTN in relieving pain, decreasing spasm, reduction of bleeding and also healing of the anal fissure at the end of 6 weeks of treatment.

Table 5 PERSISTANCE OF SYMPTOMS AT 6 MONTHS FOLLOW UP:

| PATIENT GROUP | PAIN PERSISTED IN ( No of patients) | SPASM PERSISTED ( No of patients) | BLEEDING ( No of patients) | NO HEALING ( No of patients) |
|---------------|-------------------------------------|-----------------------------------|---------------------------|------------------------------|
| GTN           | 2                                   | 21                                | 0                         | 0                            |
| SPHINCTEROTOMY | 0                                 | 0                                 | 0                         | 0                            |

Even at 6 months follow up pain relief, decrease in spasm, reduced bleeding and healing were better with sphincterotomy. In both groups, bleeding was absent in all patients, and all fissures were healed in both groups after 6 months.
CONCLUSIONS

- Lateral sphincterotomy provides complete relief of symptoms and healing of chronic fissures in most of the patients.
- Sphincterotomy results in anatomical correction, which relieves the etiological factor (high sphincter tone).
- Though sphincterectomy has minimal complications, the most distressing is faecal incontinence.
- Glyceryl trinitrate ointment application is inferior to sphincterotomy in relieving symptoms and also healing.
- But majority of patients on GTN are benefited in pain relief, without going to surgery.
- GTN therapy have minimal side effects, mainly head ache, which can be relieved by NSAIDS.
- GTN plays major role in management of acute fissures, prevent from going into chronic fissure.
- GTN is a good alternative for patients who prefer medical therapy over surgery.

SUMMARY

Lateral sphincterotomy offers complete relief of symptoms and healing of chronic fissure in ano in a majority of patients, and results in anatomical correction of the etiological factor of increased sphincter pressure. Complications of lateral sphincterotomy are minimal.

Glyceryl trinitrate ointment application is inferior to lateral sphincterotomy for the treatment of chronic fissure in ano with respect to both symptoms relief (pain, bleeding), sphincter spasm and healing. It is a good alternative therapy for patients who refuse surgery and prefer medical treatment, with minimal side effects.

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