

ORIGINAL ARTICLE

Comparison of Glyceryl Trinitrate Ointment versus Internal Lateral Sphincterotomy for Anal Fissure Pain Relief

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ABSTRACT

Background: Anal fissure is a linear painful mucosal tearing in the distal part of anal canal. It extends from dentate to anal edge.

Aim: To compare the glyceryltrinitrate ointment and internal lateral sphincterotomy for anal fissure pain relief in acute/chronic pts.

Study Design: Prospective study

Place and duration of study: Department of Surgery Unit-II, Fatima Memorial Hospital, Shadman Lahore from 1st October 2018 to 31st December 2020.

Methodology: 40 pts with acute and chronic anal fissure were enrolled. Half of the patients undergo internal lateral sphincterotomy while other opted 0.2% use of glyceryl trinitrate ointment. Each patient was followed for pain, recovery, complications and recurrence until 12 months for internal lateral sphincterotomy and 18 months in glyceryl trinitrate ointment.

Results: There were 24 males and 16 females with a mean age of patients as 30±3.2 years. Initial follow-up of patients showed 100% pain and fissure improvement in internal lateral sphincterotomy group as compared to 60% in glyceryl trinitrate ointment group respectively.

Conclusion: Internal lateral sphincterotomy is most efficient and reliable procedure in relieving anal fissure pains.

Keywords: Anal fissure, Internal lateral sphincterotomy, Glyceryl trinitrate

INTRODUCTION

Anal Fissure (AF) is considered as a common problem presented in both genders. It affects almost half of the global population.¹⁻² Anal fissure are predominately seen in all ages but are majorly common in young adults. An AF is presented with scrunching pain, fresh rectal blood, constipation and mucosal discharge. It occurs commonly in midline with 90% prevalent in posterior location. The chronic fissures are featured by presence of fissure above six weeks. Digital examination of rectum shows typical presentation of a fissure with either indurated, presence of fibrosis at the base or with/without fibres exposure at internal sphincter AF can cause sphincter spasm and blood flow reduction leading to ulceration³. Surgery is the major protocol for treatment on timely grounds specifically in those patients where conventional treatment methods have not been successful⁴. The management of anal fissure pain becomes unbearable in few cases opium deliverance containing drugs have been used in high pain enduring patient (20-40%)⁵.

In situation where pain is managed improperly a prolonged convalescence and further chances of complications increases.⁶ Use of NSAIDs and opioids have been banned by pharmaceutical industry facilitating the use of other drugs for pain relieving. The pain controlling drugs not only helps in quick recovery but also controls anxiety in patients.⁶ In patients having AF diseases the internal sphincter is considered vital as it is also the main source of pain⁷.

The use of glyceryltrinitrate ointment (GTN) which is a vasodilator has been linked with relaxing anal canals smooth muscle and also decrease the sphincter spasm production⁸⁻⁹. This results in reversal of chemical sphincterotomy. The chemical sphincterotomy is applied in treatment plan for chronic fissures and had shown 70% efficacy^{10,11}.

The present study was designed to compare the glyceryl trinitrate ointment with lateral internal sphincterotomy for identifying better pain relief option in AF patients.

MATERIALS AND METHODS

This prospective follow-up study including 40 anal fissure patients were enrolled. The study was conducted at Department of Surgery Unit-II, Fatima Memorial Hospital, Shadman Lahore from 1st October 2018 to 31st December 2020. Patients having atypical anal

fissure such as from HIV or carcinoma as well as those formed by vaginal deliveries were excluded pre operatively. Patients were asked for their choice either internal lateral sphincterotomy (ILS) or with GTN. Those 20 who consented for surgical procedure at their left lateral positioning a subcutaneously internal lateral sphincterotomy was performed under regional anesthesia. Neither ischeal nor perianal block (circumferentially) was done as it only ascends discomfort. A 2% xylocaine of 3-5ml was injected at position of three o'clock inside groove of sphincter. Internal sphincter was cut and gap was felt by finger insertion inside the rectum. This was an indicator for accomplishment of sphincterotomy. Patients were suggested to sit so that chances of hematoma formation could be reduced as a result of their own weight. All 20 patients with acute as well as chronic fissures opted for 0.2% GTN. The patients were advised to apply GTN for at least 6 weeks. The 20 internal lateral sphincterotomy patients were followed for 28 months while GTN group was followed for 34 months. There rate of satisfaction, decrease in pain was documented. Data was analyzed by using SPSS-23 through one way ANOVA and chi square values. T test was also performed for quantitative variables. P value less than 0.05 was considered as significant.

RESULTS

The present study enrolled 40 AF patients within the age group of 25-50 years. There were 24 males and 16 females in this study with a mean age of patients as 30±3.2 years (Table 1).

Table 1: Distribution of age between two groups (n=40)

Ages (year)s	ILS Group	GTN Group
20-30	6 (30%)	7 (35%)
31-40	11 (55%)	12 (60%)
41-50	2 (10%)	1 (5%)
>51	1 (5%)	-

The 3 months initial follow-up of patients showed 100% pain and fissure improvement in ILS group as compared to 65 and 60% in GTN group respectively. The frequency of constipation and bleeding was also well improved in ILS cases than the one who opted use of GTN (Table 2). Post-ILS surgery complications showed 1.75% ILS operated patients developing hematoma while within GTN group 49.5% developed head ache complication by its use (Fig.1). After completion of follow-up of all cases it was observed that the chances of recurrence were much higher in GTN

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users than who were operated through internal lateral sphincterotomy. The frequency of complete recovery from fissure was also lower in GTN cases than ILS (Table 3).

Those patients who were not recovered from GTN treatment and those who relapsed in ILS were then followed again to internal lateral sphincterotomy.

Table 2: Comparison of clinical presentation and healing at first follow-up between groups

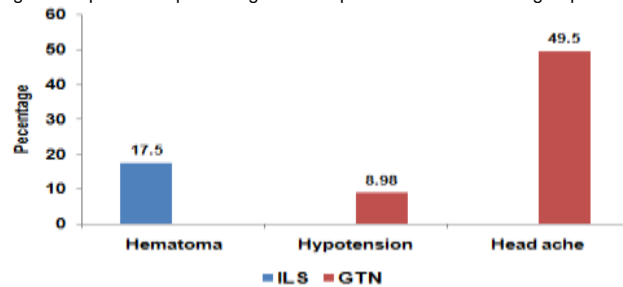
Variable	ILS Group			GTN Group		
	Presentation	Post Surgery	Improvement	Presentation	After appliance	Improvement
Pain	20	-	100%	20	7	65%
Constipation	20	3	85%	20	9	55%
Bleeding	16	1	93.75%	8	3	62.5%
Fissure	20	-	100%	20	8	60%

Table 3: Comparison of recovery and recurrence between GTN and ILS group

Treatment option	Healed		Recurrence
	Acute haemorrhoid	Chronic hemorrhoid	
GTN (34 months)	62.79%	43.23%	72*-30%**
ILS (28 months)	93.75%	93.38%	10%

*1st year and **in next two years

Fig 1: Comparison of percentages of complications between two groups



DISCUSSION

Anal fissure are most common disease condition seen in men and women mostly in their 30s to 40s.^{12,13} Counseling regarding lifestyle changes and dietary control can help in managing this disease.^{14,15} The present study found almost similar number of males and females affected by AF. Fast food diet with lack of fiber in it is one of the major reasons of causing it¹⁵. The treatment of AF is either by applying topical medicines or surgery¹⁶. The complication of head ache was presented in current research. Glyceryl trinitrate ointment as being a nitrate containing ointment has been reported to give head ache in patients as its common side effect¹⁷.

A research conducted in Asia revealed that 66.6% of patients using 0.2% GTN develops head ache whereas inconsistency in feces is noticed in 6.6% of the patients treated with ILS¹⁸. Another study showed that 20% patients with AF developed headache which was manageable with the use of paracetamol whereas 10% showed anal seepage in ILS cases.¹⁹ This result was contradictory to the current study results. The recurrence rate had been reported as 11% in a study which is much lower than the current reported recurrence rate by GTN in this study²⁰.

The recovery rate seen with internal lateral sphincterotomy is much higher than with glyceryltrinit rate ointment. Although in those patients who deny surgical invasion the use of GTN is most recommended. On the contrary who consent for surgical procedure are opted for ILS which has shown great success as seen in the current study as well²¹.

CONCLUSION

Internal lateral sphincterotomy is most efficient and reliable procedure in relieving anal fissure pains.

Conflict of interest: Nil

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