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ORIGINAL ARTICLE

What is the optimum treatment of chronic anal fissure?

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ABSTRACT

Aim: To compare the efficacy of topical Glyceryl trinitrate 0.2% (GTN) with Lateral internal spincterotomy (LIS) for treating chronic anal fissure (CAF).
Methodology: A randomized control trial was carried out in the general surgery department, Lady reading hospital, LRH MTI, Peshawar (January 2018 to July 2018). All consecutive patients 18 to 60 year old presenting to OPD with a clinical diagnosis of chronic anal fissure were enrolled after informed consent. A total of 60 patients were enrolled. The patients were assigned two groups, including treatment group A (lateral internal spinterotomy) or treatment group B (use of Topical GTN ointment 0.2%).
Results: Out of the 60 patients, 30 were enrolled into each group. The female had majority of 57% (group A) and 60% (group B). Mean duration regarding symptoms in group A was 1 year with SD ± 3.51 vs 1 year ± 2.98 in group B. Majority of patients in both groups were in the 20 to 40 years age group (74% in group A vs 83% in group B). Complete fissure healing and resolution of symptoms was observed in 27(91%) in group A vs 20(66%) in group B.
Conclusion: In conclusion, we derive that lateral internal spincterotomy is more effectual than Topical Glyceryl trinitrate 0.2% for treating chronic anal fissure.
Keywords: Chronic anal fissure, lateral internal spincterotomy, Glyceryltrinitrate

INTRODUCTION

An anal fissure(AF) is a linear, straight split in the lining of distal anal canal extending from below the dentate line to the anal verge[1,2]. AF may be of two varieties, acute and chronic. Acute anal fissure(AAF) is always associated with the spasm of the anal sphincters. It often heals spontaneously. When it fails to heal after 6 weeks and displays significant fibrosis, hypertrophied papillae, and a sentinel pile, is known as chronic anal fissure (CAF). May be associated with spasm of the involuntary musculature of the internal sphincter[3,4].

There are different treatment modalities for this condition and the goal of all treatment is to completely relax the internal sphincter. Some form of surgery treats majority of these and the simplest procedure is gentle dilatation of sphincter but this technique is no longer recommend. The second method of lateral internal sphincterotomy is also much favourable option with complete healing rates approaching 97 to 100%. It has been favoured by most of the surgeons, because it offers long lasting relief in sphincter spasm[5,6]. Although complication may arise[3,5,7].

With better understanding of pathophysiology of CAF, certain pharmacological products have been used with success for treatment of chronic anal fissure. Among these, Nitroglycerine is of special interest as it can be manufactured easily in pharmacy and economical as compared to others. It is applied locally as 0.2% cream[4]. High success rates have been reported with its use in addition to acceptability of this form of treatment to patient and low incidence of post treatment side effects like incontinence etc. However, its use is limited by side effects like headache, hypotension and dizziness etc[8].

In a study by Aslam MI et al[8] no pain after treatment was reported in 56.7% in GTN group compared to 96.7% in the LIS group randomized for anal fissure. With regards to bleeding per rectum, 56.7% in GTN group compared to 93.3% in LIS group reported no bleeding. Complete fissure healing was recorded in 50% GTN group compared to 93.3% in LIS group.

CAF is a common problem and patients are usually shy to accept the surgical form of treatment in the local environment but they readily accept the pharmacological form. In the current study we assess the comparative overall efficacy of LIS with GTN.

Efficacy was labelled if patients had total relief from two of the three symptoms (pain measured on visual analogue scale, bleeding per rectum and complete fissure healing) at 6th week from the start of treatment.

The objective of the study was to compare the efficacy of topical Glyceryl trinitrate 0.2% (GTN) with Lateral internal spincterotomy (LIS) for treating chronic anal fissure (CAF)

METHODOLOGY

This study was carried out in general surgery department, Lady reading hospital, LRH MTI, Peshawar (January 2018 till July 2018) after approval from IRB. In total, 60 patients were enrolled in our study by consecutive sampling from the Outpatient department. 30 patients were allocated to each treatment group by table of random numbers.

All patients age 18 to 60 were included in the study after clinical diagnosis of chronic anal fissure and informed consent. However, patients who had any other ano-rectal disease were excluded from the study. Patients with secondary fissures from clinical history and examination,

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with a history of comorbidity (Tuberculosis, hypertension. diabetes, malignancies and ischemic heart disease), pregnancy, patient on treatment with nitrates, and patients with a history of anal trauma or surgery were excluded.

Patients with symptoms of chronic anal fissure were registered in OPD, followed by a complete history and thorough examination including local examination of the anal region. When the diagnosis of chronic anal fissure was established, they were included in the study after the merits and demerits of both treatment options had been explained and fully informed written consent taken. The patients were assigned either group A or B with the help of random numbers table. Group "A"; Treated with Lateral Internal Sphincterotomy, and Group "B"; treated with topical Nitroglycerin. Patient allocation is shown is CONSORT table 1. The appropriate treatment of each group was offered at the outdoor department for GTN paste group 0.2%, four times a day and the Lateral Internal sphincterotomy group was admitted for surgery. Complete examination was done at the follow up visits.

All patients in both groups were followed at regular intervals till 6th post week of start of treatment to determine the efficacy in terms of pain, bleeding per rectum and fissure healing. Efficacy was labelled if patients had total relief from two of the three symptoms (pain measured on visual analogue scale, bleeding per rectum and complete fissure healing) at 6th week from the start of treatment. Fissure healing was defined as filling up of the fissure with pinkish granulation tissue seen on naked eye during clinical examination.

All information was collected on a pre-designated structured Performa. Data was analyzed using "SPSS version 22". Mean and standard deviation was determined for numerical variables like age and duration of CAF. Frequencies and percentages were computed for categorical variables like gender, socioeconomic status and efficacy. Chi square test was applied for comparative efficacy in both groups in which P value ≤ 0.05 was stated as a value of significance. Stratification of efficacy was done for age, gender, socioeconomic status and duration of CAF to see the effect modifiers. Post stratification chi square test was again calculated and a P value of ≤0.05 was again of significance.

RESULTS

In Group A 13(43%) patients belonged to age category 20-30 years, 9(31%) patients were of age category 31-40 years, 5(17%) patients were in category 41-50 years and 3(9%) patients were in 51-60 years. Mean age came out to be 30 years with SD±2.77. 13(43%) patients were male and 17(57%) patients were female, being majority. Where as in Group B 14(48%) patients belonged to age category 20-30 years, 11(35%) patients of age category 31-40 years, 4(13%) patients were in category 41-50 years and 1(4%) patient were in 51-60 years. Mean age was 29 years with SD±2.53. 12(40%) patients were male and 18(60%) patients were female, again in majority.

Socioeconomic status amongst the two groups was compared as in Group A 17(57%) patients were low income, 11(37%) patients were middle income and 2(6%) patients belonged to high-income category. Where as in Group B 18(60%) patients were low income, 10(34%) patients were middle income and 2(6%) patients belonged to high-income category.

In Group A 13(43%) patients had duration of CAF ≤1 year and 17(57%) patients had duration of CAF >1 year. Mean duration was 1 years with SD ± 3.51.Where as in Group B, 12(40%) patients had duration of CAF ≤1 year and 18(60%) patients had duration of CAF >1 year. Mean duration being 1 year with SD± 2.98

We observed the status of fissure healing amongst the two groups. In Group A 27(91%) patients fissures healed while 3(9%) patients didn't have fissure healing. Where as in Group B 20(66% patients had fissure healing while 10(34%) patients didn't have fissure healing.

In terms of overall efficacy of Group A, LIS was effective in 27(91%) patients but was ineffective in 3(9%) patients. In Group B topical GTN was effective in 20(66%) patients but was ineffective in 10(34) patients.

Stratified efficacy in relation to age category, gender, socioeconomic status and duration of CAF(Table 1,2,3).

Table 1: Efficacy stratification with respect to age category.

Age (years)	Efficacy	Group A	Group B	P value
20-30	Effective	13	11	0.0766
	Ineffective	0	3	
Total		13	14	
31-40	Effective	8	8	0.3686
	Ineffective	1	3	
Total		9	11	
41-50	Effective	4	1	0.0989
	Ineffective	1	3	
Total		5	4	
51-60	Effective	2	0	0.2482
	Ineffective	1	1	
Total		3	1	

Table 2. Efficacy stratification for duration of symptoms.

Duration	Efficacy	Group A	Group B	P value
≤ 1 year	Effective	12	8	0.1093
	Ineffective	1	4	
Total		13	12	
> 1 year	Effective	15	12	0.1288
	Ineffective	2	6	
Total		17	18	

Table 3. Efficacy stratification for Gender.

Gender	Efficacy	Group A	Group B	P value
Male	Effective	11	6	0.0637
	Ineffective	2	6	
Total		13	12	
Female	Effective	16	14	0.1673
	Ineffective	1	4	
Total		17	18	

DISCUSSION

Anal fissure is a frequently seen condition, but we don't have the exact incidence in figures. This disease is sometimes mistaken for hemorrhoids by primary health care personel. The pathogonomic feature of anal fissure is painful defecation, during or after the act. The pain may be of short duration with acute fissures, but may continue for hours or be persistent in chronic cases. The pain is often so severe that patients might even attempt to avoid defecating altogether. These patients can present with

rectal bleeding, usually streaks of fresh red blood on stool or on the toilet tissue. Altered blood or blood mixed with stool indicates other pathology. Mostly anal fissures are acute, resolving spontaneously or with simple dietary modification like increase in fibers and stool-softening laxatives when appropriate. Although a proportion (probably<10%) of chronic fissure eventually resolve with conservative measure, most require further intervention to heal.

Our study shows that mean age in Group A was 30 years with SD ± 2.77 and mean age in Group B was 29 years with SD±2.53. In Group A, 43% patients were male and 57% patients were female. While in Group B, 40% patients were male and 60% patients were female. More over, in Group A; LIS was effective in 91% patients and in Group B; Topical GTN was effective in 66% patients.

This study is comparable to study by Aslam MI et al[8] in which no pain after treatment was reported in 56.7% in GTN group compared to 96.7% in the LIS group randomized for anal fissure. With regards to bleeding per rectum, 56.7% in GTN group compared to 93.3% in LIS group reported no bleeding. Complete fissure healing was recorded in 50% GTN group compared to 93.3% in LIS group.

Brown CJ deducted from his study that LIS is superior to topical GTN for healing of CAF and does not compromise faecal incontinence in the long followup[9].

Garcea in 2003 conducted a study and found that conservative lateral internal sphincterotomy resulted in 97% of the patients with healed fissures[10]. Anal sphincterotomy with or without other related rectal procedures can be safely prescribed in properly selected patients[11]. Total subcutaneous LIS is a safely effective for CAF that only rarely led to flatus incontinence. LIS is a gold standard treatment for anal fissure[12]. It is also safely effective in treating CAF[12,14]. In a study it was shown that only 4% of the patients initially healed with 0.2% GTN and had to undergo sphincterotomy for recurrences[13].

Mishra and his colleagues conducted a study in New Dehli, India and were of the opinion that topical GTN, be regarded as initial treatment option for CAF. LIS should be reserved for those with severe disabling pain and for patients not responding to at least 4 weeks of GTN therapy[15].

Conservative LIS under local anesthesia was found effective in more than 98% of patients[14]. Incontinence to flatus was seen in only one patient and no patients developed fecal incontinence[17]. Hypertrophied anal papilla and fibrous anal polyps should be removed along with treating CAF[16].

Patients with a new onset anal fissure, should undergo initial conservative trial treatment, and most of acute fissures heal eventually with conservative therapy alone. In case non-operative treatment fails or if a patient's pain is unbearable to wait for conservative trial to work out, LIS is usually the next treatment option. Although surgery is effective, fissure healing and relapse rates are quite variable. After LIS, the healing rates range from 78 percent to greater than 90 percent and the recurrence rates also varied[18,19]. These variations could be due to the type of surgical technique (open vs. subcutaneous sphincterotomy) or the length of the sphincterotomy incision

CONCLUSION

Lateral internal sphincterotomy is comparatively of increased effectiveness than topical Glyceryl trinitrate in treating chronic anal fissure.

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