

AN AGGRESSIVE APPROACH TOWARDS TREATMENT OF ACUTE ANAL FISSURE

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ABSTRACT

Objective: To evaluate the efficacy of 0.2% glyceryl trinitrate (GTN) paste as first line treatment in acute anal fissure with no severe side effects.

Study Design: Randomized control trial.

Place and Duration of Study: Combined Military Hospital Kharian and Combined Military Hospital Malir Pakistan from January 2008 to August 2010.

Patients and Methods: Patients presenting with acute anal fissure were randomized in 2 groups by using computer generated table. Group A received 0.2% GTN paste and group B received lignocaine gel twice daily in addition to high fiber diet, sitz bath and stool softeners. Pain scores on 100 mm Visual Analogue Scale, healing of fissure and side effects (headache and flatus incontinence) were noted at 0,2,4,6 and 8 weeks. Evolution to chronic anal fissure and recurrence rates (3 and 6 months) was also noted. Data was entered on SPSS 16.0 and p value was calculated.

Results: Out of 161 patients, 109 patients (56 in group A and 53 in group B) completed the study. Demographical data was comparable in both the groups. Results were statistically significant ($p < 0.05$ or less) in terms of complete healing of fissure and pain relief at each visit. Patient in group A had less recurrence rates and evolution to chronicity but the results were not statistically significant ($p > 0.05$). Patients experiencing mild and moderate headache were 5 and 3 respectively whereas 10 (17.8%) patients had temporary flatus incontinence in group A.

Conclusion: Use of 0.2% GTN as first line treatment in acute anal fissure showed better pain relief fastened healing, less recurrence rates and also prevents its evolution to chronicity.

Keywords: Acute anal fissure, Chronicity, GTN.

INTRODUCTION

Anal fissure is a small linear tear in the lining of distal anal canal below the dentate line¹. There is lack of data for prevalence of acute anal fissure in general population² but there were 1.56 hospital admissions per 10,000 people for the treatment of anal fissure during 2005-06³. Acute anal fissure is significantly more common than chronic anal fissure⁴ and it is an extremely painful condition which definitely merits a prompt and complete symptomatic treatment. Unfortunately, the treatment strategy for acute anal fissure remained to be mostly conservative in form of high fiber diet, sitz bath and topical lignocaine gel⁵, whereas in chronic anal fissure chemical sphincterotomy (0.2% GTN, 0.5% nifedipine)

remains the first line of treatment⁶. Chemical sphincterotomy has usually been discouraged in case of acute anal fissure because the response to conservative management has claimed to be up to 87%^{7,8} which seems to be quite satisfactory whereas chemical sphincterotomy is reported to cause headache in a significant number of patients even up to 80% in certain studies and had also resulted in transient incontinence of flatus in the range of 0-13%⁹. Headache remained one of the main limiting factors in using GTN but it was observed that the side effects were troublesome when GTN was either used in higher concentrations or thrice daily. It was also observed that conservative management had taken longer to heal acute anal fissure and there were more chances of recurrence and evolution to chronic anal fissure, whereas the side effects associated with chemical sphincterotomy were not as troublesome as had been reported in many of the previous studies⁶. The aim of this study was to evaluate a treatment strategy

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which not only gives better and prompt symptomatic relief but also fastens healing and decreases the rates of recurrence and its evolution to chronicity.

PATIENTS AND METHODS

It was a randomized, multicenter double blinded control trial conducted at Combined Military Hospital (CMH) Kharian and CMH Malir from Jan 2008 to Aug 2010. Consecutive patients above 18 years of age of both genders presenting with symptoms of acute anal fissure were included in the study. After taking the informed consent a detailed clinical history was taken and examination was carried out. Patients having chronic anal fissure, fissure secondary to

usual trend of a large number of dropouts and lost to follow up in our setup (50-70%) a minimum of 160 patients were planned to be initially enrolled in the study. A detailed proforma was filled and all the patients were advised to take high fiber diet and stool softeners (syrup lactulose 30 ml twice daily). Patients were also advised to take sitz bath in luke warm water for minimum of 10 minutes, twice daily once in the morning preferably after passing stools and second before going to bed and also to apply the prescribed cream with the finger tip circumferentially 1cm inside the anal canal after taking the sitz bath. Patients were also advised not to take any analgesics during the treatment. In group A 0.2% GTN was given

Table-1: Effects of treatment on pain scores and complete healing.

Observation at Weeks	Complete Healing		p value	Pain on 100 mm VAS \pm SD		p value
	A	B		A	B	
0	-	-		81.96 \pm 7.727	80.75 \pm 6.468	-
2	16 (28.6%)	7 (13.2%)	0.05	16.96 \pm 17.573	31.70 \pm 18.886	<0.001
4	19 (33.9%)	10 (18.9%)	0.001	3.57 \pm 6.947	12.08 \pm 10.806	<0.001
6	13 (23.2%)	11(20.7%)	<0.001	0.0	5.09 \pm 7.489	<0.001
8	5 (8.9%)	9 (17.0%)	0.001	0.0	3.58 \pm 6.532	<0.001

any other pathology, history of recurrence, history of previous treatment with local ointment or surgery, pregnancy, history of allergy to GTN, patients already on oral nitrates or calcium channel blockers, patients who perceived to undergo perineal surgery for any concurrent disease like haemorrhoids and patients unwilling for the study were excluded from the study. Acute anal fissure was defined as a superficial ulcer in the anoderm with sharply demarcated edges with history of less than 8 weeks and no other features of chronicity¹⁰. Chronic anal fissure was defined as symptoms of ulcer lasting more than 8 weeks with at least any one of the features of chronicity. The features of chronicity considered were visible fibers of internal anal sphincter at the base, sentinel pile or hypertrophied anal papilla¹¹. Eligible patients were randomly assigned to one of the two treatment groups according to a computer generated list using Random Allocation Software. A minimum of 90 patients were required for a margin of error of 10% and 95% confidence interval and keeping in view the

whereas in group B 2% lignocaine gel was prescribed. 0.2% GTN was prepared by the hospital dispenser in white paraffin and the patients were advised to keep it in a cool and dark place. Patients were followed up in the outpatient clinics at 2, 4, 6 and 8 weeks to look for the effect of treatment and then after 3 and 6 months for recurrence. The double blinding was ensured by not disclosing the treatment group to the patient and to the surgeon who examined the patients on each visit and filled the proforma. Pain was recorded on arrival and on each visit on 100 mm Visual Analogue Scale (VAS). Patients were explained to record pain from 00 mm (no pain) to 100 mm (worst pain ever) on daily basis on the given proforma. Patients were examined on each visit for complete healing and signs of chronicity. Complete healing was defined as complete epithelialization of the fissure. The complications including headache and flatus incontinence were also recorded. Headache was recorded on 100 mm VAS (< 30 mild, 30-50 moderate and > 50 severe headache). Patients were advised to take tablet acetaminophen for mild to moderate

headache and to report to the outpatient if severe headache occurred. Recurrence was noted on 3 and 6 months interval. Patients showing signs of chronicity were given option to continue with the same treatment or to opt for surgery in the form of percutaneous lateral sphincterotomy. Association with constipation and the location of the fissure were also noted along with other demographic data. Data was fed on SPSS 16 and independent t test was applied for pain scores and complete healing at each visit. A *p* value of ≤ 0.05 with a confidence interval of 95% was considered as significant.

RESULTS

A total of 109 patients out of 161 patients (56 in group A and 53 in group B) completed the study. In group A 3 patients and in group B 2 patients opted out of study after 4-6 weeks due to non compliance and continuous severe pain and opted for lateral sphincterotomy. In group A 8 patients and in group B 11 patients were lost to follow up within 8 weeks of treatment. A total of 26 patients from group A and 21 from group B did not return for follow up at the end of 6 months and thus dropped out of the study. The effect of treatment on pain scores and complete healing (with *p* value) is given in table-1. A total number of 4 and 10 patients from group A and B respectively evolved into chronic anal fissure (*p* 0.069). Three patients from group A and 16 patients from group B did not show complete healing

withdrew from treatment due to headache or flatus incontinence. Patients showed 73.75 ± 9.451 and 70.38 ± 5.871 compliance on 100 mm VAS to the overall treatment in Group A and B respectively.

DISCUSSION

Acute anal fissure is an extremely painful condition that affects a sizeable majority of population. The cause is controversial but theories suggest that an initial tear fails to heal because of internal anal sphincter (IAS) spasm leading to secondary local ischemia of anal mucosa^{5,10,12-13}. The ischemic nature of the fissure was claimed to be the main attributing factor towards its chronicity^{5,14}.

Acute anal fissure may heal spontaneously or with conservative treatment with high fiber diet, warm sitz baths, stool softeners and topical anesthetics^{5,15} but high number of patients had poor or delayed symptomatic relief¹⁶ and significant proportion progress to chronicity.

Chemical sphincterotomy is now a first line treatment for chronic anal fissure^{17,18} but due to its side effects (headache and flatus incontinence) it had not been advocated for the treatment of acute anal fissure and majority of the surgeons considered it to be an over treatment. Minimal authenticated published data were available in which chemical sphincterotomy had been used as first line treatment in cases of acute anal fissure¹⁹.

Table-2: Long term results after treatment.

Parameters	A	B	<i>p</i> value
Non healing after 8 weeks	3 (5.4%)	16 (30.20%)	0.001
Recurrence	3 months	2 (3.8%)	0.696
	6 months	6 (10.7%)	0.034
Evolution to CAF	4 (7.1%)	10 (18.9%)	0.069
Flatus incontinence	10 (17.8%)	-	-

after 8 weeks of treatment, 8 out of which opted to continue chemical sphincterotomy with 0.2 % GTN and showed complete healing after 4 weeks of further treatment whereas 11 patients opted for lateral sphincterotomy. Severity of headache and flatus incontinence in group A is given in table-2. None of the patients experienced severe headache and no patient

In our study the incidence of female patients was in contrast to the overall incidence for acute anal fissure^{5,20,21} due to the conservative attitude of the females towards the perianal diseases in our society. The mean age of 30.80 years as well as the pretreatment pain scores and the location of the fissure were comparable to other studies²².

The primary objective of the study was to evaluate the time taken for pain relief, which was statistically significant ($p < 0.05$) in the treatment group and became more pronounced after the first 2 weeks of treatment. Pain scores in the control group were comparable to other studies in which acute anal fissure had been treated conservatively²². Acute anal fissure being a severely painful condition this symptomatic pain relief definitely supported the use of 0.2% GTN as first line of treatment. This had also increased the compliance rate as well as the satisfaction of the patients to the treatment (73.75 ± 9.451 as compared to 70.38 ± 5.871 in control group). No study was found that had compared the pain relief 2 weeks after starting the treatment so the true comparison could not be done. Further studies may be done to compare this important aspect of the treatment of acute anal fissure.

The other objective of the study was to compare the time taken for complete healing which was significantly better in the treatment group ($p < 0.05$). The control group had comparable results to other studies in which conservative approach was followed²². This delayed healing and slower pain relief had led to dissatisfaction of the patients resulting in poor compliance to the treatment. The poor compliance was also one of the contributing factors towards the failure of conservative treatment. This had not been studied previously and remained to be a point of concern as far as the overall treatment strategy is concerned and is recommended to be studied in detail in future trials.

Troublesome headache resulting in poor compliance and significant drop outs were reported when GTN had been used in cases of chronic anal fissure as there was no authenticated data available for acute anal fissure so we compared our results with the effects of GTN in cases of chronic anal fissure as far as complications were concerned. It was observed that either GTN had been used in higher concentration (0.3%) or been advised on thrice daily basis in these studies²³. The dosage and its timing especially going to bed might have resulted in lesser side effects. In contrast to

other studies⁹ only 5 (8.9%) and 3 (5.4%) patients had mild and moderate headache respectively. None of the patients experienced severe headache and there were no drop outs.

Although the incidence of flatus incontinence was comparatively on a higher side in our study (17.8%) but was transient and none of the patients dropped or withdrew from the study.

In our study the main difference was observed on early onset of symptomatic pain relief which was thought to be due to addressing the pathophysiology behind pain in acute anal fissure (ischemia). GTN caused relaxation of the internal anal sphincter and also caused local vasodilatation thus not only decreasing the pain but also fastening the healing rates as compared to the patients who were treated with topical lignocaine gel only. We were unable to find any authentic data in which GTN was compared with conservative measure in acute anal fissure; instead comparable results were found when topical 0.5% nifedipine ointment was used in acute anal fissure²⁴.

As far as the rate of recurrence and evolution in chronicity was concerned the statistical difference was not significant but a larger sample size could be used in future studies to confirm the findings.

Another limitation of this study was the lesser time of follow up. A larger sample size and longer duration is recommended for better follow up to confirm the efficacy of this treatment especially for recurrence rates and its evolution into chronicity. The setting of the study being a military hospital had led to a large number of lost to follow up of the patients due to a number of reasons. This could be overcome by doing telephonic follow up of all such patients in future studies.

CONCLUSION

An aggressive approach towards treatment of acute anal fissure with 0.2% GTN can lead to better results in terms of pain relief and healing rates. This treatment also lessens the recurrence rates and may also prevent its evolution to chronicity.

CONFLICT OF INTEREST

The authors of this study reported no conflict of interest.

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