

Comparative Evaluation of Efficacy of Sitz Bath Vs Lignocaine Ointment Vs Topical Glyceryl Trinitrate in Treatment of Acute Anal Fissure: A Prospective Study

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Abstract: The aetiology of anal fissure is not fully understood—why some heal spontaneously and others become chronic remains a mystery. In this study we compared use of sitz bath to medical therapy in the treatment of acute anal fissure on OPD basis. Seventy five patients with an acute first episode of anal fissure were randomised to receive a three week treatment of Sitz bath with psyllium husk vs 5% lignocaine ointment vs 2% Glyceryl trinitrate ointment. After one, two and three weeks of treatment, symptomatic relief and healing rates were comparable among patients treated with sitz baths with psyllium husk and GTN ointment than those treated with lignocaine ointment. Therefore, a cheap and effective treatment of sitz bath can be used as first line instead of GTN ointment which has potential side effects.

Keywords: Fissure, sitz bath, medical therapy.

I. Introduction

Anal fissure is a cut or ulcer in the anal canal extending from the dentate line to the anal verge. The cause is not known. However, current theories suggest that an initial traumatic tear fails to heal, because of the internal anal sphincter spasm, generating high pressure into the anal canal and leading to secondary local ischemia of the anal mucosa [1, 2]. It is associated with hypertonia of the internal anal sphincter (IAS) and pain; this vicious cycle of pain and spasm leads to reduced mucosal blood flow and hence to poor healing of the fissure [1]. Treatment of an acute anal fissure aims at relieving pain and reflex spasm often resulting from constipation. This can be done by improving the blood supply to the ischemic area in order to facilitate healing. A prospective randomized trial was done to compare the efficacy of sitz bath in combination with psyllium husk vs 5% lignocaine ointment vs glyceryl trinitrate ointment (GTN) topically.

II. Material And Methods

All patients of either gender aged 16-60 years coming to outpatient department with first episode of acute anal fissure presenting within 3 weeks of onset were included in the study.

Exclusion criteria- cardiovascular diseases, pregnancy and lactation, associated inflammatory bowel disease, patients with signs of a chronic fissure (visible fibers of the internal sphincter in the base and fibrous induration of the lateral edges), sentinel piles or hypertrophied anal papillae, and patients with anal disease requiring surgery, such as abscess or fistula.

This was a prospective, randomized controlled study.

Eligible patients were randomized into three groups of 25 patients each. Patients in group A were advised sitz bath for 15 minutes twice daily along with psyllium husk in a dose of 10 gm twice daily. Patients in group B were advised to apply 5% lignocaine ointment into the anal canal twice a day. Patients in group C were prescribed use of GTN ointment locally twice a day. The primary endpoint was symptomatic relief to the patient and/ or healing of the fissure defined as epithelization.

Anal pain was assessed before starting treatment and at weekly follow-up visits using a linear visual analog pain score (range 0-10, with 0 representing no pain and 10 indicating the severe pain)

Bleeding per rectum was assessed subjectively at baseline and at the end of treatment.

Statistical Analysis

The data was analyzed using chi square test and p value was calculated; a value of < 0.05 was considered significant.

Compliance

Patients in all the three groups were advised same dietary modifications including high fiber diet. Other measures like avoiding straining at stools were also prescribed. Patients in all three groups did not use laxatives during the study.

III. Results

A total of 75 patients were randomized into three groups, Group A (sitz bath with psyllium husk) and Group B (lignocaine ointment 5%) and group C (2% GTN ointment). Age ranged from 16 to 62 years (mean=33.74). Forty six patients were male and twenty nine were female (M: F=1.6:1). Pain was the most common symptom (n=54) followed by bleeding (n=32), constipation (n=18) and pruritus (n=7). The pre-intervention VAS scores in the two groups were comparable.

Table 1. Demographic Profile Of Patients In Study

	Group A (Sitz bath)	Group B (lignocaine)	Group C (GTN)
Number of patients	25	25	25
Age (Mean)	35.59	32.42	33.21
M : F	1.57:1	1.77:1	1.44 :1

At first week of follow up, 22 out of 25 patients (88%) in group A had symptomatic relief with VAS of 0-5. Three patients had persisting moderate pain while none had severe pain. In group B, 14 out of 25 patients (56%) had relief. Nine patients had a score of 10 on VAS while two patients had moderate pain. In group C, 21 patients had relief (84%) while 4 patients had moderate pain.

Healing was achieved in 18 patients in group A, 9 patients in group B and 19 patients in group C in the second week. At the end of three week follow up, 20 patients (80%) had healed fissure in group A, 10 patients (40%) in group B and 21 patients (84%) in group C.

Table 2. Healing Rates Of First Episode Acute Anal Fissures In Relation To Treatment Regimens.

	WEEK 2 [n(%)]	WEEK 3 [n(%)]
SITZ BATH	18 (72%)	20 (80%)
LIGNOCAINE OINTMENT	9 (36%)	10 (40%)
GTN OINTMENT	19 (76%)	21 (84%)

Side effects like headache was more common in GTN arm (n=14) as compared to lignocaine (n=4) and sitz bath (n=1). The pain was moderate and responded well to paracetamol. Postural hypotension occurred in one patient in GTN arm only.

IV. Discussion

Majority of the patients presenting to the OPD were males (1.59:1). All our patients had first episode of anal fissure with a very short duration of <3 weeks. Acute fissures are known to heal spontaneously within one to three weeks [3]. Nevertheless, these fissures cause symptoms for which patients will often seek help. Of the several treatment regimens available, however, which is the most favorable, is a matter of controversy [3].

Sitz bath with or without adding boric acid powder, povidone iodine solution, or potassium permanganate in the water soothes the pain and relaxes the spasm of the internal sphincter for some time while high fiber diet and bulk-forming agents such as Psyllium husk; green leafy vegetables and fibrous fruits help in increasing the bulk of stool leading to a smooth defecation.[4]

Lignocaine, a local anesthetic, could promote healing of anal fissure by relieving internal anal sphincter spasm and pain. These mixtures are introduced on the finger or a short rectal bougie to ensure a through application over the desired part of the fissure[5] Nitric oxide donors such as glyceryl trinitrate [GTN] are known to cause a chemical sphincterotomy leading to healing of fissure[6]. In contrast with surgical sphincterotomy, “chemical sphincterotomy” with GTN is reversible and therefore unlikely to have long-term adverse effects on continence. However, the problem with temporary “chemical sphincterotomy” is that after treatment the anal pressure rises to pre-treatment levels, resulting in a high rate of recurrence.

Our findings show that most patients with acute anal fissure can be treated successfully with warm sitz baths combined with psyllium husk, the use of anaesthetic or anti-inflammatory ointments can thus be avoided.[4] In a randomized study by Gough and Lewis application of 2% lignocaine healed fissures in 43.6% of patients within one month [7]. Our study showed no convincing effect on relief of symptoms or on the healing rate of the fissure with lignocaine ointment.

Eighty percent of patients in this trial were successfully treated with Sitz bath as compared to 84% with GTN ointment and 40% with lignocaine. These figures are comparable with the international studies reporting healing rate of 65–90% [8,9,11-13]. It has been reported that higher doses than 0.2% GTN are not more effective [10]. Acute fissure heals spontaneously or with simple measures like high fibre diet, adequate water intake, & warm sitz baths. [14] Thus, the results were comparable in Group A and Group C (p value >0.05) proving that Sitz bath can be equally effective to GTN in treatment of an acute anal fissure. Lignocaine ointment however, has a lower efficacy in treatment of acute anal fissure.

V. Conclusion

Our study highlighted that avoiding constipation and sphincter spasm seems to be important measure of conservative treatment of acute anal fissure. Warm sitz baths are believed to relieve sphincter spasm and psyllium husk helps to produce bulky stools resulting in a physiological dilatation of the anal sphincter, thereby healing the fissures.

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