Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: www.saspublishers.com

OPEN ACCESS

General Surgery

Topical Nifedipine as a Treatment Modality in Acute and Chronic Fissure in ANO

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| **Received:** 05.03.2019 | **Accepted:** 15.03.2019 | **Published:** 30.03.2019
DOI: 10.36347/sjams.2019.v07i03.052

Abstract **Original Research Article**

Anal fissure, a proctologic disease is a common troublesome condition seen by surgeons. It is a Longitudinal tear in the Anoderm distal to the Dentate line associated with pain with or without bleeding per rectum. The treatment focus is on breaking the cycle of pain, spasm and ischemia. Surgical or chemical sphincterotomy (7) are the treatment options. Topical medications avoid surgical complications and also are cost effective. This study was undertaken to know the efficacy of Topical Nifedipine in both acute and chronic fissure in ano as a treatment modality. Pain was the commonest presenting complaint present in 100% of patients. Bleeding per rectum was more common in Chronic Fissure in Ano patients than in acute fissure in ano.The follow up was done at regular intervals which showed relief of pain in 86.67% of acute and 66.66% of chronic patients by 6 months. Bleeding was absent in 90% of acute and 73.33% of chronic patients. Spasm was relieved in 86.67% 0f acute and 70% of chronic patients. Achievement of symptom free period was earlier in acute group (by 6-8 weeks). Healing rate was 86.67% in acute group and 66.66% in chronic group. This study shows chemical sphincterotomy by Nifedipine avoids permanent sphincter division giving good symptom relief with higher healing rates and with lesser side effects. Hence, nifedipine with lignocaine locally is a very good conservative method to be used in the treatment of fissure in ano for both acute and chronic, if strict follow up is done.

Keywords: Anal fissure, Chemical sphincterotomy, Nifedipine.

INTRODUCTION

Anal fissure, a proctologic disease is a common troublesome condition seen by surgeons. It causes pain which is episodic, occurring with defecation and can persist for hours even later [1]. It is a longitudinal tear in the Anoderm distal to the dentate line associated with pain with or without bleeding per rectum [2]. In acute fissure there may be severe pain after defecation but intensity of pain is usually less with chronic fissure. Most frequently, it affects young adults [3] with a slight female preponderance [4]. Chronic fissure (>6weeks) may be associated with anal papilla or sentinel pile. The pathogenesis is still unclear. Accepted theory at present is increased resting sphincter tone or spasm of the sphincter leading to relative ischemia, which in turn results in internal sphincter hypertonia persistence followed by constipation and higher anal pressure even at rest [5,6].

The treatment focus is on breaking the cycle of pain, spasm and ischemia. Most of the acute fissures heal spontaneously or with conservative management. Surgical or chemical sphincterotomy [7] are the treatment options. Inspite of higher healing and symptomatic improvement, in view of postoperative complications, conservative approach was sought [8] which is also cost effective [9]. Topical medications proposed include calcium channel blockers (Diltiazem, Nifedipine), Nitric oxide donors (glyceryl trinitrate), Potassium channel openers (Minoxidil) and Bethanechol. This study was undertaken to know the efficacy of Topical Nifedipine in both acute and chronic fissure in ano as a treatment modality.

MATERIALS AND METHODS

This study is a hospital based observational Prospective study done in patients with fissure in ano for a period of 2 years presenting to surgery Outpatient Department at People's Education Society Institute of Medical Sciences and Research, Kuppam.

Study Population

Sample size was 30 patients of acute fissure and 30 patients of Chronic fissure in ano. All the

patients above 18 years presenting with fissure in ano were included in this study.

Exclusion Criteria

- Pregnant women
- Patients with Crohn's disease
- Associated Haemorrhoids
- Complications of Fissure like abscess
- Not giving consent

Ethical Committee clearance was taken by the institute

A detailed history of the presenting complaints, past history, dietary habits were noted. A detailed general physical and systemic examination was done including Per rectal examination. Relevant Routine Investigations were done.

Patients were classified as Acute if symptoms were less than 6 weeks duration and Chronic if symptoms were more than 6 weeks or/and if the base of the ulcer being formed by fibres of Internal sphincter or where there was presence of sentinel skin tag.

All the patients were treated with Topical nifedipine with lignocaine with proper instructions regarding methodology of application. All the patients were followed until 6 months. After the treatment with emphasis on parameters like symptom relief i.e pain, spasm, bleeding per rectum, healing of fissure and side effects of the treatment. Complete healing was defined as complete epithelisation of the ulcer with no pain.

All the data were collected and statistical analysis done using microsoft Excel data sheet entry and SPSS software.

RESULTS

A total of 60 cases of fissure in ano were included in our study (30 in acute group and 30 in chronic fissure group patients)

Our study noticed a wide age distribution with age groups between 21 to 50 years being affected more commonly as shown in the Figure 1 and Figure 2. In the chronic group, more commonly affected were between 30-50 years.

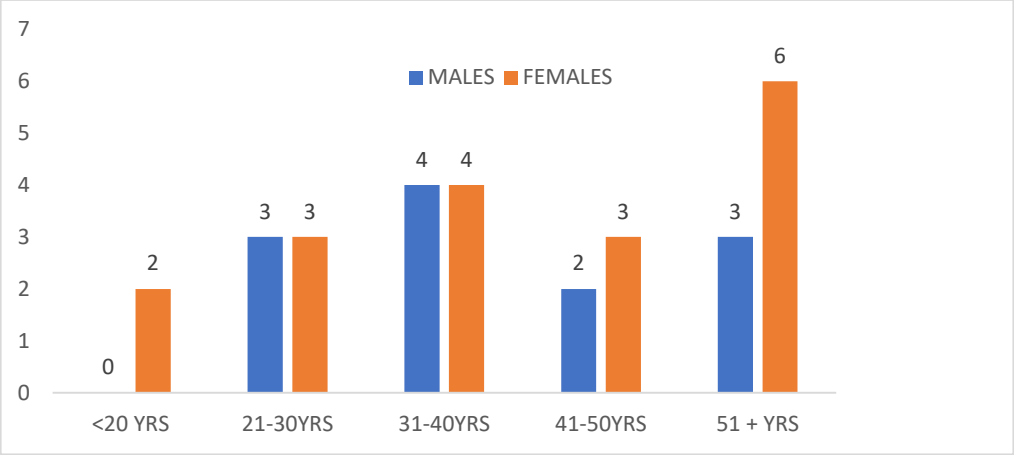

Fig-1: Age distibution in the acute group

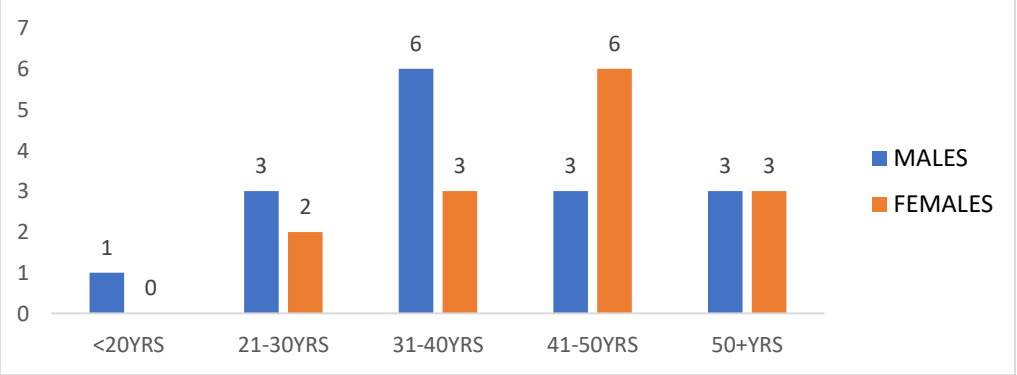

Fig-2: age distribution in chronic group

There was a slight female predominance in acute fissure in ano group with 60% being females but male predominance was seen in the chronic group with 53.33% being males.

The duration of the symptoms in the chronic fissure cases was more than 6 months in 80% of patients and more than 6 weeks upto 6 months was in 20% of patients.

The commonest presenting complaint was pain seen in all the patients in both the groups. Bleeding during defecation was seen in 55% of total patients. Bleeding was common symptom with acute fissure (63.33%) than chronic fissure patients (46.67%). The commonest site in both groups was posterior (90.9%).

A total of 93.33% of patients had spasm with 100% of patients with chronic fissure presenting with it. In acute fissure group 86.67% of patients had spasm as shown in Figure 3 below. Most common site of sentinel pile was posterior.

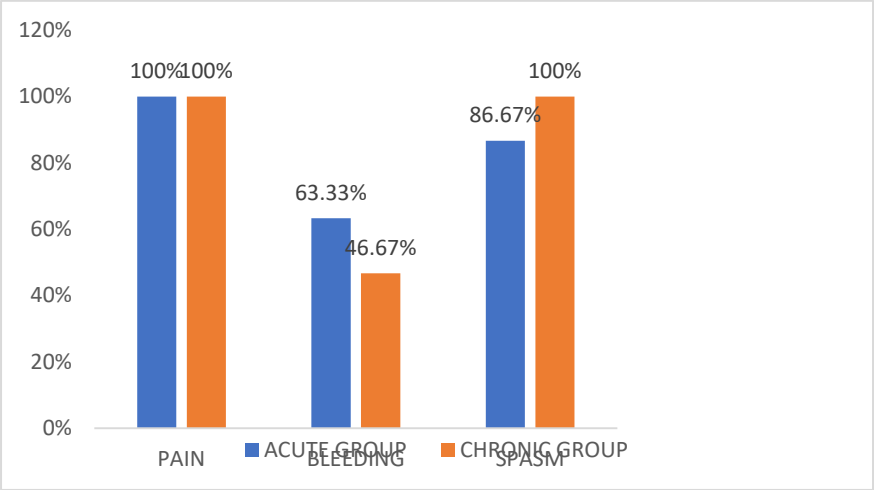

Fig-3: clinical features in acute and chronic groups

Table-1: Symptom relief at follow up

Symptom	Symptom relief in percentage (%)	
	Acute group	Chronic group
Pain	86.67%	66.66%
Bleeding	90%	73.33%
Spasm	86.67%	70%

The follow up was done at intervals and the improvement of symptoms noted as shown in table 1

Healing rate was 86.67% in acute fissure patients and 66.66% in chronic fissure patients. In our study, only 5% of patients had side effects that are mild headache.

DISCUSSION

Treatment aim in fissure in ano patients is symptom control with less disruption to mechanism of sphincter. Main factors in the pathogenesis are hard stool passage and increased tone of sphincter. Hence the focus of treatment is on sphincter pressure reduction.

In the present study, the age group distribution was more between 21-50 years with incidence higher between 30-50 years for chronic group [10]. This is similar to studies done by Schouten *et al*. Dinino *et al*. Christie *et al*. Richard *et al*. implying this age group has higher probability of chronic fissure development.

In our study, there was a sight female predominance in the acute group (60%) similar to Babu *et al*. [14]. Unlike this male predominance was seen in studies done by Giridhar CM *et al*. and kuiriss *et al*. [15, 16]. Male predominance was seen in chronic group which was similar to studies done by Schouten et al and Dinino *et al*. [10, 11]. But some studies done by Christie *et al*. and Richard *et al*. in the chronic fissure showed female predominance [12, 13]. This shows us there is varied predominance in the presentation, may be indicating that many patients may not be willing to present to hospital for help.

Majority of the patients under chronic group presented after 6 months (80%). Probably indicating the social stigma associated with anal disease.

Even in studies done by Christie *et al*. and Schouten *et al*. [13,11] the mean duration of symptoms was between 3.5 to 4.5 months indicating delayed presentation. The commonest site of anal fissure was posterior (90.9%) similar to other studies by Schouten et al and Lund *et al*. [11, 17].

In the present study, all the patients presented with pain (100%) similar to studies by Raj VK *et al*. [18] and Hananel N and Gordon PH where pain was seen in 93.33% and 90.8% of patients [19]. Bleeding was seen in nearly 55% of total acute and chronic patients with higher incidence in acute (63.33%) than chronic patients (46.67%). A study by Yucel *et al*. [20] and Ahmed *et al*. [21] showed 65% and 41% of patients having rectal bleeding and spasm or increased anal tone was seen in 93.3% of total patients with 100% of

chronic patients having it, which was similar to a study by Babu *et al*. [14]. Majority of the fissures heal with conservative management.

The follow up was done at regular intervals which showed relief of pain in 86.67% of acute and 66.66% of chronic patients by 6 months. Bleeding was absent in 90% of acute and 73.33% of chronic patients. Spasm was relieved in 86.67% 0f acute and 70% of chronic patients. Achievement of symptom free period was earlier in acute group (by 6-8 weeks). Healing rate was 86.67% in acute group and 66.66% in chronic group.

A study done by Antropoli C *et al*. [22] showed total remission in 95% of acute fissure patients and a study by Golfam *et al*. [24] showed a healing rate of 70% which was similar to our study. A study by Pearotti P *et al*. [23] showed healing of chronic fissure in 94.5% of Nifedipine treated patients. This higher healing rate in chronic fissure patients than our study may be attributed to changes noted in dietary habits and also compliance with treatment with regular follow up. Our study showed lower side effects with only 5% of patients having mild headache which is much lower than other topical agents like Glyceryl Trinitrate.

Limitations

Need for longer follow up to look for recurrence after stopping nifedipine.

CONCLUSION

This study shows chemical sphincterotomy by Nifedipine avoids permanent sphincter division giving good symptom relief with higher healing rates and with lesser side effects. Hence, nifedipine with lignocaine locally is a very good conservative method to be used in the treatment of fissure in ano for both acute and chronic, if strict follow up is done.

Acknowledgement

I thank my colleagues, teachers and my father for their constant support.

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