

TREATMENT OF CHRONIC FISSURE-IN-ANO WITH GLYCERYL TRINITRATE

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ABSTRACT

Objectives: To determine the role of 0.2% topical glyceryl trinitrate in the treatment for chronic anal fissure.

Material and Methods: This descriptive study was carried out in Khyber Teaching Hospital, Peshawar from January 2004 to September 2007. Patients with a 6 weeks history of primary chronic anal fissure were included in the study. All patients were diagnosed on the basis of history and clinical examination. After advising application of glyceryl trinitrate 0.2% on the anal verge, patients were followed on 10th, 20th, 40th day and 6 months.

Results: A total of 73, including 58 (79.4%) male and 15 (20.5%) female patients with mean age of 39 years were included. Complete resolution was observed in 42 (57.5%) patients while 22 (30.1%) cases had partial response, 5 (6.8%) patients had no response. In the failure group 4 patients underwent surgical intervention.

Conclusion: Glyceryl trinitrate (0.2%) cream is an effective treatment for chronic anal fissure, having unnecessary surgery.

Key words: Fissure, sphincterotomy, Glyceryl Trinitrate Cream (GTN), constipation.

INTRODUCTION

Anal fissure is defined as a painful longitudinal or elliptical ulcer in the anoderm extending from below the dentate line to the anal verge. It is a common condition in which the patient usually presents with severe pain and bleeding per rectum. Laser Doppler flowmetry and postmortem angiographic studies have shown a relatively poorly perfused area at the posterior commissure where most commonly fissure occurs¹. The pain produced by anal fissure leads to considerable morbidity and reduction in the quality of life^{2,3}.

Treatment of anal fissure has been based on the principle of sphincter relaxation, which reduces spasm, increases blood supply, breaks the vicious cycle of pain, spasm and ischemia and allows healing to take place.

Anal dilation and lateral sphincterotomy are the two sphincter relaxing procedure but they carry a small but definite risk of incontinence^{4,5,6}. Nitric oxide has recently been identified as the chemical messenger of the intrinsic non adrenergic, non cholinergic pathway leading to relaxation of internal anal sphincter if

applied locally. It also decreases the resting anal pressure and increases blood flow. This is known as "chemical sphincterotomy". It can also be achieved by iso-sorbide dinitrate, calcium channel blockers like nifedipine and diltiazem and more recently botulinum toxin^{7,8,9,10}.

This study was carried out to describe the experience of treating patients of chronic anal fissure with 0.2% GTN ointment.

MATERIAL AND METHODS

This descriptive observational study was conducted in surgical "D" unit of Khyber Teaching Hospital, Peshawar from January 2004 to September 2007. The inclusion criteria was all adult patients with primary chronic anal fissures. The exclusion criteria was, patients with migraine, angina pectoris and secondary anal fissure (due to chronic disease, ulcerative colitis, or malignancy) and patients with acute anal fissures.

A detailed history was obtained from all patients of chronic anal fissure presenting to the out patient department and the diagnosis was established on the basis of clinical examination. An informed consent was taken from all patients. After establishing the diagnosis of chronic anal fissure (>3 months) they were asked to apply glyceryl trinitrate 0.2% cream at the anal verge with a gloved finger twice daily. The bio-data, clinical features, the effects of treatment and complications were recorded on a Performa.

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The patients were called for follow up visits at 10, 20, 40 days and then at 6 months time. During these visits, the patients were assessed for improvement in symptoms, sign of bleeding and evidence of recurrence. The patients were asked to describe the pain relief on a visual analogue scale and were also asked about the side effect of treatment if any. The first 3 follow up visits were used to assess the success of treatment and last visit was used for evidence of recurrence of disease.

RESULTS

A total of 73 patients were included in this study with 58 (79.4%) male and 15 (20.5%) female patients. Their age ranged from 26-54 years with mean age of 39 years + 4 SD. The patients main clinical features are shown in Table 1.

In 67 (91.7%) cases the fissure was posterior and 6 (8.2%) patients had anterior anal fissure in which three patients were female. Four female patients had recent history of childbirth while 13 (17.8%) patients had past history of proctological surgery. The effects of topical GTN treatment are shown in Table 2.

Headache was the only complication noted in 16 patients and due to which one patient discontinued the treatment. Four patients out of the 5 failure group were treated with lateral sphincterotomy and the rest two patients opted for continuation of the GTN treatment. The incontinence was reported in none.

DISCUSSION

The role of chemical sphincterotomy is finding a definite place in the management of anal fissure that fails to heal within six weeks despite straight forward

**Table 1: Presenting Complaints of the Patients
n = 73**

| Features | Number of patients | |
|----------------------|--------------------|-----------|
| | Male | Female |
| Painful defecation | 58 (100%) | 15 (100%) |
| Bleeding PR | 52 (89.6%) | 7 (46.6%) |
| Constipation | 37 (63.7%) | 4 (26.6%) |
| Visible anal fissure | 58 (100%) | 15 (100%) |
| Visible anal tag | 24 (41.3%) | 9 (60%) |

Table 2: Effects of Topical GTN on Clinical Presentation

| Feature | At admission | 10 days | 20 days | 40 days | 6 months |
|--------------------|--------------|-----------|------------|-----------|-----------|
| Painful defecation | 73 (100%) | 23(31.5%) | 11 (15%) | 53(72.6%) | 9 (12.3%) |
| Bleeding PR | 59 (80.8%) | 21(28.7%) | 15 (20.5%) | 5 (6.8%) | 9 (12.3%) |
| Constipation | 41 (56.2%) | 08(10.9%) | 0 (0%) | 0 (0%) | 4 (5.4%) |
| Visible fissure | 37 (50.7%) | 63(86.3%) | 32 (43.8%) | 16(21.9%) | 7 (9.5%) |
| Visible anal tag | 33 (45.2%) | 26(35.6%) | 25 (34.2%) | 25(34.2%) | 30 (41%) |

dietary and other conservative measures (chronic anal fissure). Anal fissure is a puzzling condition. The actual cause of anal fissure, the reasons for its failure to heal, its predilection for posterior position and the paucity of granulation fissure, are perplexing features.

Recent clinical trials establish the clinical efficacy of 0.2% GTN ointment in the treatment of anal fissure. The published data of a high cure rate of 70-80% in various studies are encouraging^{11,12,13}.

There were more male to female patients in our study which may be due to the lack of awareness, social issues and limited access of females to the health facilities. Similar findings are noted in other studies and the range of our study is also comparable with other international studies¹⁴. The major complaint noted in this study was painful defecation but other complaints like bleeding per rectum, constipation and perineal discomfort were also present in some patients.

Majority of the work done on this subject also indicates that painful defecation is the main presenting complaint ranging from 70-93%^{15,16,17} as in our study it was in all cases. In the current study 67 (91.7%) patients were found to have anal fissure at 6 o'clock position while only 6 cases (8.3%) had anterior fissure. This finding is noted in majority of the studies^{18,19,20,21}.

The result of this trial shows that 42 (57.2%) patients had complete resolution of complaints, 22 (30.1%) cases showed partial response initially but later on they improved completely while 5 (6.8%) patients had no response to the topical application of GTN cream while in 4 (5.4%) patients there was recurrence of symptoms after initial encouraging response. These results are comparable to some studies but other studies are in contrary to this study^{11,15,16,22,23}.

One study from Nottingham²⁴ reported improvement in 18 out of 21 patients treated with 0.2% GTN ointment. None of our patients complained about incontinence of flatus or feaces.

CONCLUSION

Topical 0.2% GTN ointment is a useful pharmacological treatment in all patients with chronic anal fissure.

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