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An observational study comparing and non-surgical treatment with surgical treatment for chronic anal fissures

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ABSTRACT

Background: Chronic anal fissure is a common benign anorectal condition that causes significant morbidity. Symptoms consist primarily of pain and bleeding during defecation. Fissures are predominantly located in the posterior midline, but 25% of women and 8% of men have anterior fissures. **Aims and Objectives:** The aim of the study is to determine the outcome of various nonsurgical therapy for chronic anal fissure and comparison with the outcome of surgical treatment. **Materials and Methods:** This study was a non-randomized and observational study. All patients referred to the department of general surgery between December 2012 and November 2014 for a chronic anal fissure were included in the study, above the age of 12 years, and diagnosed to have anal fissure (Both Acute and Chronic) were included in the study. **Results:** Seventy-nine patients (91.9%) were having symptoms of pain; this pain was persistent for hours after defecation in 67 (78%) patients. Seventy-one (82.6%) patients complained of at least one episode of bleeding per Anum, other symptoms were perianal lump (10.5%), perianal itching (23.3%), and perianal discharge (30.2%). The examination findings of these patients revealed that 81 patients (94%) had developed sentinelpiles subsequently and anal fissure with visible fibers of underlying muscle were seen in 9 (10.5%) patients. **Conclusion:** Chronic anal fissures can be simply and effectively treated medically without the risk of incontinence associated with sphincterotomy. Topical nifedipine and botulinum toxin injections are an excellent combination, associated with a low recurrence rate and minimal side effects.

Key words: Anal fissure; Anal sphincterotomy; Botulinum; Fissure in ano

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INTRODUCTION

Chronic anal fissure is a common benign anorectal condition that causes significant morbidity. Symptoms consist primarily of pain and bleeding during defecation. Fissures are predominantly located in the posterior midline, but 25% of women and 8% of men have anterior fissures Juan et al.,[1] It is generally accepted that the chronicity of anal fissures is the result of poor anodermal perfusion, especially at the posterior commissure. Local ischemia is likely a function of elevated resting anal pressures commonly associated with fissures, acting on anoderm that has an inherent poor vascular supply. Treatments thus aim to lower resting sphincter pressures to increase perfusion and to promote wound healing. Chronic anal fissures have traditionally been managed with lateral internal sphincterotomy/anal dilatation. Sphincterotomy, however, has been associated with incontinence in up to 35% of patients Khubchandani and Reed.[2] Furthermore, this does not take into account normal weakening of the sphincter with age as well as the possibility of the future anorectal surgery or obstetrical trauma.

The risk of incontinence, therefore, is life long, dilatation of the anal canal has also been associated with sphincteric tears and subsequent incontinence. Controlled pneumatic

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dilatation, however, is a variation to the technique that may reduce the risk of sphincter injury.

Aims and objectives

The aim of the study is to determine the outcome of various non-surgical therapy for chronic anal fissure and comparison with the outcome of surgical treatment.

The primary objective of the study is to determine the suitable treatment option for a patient suffering from chronic anal fissure which would have better pain relief and minimal morbidity. The secondary objective would be to determine the efficacy of various non-surgical treatment options and comparing it with surgical sphincterotomy in terms of degree of pain relief, recurrence of the disease following complete relief, side effects of various modalities, patient compliance, duration of the treatment, and cost-effectiveness of the therapy. *Other objectives* would be to determine the morbidity associated with surgical sphincterotomy, length of hospital stay, and complications associated with it.

More recently, less invasive strategies have been adopted to induce sphincter relaxation. Topical agents including nitroglycerine, diltiazem hydrochloride, or nifedipine reduce internal sphincter pressures, resulting in a temporary or "medical sphincterotomy" until the fissure heals. Botulinum toxin injected into the internal sphincter also causes reversible sphincterotomy and is gaining increasing popularity for the treatment of anal fissures.

MATERIALS AND METHODS

This study was a non-randomized and observational study. All patients attending or referred to the surgical outpatient department were included in the study and were made to understand about advantages and disadvantages of all the therapeutic options available for chronic anal fissure, both medical and surgical in detail. *Ethical Clearance*: Proper ethics committee review and due clearance was obtained before conduct of this study from the Institution dated August 05, 2012.

Study area and population

All patients attending and referred to the department of general surgery between December 2012 and November 2014 for chronic anal fissure were included in the study.

Inclusion and exclusion criteria

All the patients who attended in the surgical out-patient department above the age of 12 years and diagnosed to have anal fissure (Both Acute and Chronic) were included in the study. We defined chronic anal fissure as an ulcer with indurated edges and with exposure of the horizontal fibers of the internal anal sphincter. Typical symptoms were present for at least 2 months. Patients with cardiac comorbidities, migraine, Crohn's disease, HIV, malignant disease, tubercular ulcer, pregnant mothers and those patients in whom chemical sphincterotomy is contraindicated were excluded from the study.

After taking proper consent, the patients were treated by medical management for 4–8 weeks as outpatient department basis and those patients who did not respond to medical management were considered for surgical treatment. All the patients would be advised for Seitz bath with 10% cetrimide solution thrice daily. Topical nifedipine or glyceryl trinitrate, Laxatives 3 tsf HS for 4–8 weeks, was prescribed and the patients were followed, every 2 weeks regarding the subjective and clinical improvement.

Data were extracted from patients and charted in relation to age, sex, clinic visits, treatments and procedures, healing of fissures, complications, recurrence, and incontinence.

At the first clinic visit, all patients received an information pamphlet on chronic anal fissures and fiber supplementation. If healing had occurred after an initial 8-week period, the patients were followed up in the outpatient clinic at 3, 6, and 12 months, or sooner if recurrent symptoms developed. Treatment failures, or patients who were unable to tolerate treatment with the ointment, were offered surgical sphincterotomy. Those patients who did not respond to 8 weeks of medical management were considered for surgical management.

Plan for analysis of the data

Statistical analysis was done by "one-way analysis of variance" to compare the continuous variables in the two groups. The results of the two active treatment groups were compared with one another. Binary outcome variables such as healing were analyzed using Fisher's exact test to compare the two active treatments to one another. A value of $p<0.05$ was considered significant.

RESULTS

There were 86 patients in our study. The mean age (mean±SD) of patients was 43.57±13.30 years with range 23–75 years and the median age was 39 years. Gupta et al.,[3] reported 46% in 31–40 years age group and also noticed that confounding effects of age, gender, body weight, and height were not significant; 58.1% of patients were having a history of hard stool preceding the occurrence of anal fissure while 11% of patients were having a history of loose stool or diarrhea. Only six patients had underwent anal surgery which could be the cause of anal fissure.

Anal fissure has been attributed to constipation during straining at stool; theoretically, the passage of hard fecal bolus through are relatively tight anal sphincter is thought to crack the anal canal. Seventy-nine patients (91.9%) were having symptoms of pain, this pain was persistent for hours after defecation in 67 (78%) patients. Seventy-one (82.6%) patients complained of at least one episode of bleeding per Anum, other symptoms were perianal lump (10.5%), perianal itching (23.3%), and perianal discharge (30.2%). Individuals with long standing anal fissure will present with different symptom complex. They may complain of a lump representing sentinel tag, drainage of discharge, pruritus, or combination of several symptoms along with pain and bleeding per Anum.

The examination findings of these patients revealed that 81 patients (94%) had developed sentinel piles subsequently. Anal fissure with visible fibers of underlying muscle was seen in 9 (10.5%) patients. We did not perform digital rectal examination in patients with anal fissure as it is unnecessary and uncomfortable for the patient in first visit. Careful inspection is sufficient for the diagnosis. Chronic anal fissure usually has sentinel pile and fissure specially in posterior midline. All the observational findings or results were recorded in tabular form (Table 1).

Table 1: Distribution of anal surgery, pain during defecation, bleeding per rectum, persistent pain hours after defecation, perianal lump, itching, and sentinel piles present

Recorded data heads	Frequency	Percentage
Anal surgery		
Yes	6	7.0
No	80	93.0
Total	86	100.0
Pain during defecation		
Yes	79	91.9
No	7	8.1
Total	86	100.0
Bleeding per rectum		
Yes	71	82.6
No	15	17.4
Total	86	100.0
Persistent pain hours after defecation		
Yes	67	77.9
No	19	22.1
Total	86	100.0
Perianal lump		
Yes	9	10.5
No	77	89.5
Total	86	100.0
Itching		
Yes	20	23.3
No	66	76.7
Total	86	100.0
Sentinel piles present		
Yes	81	94.2
No	5	5.8
Total	86	100.0

DISCUSSION

This study demonstrates that fissure symptoms such as pain or irritation show a negative impact on quality of life on the EQ-5D as measured before treatment, but successful treatment of the fissures lead to pain diminution and beneficially affects health-related quality of life.

It has been suggested that chronic anal fissures have an ischemic origin because of poor blood supply and that they are associated with increased pressure of the internal sphincter.

Reduced anal sphincter pressure has been shown to increase blood flow, and it seems likely that this improved perfusion of the anal mucosa probably facilitates fissure healing. GTN a nitric oxidedonor, nifedipine, and diltiazem are calcium channel blocker and relax the internal anal sphinctervia different pathways. In keeping with earlier reports, topical 0.3% nifedipine, 0.2% GTN and 2% diltiazem gel in this study provided pain relief, with a significant reduction in pain after 8 weeks and preceded the significant healing rate of chronic anal fissure observed at 6 week of treatment. The patients with chronic anal fissures often report post-defecatory pain, bleeding and irritation, and the impact of such fissure symptoms on the quality of life needs to be evaluated.

Griffin et al.,[4] reported that pain seemed to affect all of the SF-36 subscales. In our study, the patients were severely affected by the disease when evaluated by EQ-5D questionnaires. The disease affects all the five dimensions of healthy living in these patients. These results seem to indicate that symptom evaluation of pain or irritation may help the staff to support the patients' well-being in the outpatient clinic. We were also interested in determining the effect of anal fissure on the physical, mental, and emotional aspects of a patient's life before and after medical intervention. Our study showed that successful treatment can lead to improvements not only in bodily pain, but also in self-care, mobility, mental health, and general health.

In our study, we have seen those patients compliant to conservative management benefit on taking any of the chemical which relaxes the anal sphincter. However, some patients do fail to respond and present with disease recurrence. Although a very small number of patients underwent surgery in this study, the benefits from the surgery were appreciable. Post-operative impairment of continence is not seen. Lewis et al.,[5] found some degree of incontinence in 17% of patients. In their study, in two-third of cases, it was only a temporary problem. Khubchandani and Reed[2] reported post-operative incontinence following lateral sphincterotomy. In our

study, we did not find any post-operative incontinence, although the number of surgeries performed was very less when compared to other studies. LSIS is a better procedure as compared to anal dilatation as dilatation is associated with uncontrolled tear of internal sphincter muscle which is a cause of higher incidence of soiling and incontinence in such cases.

In our study, the healing rate was 100% in all the patient who underwent surgery and postoperative quality of life is improved in all the patients. Littlejohn and Newstead[6] reported 99% healing rates with incontinence rate of 1.4% and recurrence rate of 1.4%. Nyam and Pemberton[7] showed a success rate of 95% but with recurrence rate of 8% and incontinence in 15%.

Limitations of the study

The present study is limited by a small sample size and a bigger size coupled with a randomization would yield a more confirmative study result.

CONCLUSION

Topical 2% diltiazem, 0.2% GTN, and 0.3% nifedipine appear to be a well-tolerated method of chemical sphincterotomy and successful treatment of chronic anal fissure leads to improvement in health-related quality of life and reduces the hospital burden and cost of treatment, but the key to success of the treatment lies in patient motivation to earn patient compliance. Long-term follow-up is needed to assess the risk of recurrent fissure and quality of life after initial healing with chemical sphincterotomy. Recurrent anal fissures or fissures not responding to chemical sphincterotomy can very well be managed with lateral anal sphincterotomy with benefits of higher healing rates and good improvement in quality of life.

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