

Original Research Article

Effectiveness of conservative management of acute fissure in ano: a prospective clinical study of 165 patients

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ABSTRACT

Background: Fissure-in-ano is a common yet troublesome condition; if acute, the severity of patient discomfort and extent of disability far exceed that would be expected from a seemingly trivial lesion. The present study was carried out to study the effectiveness of conservative management in symptom relief in acute fissure in ano.

Methods: The study was conducted in 165 patients with acute fissure in ano attending Surgery OPD and/or admitted in surgical wards of Sanjay Gandhi Memorial Hospital associated with Shyam Shah Medical College, Rewa during the period from 1st August 2015 to 31st July 2016. It was a prospective clinical study. All the study subjects underwent extensive clinical examination and were prescribed conservative treatment regime. Follow up was done at the end of 2 weeks, 4 weeks and 6 weeks and the data was analyzed. 165 patients diagnosed as having acute fissure in ano. The outcome was assessed based on the following parameters; symptomatic relief, pain relief based on visual analogue scale and healing of ulcer.

Results: Most of the patients were young adults with a slight female dominance. Pain during defecation and bleeding per rectum were the major presenting complaints. 73.94% of patients achieved symptom relief within 2 weeks of conservative treatment. At 6 weeks follow up after giving conservative line of management, 97.58% achieved symptom relief with healing of ulcer. Mean pain score was reduced from 9.5 ± 0.71 at the start of therapy to 1.33 ± 0.69 at the end of 6 weeks of conservative therapy.

Conclusions: Acute fissure in ano can be easily cured with systematic usage of conservative treatment regime. A proper follow up along with patient education can help to achieve good remission and avoid unnecessary surgical intervention.

Keywords: Acute fissure in ano, Dietary fibre, Diltiazem ointment, Sitz bath

INTRODUCTION

Proctologic diseases are as old as mankind itself and they include a diverse group of pathologic disorders that generate significant patient discomfort. Anal fissure or fissure-in-ano is a common yet troublesome condition; if acute, the severity of patient discomfort and extent of disability far exceed that would be expected from a seemingly trivial lesion. Anal fissure is usually noticed by the patient as bright red anal bleeding on the toilet paper. If acute, there may be severe periodic pain after

defecation but with chronic fissure intensity of pain is often less. It is diagnosed by the typical history of pain, bleeding, discharge and clinical findings.¹ Anal fissure occurs most frequently in young adults.² There is a slight female preponderance.³

Chronic fissures may be associated with a sentinel pile or anal papilla. The great majority of fissures occur in the posterior midline (90%), although anterior midline fissures are seen in 10-20% of affected women and 1-10% of affected men.⁴

Hypertonsity of the internal anal sphincter, mucosal ischemia along the posterior midline, chronic constipation and injury from hard stools are the factors causing development of fissure in ano. Treatment of anal fissure focuses on breaking the cycle of pain, spasm, and ischemia. First-line therapy to minimize anal trauma includes bulk agents, stool softeners, and warm sitz baths.⁵ Those who doesn't achieve a relief from first line conservative management or those who have a recurrence, second line therapy is advocated with botulinum toxin injections or the topical application of ointments such as calcium blockers (nifedipine, diltiazem), or nitric oxide donors (glyceryl trinitrate). Surgical management is instituted in treatment resistant cases. Surgical treatment options are Lords dilatation, Lateral internal Sphincterotomy and fissurectomy. Treatment of anal fissure by sphincterotomy is not new and was first suggested by Boyer.⁶ Since the introduction of lateral internal sphincterotomy by Eisenhammer in 1951, this procedure has been used with increasing frequency and is now considered the surgical treatment of choice for anal fissure.⁷

METHODS

The present study was carried out in 165 patients with acute fissure in ano attending Surgery OPD and/or admitted in surgical wards of Sanjay Gandhi Memorial Hospital associated with Shyam Shah Medical College, Rewa during the period from 1st August 2015 to 31st July 2016. The patients who had fissure in ano and attended surgery OPD and/or admitted in surgical wards were the study subjects.

A detailed history of presenting complaints was recorded with special reference to pain during defecation, bleeding per rectum, swelling in anal region, constipation, diarrhea and perianal itching. The severity of pain was assessed using a visual analogue scale (VAS) ranging from 1-10. In recording past history, the patients were particularly asked regarding previous similar episode and treatment if any. The dietary habits of the patients were noted.

A detailed general and systemic examination was done. Rectal examination was done with gloved index finger gently after positioning the patient in left lateral position and applying lignocaine gel. Bleeding per rectum, site of the fissure, condition of the fissure, presence of sentinel pile, state of anal sphincter and presence of hypertrophied anal papilla were noted.

Patients were classified as acute and chronic fissure in ano based on the following criteria.

Acute Fissure in Ano: Fissure in ano with symptoms less than 6 weeks duration.

Chronic Fissure in ano: Fissure in ano with symptoms more than 6 weeks and/or as one where previous conservative or medical treatment has failed or where the

base of the ulcer is formed by fibers of internal sphincter or where there is a sentinel skin tag.

Patients diagnosed as acute fissure in ano were treated conservatively with Sitz bath, high fiber diet, laxative lactulose syrup two teaspoons at bed time and local anesthetic lignocaine gel for local application. Those patients who did not achieve symptom relief with first line management after 2 weeks, medical therapy with 2% Diltiazem gel for local application was advised. Patients were instructed to apply the gel at least 1.5 cm to 2 cm into the anus twice daily for 6 consecutive weeks. Patients were advised to wash their hands before and after use of gel.

All the patients were followed up on 2 weeks, 4 weeks and 6 weeks. Parameters like relief of symptoms, pain relief based on linear visual analogue scale, bleeding per rectum and healing of fissure were evaluated. All the data were collected using a detailed proforma and statistical analysis was done.

RESULTS

Most of the patients belonged to the age group 21-40 (66.1%) with a slight female preponderance.

All the patients had pain during defecation as their presenting symptom and of whom 81.2% of patients had history of constipation. Bleeding per rectum was seen in 73.33% of patients.

73.94% of patients achieved symptom relief within 2 weeks just by using stool softeners, sitz bath and lignocaine ointment. Diltiazem (4%) ointment was added to the treatment regime of 26% patients after two weeks and at 6 weeks follow up after giving conservative line of management, 97.58% achieved symptom relief. Mean pain score was reduced from 9.5±0.71 at the start of therapy to 1.33±0.69 at the end of 6 weeks of conservative therapy. 80% of patients achieved ulcer healing at 4 weeks follow up.

DISCUSSION

Fissure in ano is a disease of young adults. Jensen SL studied 90 patients with acute fissure in ano and reported a mean age of 45.⁸ Raj VK and Kadam MM has observed that 36.67% of acute fissure in ano and 43.33% of chronic fissure in ano cases occurs in the age group 21-30.⁹ We had similar results in the present study with maximum number of cases of acute fissure in ano belonged to 20 to 40 age group.

There were two cases of acute fissure in ano in less than 10 age group. The lax anal sphincter is the major reason for rarity of fissure in ano among persons above the age of 60 years (Table 1).

Table 1: Distribution of patients according to age.

Age group in years	No. of patients
1-10	2 (1.2%)
11-20	30 (18.2%)
21-30	58 (35.2%)
31-40	51 (30.9%)
41-50	18 (10.9%)
51-60	4 (2.4%)
61-70	2 (1.2%)
>71	0
Grand total	165 (100%)

Table 2: Distribution of symptoms.

Symptoms	No of patients N=165	Percentage (%)
Pain during defecation	165	100
Bleeding per rectum	142	86.1
Constipation	128	77.6
Hard stools	134	81.2
Perianal itching	22	13.3
Diarrhea	10	6.1

Jensen SL reported an equal incidence of male and female patients while studying 96 cases of acute fissure in ano.⁸ Giridhar CM et al has observed that 56.6% male patients and 43.3% female patients had fissure in ano.¹⁰ According to kuir SS et al, while studying 100 patients with fissure in ano, 56 % of patients were males.¹¹ In the present study there is a slight female predominance with 53% of patients being females.

Diet plays an important role in development of fissure in ano. Low fiber diet can predispose to formation of hard stools hence fissure. Jensen SL in his work “Diet and other risk factors for fissure-in-ano”, has stated that anal fissures occur due to inappropriate diet and a diet modification can reduce the incidence of the disease.¹² Gupta PJ in his work reported that intake of spicy food like hot chili, pepper etc. can aggravate symptoms in patients with acute fissure in ano.^{13,22}

In the study conducted by Chaudhary A et al, it was found that 98.6% of patients consumed mixed diet and 1.4% was purely vegetarians.¹⁴ Raj VK and Kadam MM also reported an increased incidence of fissure in ano among those consuming non vegetarian diet.⁹

Among the present study subjects, majority of the patients (63.60%) were consuming mixed diet. Only 36.40% patients were pure vegetarians. This trend shows that the lack of dietary fiber and increased spiciness in non-vegetarian diet can predispose to development of fissure in ano.

Intense pain during and after defecation with or without bleeding per rectum are the major symptoms with which a patient of acute fissure in ano usually presents to a

surgeon. The presenting complaints documented in the study by Khubchandani and Reed were pain (23.5%), bleeding (76.2%), pruritis ani (34.9%) and an anal lump (24.3%) and burning sensation in the anal region (33%).¹⁵ The work by Hananel N and Gordon PH, reported that dominant presenting symptoms were pain in 90.8% and bleeding in 71.4% patients.³

Lock and Thombson et al had found that pain and spasm to be present in 69% of patients.¹⁶ According to Lund JN, Scholefield JH chronic constipation was associated with only 25% of patients.¹⁷ In the study by Jensen et al, 67% of patients complained of constipation.⁸ According to the study by Yucel T et al, 35 (87.5%) the patients presented with perianal pain, 26 patients (65%) presented with rectal hemorrhage and in 20 (50%) the patients complained of constipation.¹⁸

Ahmed HM observed bleeding per rectum in 41% of patients and constipation in 54%.¹⁹ Pruritis was seen in 50% of patients with fissure in ano. The study by Raj VK has observed pain during defecation as the chief presenting complaint in patients with acute fissure in ano (93.33%).⁹

In the present study, the most common presentation of acute fissure in ano was pain during defecation; 165 (100%) cases, followed by bleeding per rectum; 142 (86.1%) cases. Constipation was present in 128 (77.6%) patients with acute fissure in ano. 81.2% of patients complained of passing hard stools. Perianal itching was the presenting symptom in 22 (13.3%) patients. Diarrhea was associated with 10 (6.1%) patients in acute fissure in ano group (Table 2).

Lock and Thombson et al, reported that tenderness and increased anal tone is present in 69% of patients.¹⁷ While in the present study all the patients with acute fissure in ano had tenderness and increased anal tone on per rectal examination. Bleeding per rectum was found in 121 (73.33%) patients with acute fissure in ano (Table 3).

Table 3: Distribution according to clinical Signs in acute fissure in ano.

Signs	No. of patients (N=165)	Percentage
Increased anal tone	165	100%
Bleeding PR	121	73.33%
Tenderness	165	100%
Anterior fissure	27	16.36
Posterior fissure	138	83.64

The majority of acute anal fissures can be managed medically. In fact, almost half will heal with conservative therapy alone using warm baths and increased fiber intake.^{20,21} Increasing dietary fiber and water intake should be coupled with fiber supplementation.⁸ The study by Jensen SL, shows that in patients with first episode of

acute posterior anal fissure simple measures such as warm sitz baths combined with a dietary intake of unprocessed bran may relieve symptoms significantly better than the application of lignocaine or hydrocortisone ointment to the anal canal.⁸ Jensen SL in 1987 observed that high-fiber residue diet can heal as well as prevent recurrence of acute anal fissure. In the study by McDonald P et al, at 6 weeks 38.7% of patients with acute fissure in ano who were resistant to medical management were given surgical therapy.²² The 2014 American College of Gastroenterology clinical guideline on the management of benign anorectal disorders has recommended acute anal fissure should be treated non-operatively in the initial phase. Gupta P observed that almost half of all patients with acute anal fissure will heal with supportive measures, i.e., sitz baths, psyllium fiber, and bulking agents, with or without the addition of topical anesthetics or anti-inflammatory ointment.²³ All the patients enrolled in the present study given treatment with high fiber diet and fiber rich food supplements, laxative syrup and lignocaine local anesthetic gel for local application. 43 (26%) patients in whom there was no relief of symptoms after 2 weeks of conservative management, were supplemented with Diltiazem (4%) ointment for local application.

With proper follow up, a case of acute fissure in ano gets symptom relief within 2 to 4 weeks of medical conservative line of management. Randomized study by Gough and Lewis observed that application of 2% lignocaine healed posterior fissures in 43.6% of patients within one month.²⁴

In the study by Goligher JC majority of acute fissures healed within 2 weeks with conservative therapy.²⁵ According to Jensen SL after three weeks, symptomatic relief was the same regardless of the treatment regimen.⁸ Antripoli C et al, total remission from acute anal fissure was achieved after 21 days of therapy in 95 percent of treated patients.²⁶ Recent work by Gagliardi and colleagues demonstrated that 58% of patients achieved complete relief of symptoms in 6 weeks.²⁷ In the present study most of the patients (44.24%) with acute fissure in ano took treatment for duration of 2 weeks to achieve remission of symptoms. 59 (35.76%) patients took treatment for 2 to 4 weeks duration. The rest of the 33 patients had to take treatment for 4 to 6 weeks (Table 4).

Table 4: Distribution of relief of symptoms with conservative management in acute fissure in ano.

Relief of symptoms	2 weeks	4 weeks	6 weeks
Present	122 (73.94%)	152 (92.12%)	161 (97.58%)
Absent	43 (26.06%)	13 (7.88%)	4 (2.42%)
Total	165	165	165

According to literature, reduction in pain generally occurs within 2 weeks after the beginning of therapy in acute fissure in ano. The study by Jensen SL, 100% of patients

receiving conservative treatment has shown complete pain relief within 3 weeks in acute fissure in ano.⁸ According to Antripoli C et al, total pain relief was achieved after 21 days of therapy in 87 percent of treated patients.²⁶ Gagliardi and colleagues demonstrated that pain during defecation, measured by means of the visual analogue scale, improves significantly after 2, 4, and 6 weeks of treatment.²⁷ In the study by Golfam F et al, pain relief was statistically significant at 4th and 6th weeks.²⁸ We have achieved mean pain score reduction from 9.5 to 4.09 within 2 weeks of initiation of treatment. The mean pain score was 1.91 after 4 weeks and 1.33 after 6 weeks in the present work (Figure 1).

Table 5: Fiber rich foods.

Food	Serving size	Fiber content (g)
Apple	1 medium	3.3
Orange	1 medium	3
Lentils	1 cup, cooked	15.6
Black beans	1 cup	15
Bread whole grain	1 slice	2-5
Oat meal	1 cup	4
Peas	1 cup	8.8
Yam	1 cup, cooked	5.3
Spinach	1 cup, cooked	4.3
Corn	1 cup	4

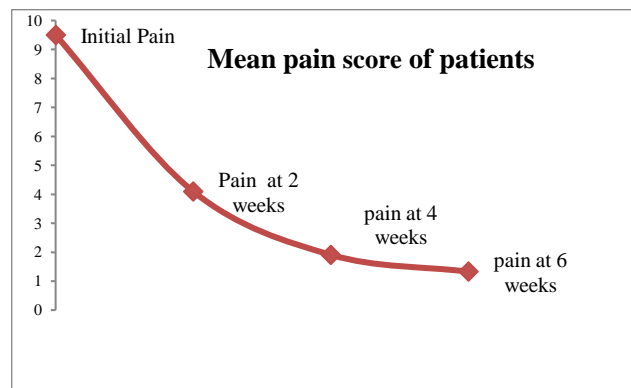


Figure 1: Distribution of pain relief in acute fissure in ano.

Ulcer healing occurs within 6 weeks with treatment in acute fissure in ano. In his study, Shub et al, found that 44% of fissure healed within 4 weeks.²⁹ According to Goligher JC acute fissures are said to heal spontaneously within one to two weeks.²⁵ Gough and Lewis observed that healing of 43-6% of patients with acute fissure occurred within one month of treatment.²⁴ In the study Antripoli C et al, total remission from acute anal fissure was observed in 95% of patients after 21 days of therapy.²⁶ In other studies reported by Merenstein and Rosenbaum and Slawson, remarkable improvement in healing was observed when 1.5% lidocaine and 0.3% nifedipine were applied twice daily for 6 weeks.^{30,31} Golfam F et al, has observed that after four weeks treatment, fissure healed in 42 (70%) patients, three

patients who reported no pain had no complete healing on examination.²⁸ Two patients with persistent ulcer, after two weeks of additional course were healed. In this study that 73 (44.24%) patients had their ulcer healed after 2 weeks of treatment. 132 (80%) of patients had ulcer healing present at 4 weeks and 97.58% of patients had ulcer healing at 6 weeks after initiating treatment (Figure 2).

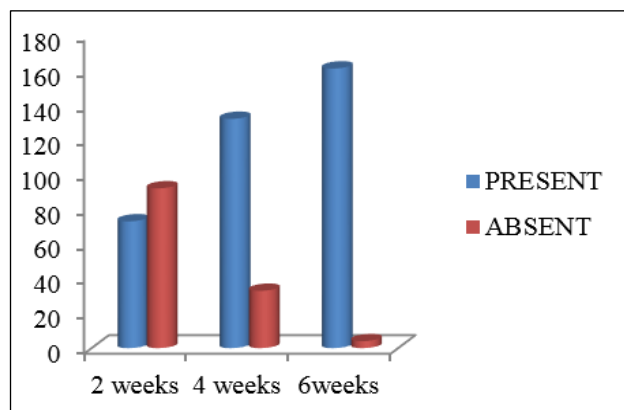


Figure 2: Distribution of ulcer healing in acute fissure in ano.

CONCLUSION

Acute fissure in ano is a common ano-rectal disease which can be easily managed with diet modification and conservative treatment modalities like stool softeners and local anesthetic creams. Those who do not respond can be managed with calcium channel blockers like Diltiazem ointment for local application. It is very essential to explain the benefits of a conservative line of management to the patients and gain their confidence. This way we can avoid unnecessary surgical procedures and morbidity among patients with acute fissure in ano. A strict follow up is necessary.

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Ethical approval: The study was approved by the institutional ethics committee

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