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Original Research Article

Graded therapeutic approach to fissure in ano: study of 50 cases

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ABSTRACT

Background: Fissure in ano is one of the commonest disease affecting all age groups. The condition is quite painful leading to interference in activities of daily living. A wide variety of modalities ranging from medical to surgical approaches have been proposed. However no single modality can be called the gold standard of treatment. Hence the need to develop an optimum graded approach to manage the condition.
Methods: Fifty consecutive cases of fissure in ano presenting in an acute state were studied prospectively to develop a therapeutic algorithm for rational treatment of the painful condition.
Results: Conservative treatment was commenced in all cases. Eighteen required anal dilatation while out of these eighteen patients, ten required sphincterotomy despite anal dilatation. Four patients had recurrence of symptoms despite all surgical treatments.
Conclusions: Conservative treatment still has a significant and positive outcome in fissure in ano. Anal dilatation and sphincterotomy are the next options of treatment. Therefore a graded multimodal approach is therapeutic in treating fissure in ano.

Keywords: Fissure in ano, Diagnosis, Surgical, Management

INTRODUCTION

Fissure in ano is one the most painful anorectal conditions. Anal fissure is a small linear tear in the anal mucosa extending from the anal verge towards the dentate line.[1] It usually occurs in the midline posteriorly constituting 90% of cases. However anteriorly located fissure in ano is seen in 10% patients especially in women. It affects individuals from all age groups. Severe pain accompanied with rectal bleeding is the commonest presentation.[2] Prompt treatment is essential to provide relief from incapacitating pain. A variety of treatment modalities have been used over a period of time. However no single method can be considered the gold standard. Hence a graded approach needs to be applied to treat such cases. The study aims at developing a graded approach for treating fissure in ano.

METHODS

Fifty consecutive patients presenting with clinical features of acute fissure in ano to a single surgical unit of D.Y. Patil Hospital and Research centre, Navi Mumbai, India evaluated by a single surgeon in the period from January 2018 to June 2019 were included in the study. Approval of hospital ethics committee was sought prior to commencing the study.

Inclusion criteria

All patients clinically diagnosed as fissure in ano presenting with acute pain during defecation accompanied by rectal bleeding were included in the study.

Exclusion criteria

Exclusion criteria were patients with recurrence despite previous surgical treatments; patients with fistula in ano patients with suspicion of malignancy.

On the primary clinic visit a detailed proforma including the consent for inclusion into the study was completed in addition to demographic data, history and physical examination findings. Per rectal digital and proctoscopic evaluation was deferred in view of severe pain and the chances of inducing spasms. Co morbidities were identified and optimised by referral to the respective medical specialities. All patients were started on a conservative treatment protocol. This comprised of both local treatment and medications. Local treatment comprised of the following steps.

- Application of lignocaine gel to the area prior to passing stools.
- Cleansing of the area with warm soap water after defecation.
- Sitz bath containing warm water, magnesium sulphate powder and few drops of Dettol for a period of 30 minutes.
- Application of diltiazem cream locally.

This was repeated twice a day.

Oral medications comprised of stool softeners, analgesics and antibiotics which included ciprofloxacin and metronidazole.

Patients were advised to follow this treatment protocol for a period of four days. They were asked to follow up on the fifth day for reassessment. Improvement of symptoms included decrease in the intensity of pain allowing pain free passage of stools and decrease or cessation of rectal bleeding. If there was improvement of symptoms then a formal PR and proctoscopy examination was done to ascertain the diagnosis and patient was then asked to continue with the same treatment for ten days. If there was no symptomatic improvement then patient was considered for anal dilatation with examination under anaesthesia as a day care procedure. A four finger anal dilatation was done. Patient was asked to follow up after five days. If on reassessment there was completed relief of symptoms all treatment was stopped except for dietary changes and stool softeners. Patients who were still unrelieved with anal dilatation were then considered for open lateral sphincterotomy. Patients were followed up for a period of six months. Data obtained was tabulated and studied.

RESULTS

Fifty consecutive patients diagnosed as fissure in ano were studied. The mean age was 36.96±9.15 years. The gender distribution was 32 males and 18 females (Table 1). All fifty has severe pain while passing stools. Forty patients had pain accompanied with post defecatory rectal bleeding (Table 2). Out of the forty patients with pain and rectal bleeding, 22 patients had sentinel tags. 18 had comorbidities. Conservative treatment was administered to all the fifty patients. 18 patients needed anal dilatation. Out of these 18 patients who underwent anal dilatation, 10 required lateral sphincterotomy due to failure of symptomatic relief despite anal dilation (Table 3). Four patients has recurrence of symptoms within six months. None of these four patients had undergone anal dilatation or sphincterotomy.

Table 1: Gender distribution of patients.

Males	Females	Total (n)
32	18	50

Table 2: Presenting symptomatology.

Pain and bleeding PR	Pain and sentinel skin tag	Total (n)
40	10	50

Table 3: Positive response to treatment approaches.

Conservative treatment	Surgical intervention anal dilatation	Lateral sphincterotomy following failed anal dilatation	Total (n)
32	8	10	50

DISCUSSION

Anal fissure is one of the most painful anorectal conditions. It was first described by Recameier in 1829.[3] In 90% of cases it is found predominantly in the midline usually posteriorly (Figure 1). Less than 10% individuals may develop a fissure in the midline anteriorly. The anoderm is densely adherent to the underlying tissues in the posterior midline. The sphincter muscle fibers have a Y shaped decussation in the midline posteriorly and get attached to the mucosa. The blood supply to the posterior region is poor as compared to the anterior region.[4] The fissure rests directly over the internal sphincter and in many cases the circular fibres of the internal sphincter as seen in the floor of the fissure crater. The sphincter due to irritation therefore goes into a state of spasm which leads to severe pain and discomfort. The fibres eventually hypertrophy. The normal resting anal pressure in females is 60 to 100 cm of water whereas in males it is 75 to 125 cm of water. These pressures decrease with age. High pressures are seen in patients suffering from anal fissures.[5] Nitric acid donors have shown to decrease these pressures. Similarly a sphincterotomy is also seen to decrease the pressures. A high resting anal pressure leads to decrease in the blood supply. This leads to severe pain. An acute anal fissure if left untreated may progress to a chronic state. Usually a fissure in ano persisting beyond six weeks is designated as chronic fissure in ano.[6] Several characteristic features may be seen in chronic fissure in

ano (Table 2). Sentinel tags are a common accompaniment of chronic fissure in ano. Sentinel tags are due to the abraded mucosa and skin dangling out with accompanying lymphatic obstruction and edema. There will usually be exacerbation of symptoms in a chronic state giving rise to intense pain and bleeding after passing stools. No age is exempt from developing an anal fissure. Faulty food and dietary habits contribute to this disease.[1] Males are more commonly affected as seen in the present study. However females too are affected especially during and after pregnancy. Chronic constipation leading to straining at stools is a common association. The intolerable pain causes a fear in the mind of the patient to pass stools. Hence the patient may avoid defecation thereby leading to more constipation and hardening of stools. Any attempt to pass stools will lead to severe pain and bleeding thereafter. Thus aggravating the painful state and worsening the symptoms. Irregular dietary habits, consumption of hot or spicy foods, poor bowel habits and lack of local hygiene are all contributory to the pathogenesis of the disease. In women pregnancy and childbirth are the common triggering factors of the disease.

Figure 1: Fissure in ano at 6 o' clock position marked by black arrow.

Diagnosis of anal fissure in ano is made on clinical evaluation. Pain and bleeding especially after an act of defecation is typical of a fissure in ano. Constipation is a usual accompaniment of the condition. Patients usually try naturopathy therapy for the same with hardly any relief of symptoms. Severe pain precludes clinical examination as was seen in the present study. Many a times the patient has severe anal spasm. Even retracting the buttocks causes severe pain. Hence a trial of conservative treatment helps in making the local condition amenable to digital examination. Conservative treatment is a multipronged approach.

Prompt improvement in dietary habits is quite helpful. Increasing the water and fibre intake adds bulk to the stools. Stool softeners enhance smooth and pain free movement of stools across the fissure.

Sitz bath helps significantly. It relieves the pain to a great extent. It improves the local blood supply and improves local hygiene. Addition of magnesium sulphate powder to the sitz bath mixture reduces local edema thereby exerting a soothing effect.

Spasm is main impediment to healing of the fissure. A variety of medical ways have been used to achieve this.

Injection of botulin toxin cases paresis of the sphincter.[6] The mechanism of action is by releasing acetycholine from the parasympathetic peripheral nerve endings and ganglionic nerve endings leading to flaccid paralysis of the internal sphincter. The effect lasts for three months. This is enough time to ensure healing of the fissure. Drug toxicity is a major complication of this treatment.

Nitric oxide donors cause relaxation of the sphincter. Glyceryl trinitrate (GTN) or isosorbide di nitrate are known to cause chemical sphincterotomy and thereby causing healing. A six week course with twice a day application of 2% GTN ointment to the anoderm usually causes healing within 6 weeks. However headache is a major side effect of GTN therapy. Topical diltiazem ointment also causes chemical sphincterotomy with good relief of symptoms as seen in the present study.

Oral calcium channel blockers are effectively used for treating anal fissures.[7,8] Calcium channels are present in the GI muscle layer. Inhibition of these channels leads to significant relief of pain due to spasm. 20 mg of nifedipine given twice daily is found to be effective.

Majority of patients respond very well to conservative means of therapy. However if these fail then surgical intervention is warranted. The traditional method of anal dilatation still continues to be a very effective modality.[11,12] In the present study 18 patients underwent anal dilatation. A four finger careful dilatation to overcome the spasm is very effective in relieving the pain due to spasm. The procedure also allows examination of the anal canal to confirm the diagnosis. Anal dilatation decreases the anal canal pressure which aids in healing of the fissure. In experienced hands there is no damage caused to the external sphincter as has been projected in recent studies. In a few cases it may not yield absolute results thereby necessitating further surgical intervention in the form of a surgical sphincterotomy.[13]

Division of the internal sphincter fibres relieves spasm.[4] This technique is especially suited for chronic and recurrent fissure in ano. The procedure can be performed

in two ways. Open posterior internal sphincterotomy involves dividing the sphincter through the fissure wound. Lateral subcutaneous internal sphincterotomy is the most favoured procedure. The caveats to be considered during this procedure are as follows

- Do not cross the dentate line
- Hemostasis must be meticulous
- Avoid cutting too much of internal sphincter especially in older individuals.
- Avoid the external sphincter at any cost.

The intersphincteric groove is palpated laterally. A radial incision up to 5 mm is made. Subcutaneous tissues are gently swept away from the sphincter. The transverse fibres of the internal sphincter are picked by an Allis forceps and the lower one third divided. The incision is closed with absorbable sutures or may be left open. In the present study ten patients underwent this procedure with excellent results.

Multiple fissures not responding to any treatment or having high recurrence rate should raise the suspicion of Crohn's disease, HIV, cytomegalovirus, syphilis and H. Ducreyi infection. In such cases treating the underlying disease will provide relief of symptoms.[13]

CONCLUSION

The study reveals that fissure in ano can best be treated with a graded approach. Conservative approach provides relief in a significant number of cases. Anal dilatation continues to be a safe and effective means of cure for fissure in ano especially in acute cases where conservative means have failed to provide relief. Lateral sphincterotomy is best suited for failure of response to anal dilatation in addition to chronic and recurrent fissure in ano.

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