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Original Research Article

Comparative evaluation of fissurectomy versus lateral internal sphincterotomy in the treatment of chronic anal fissure

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ABSTRACT

Background: Anal fissure is a common anorectal condition that affecting all age groups, but it is seen in young and healthy adults with equal incidence across both the sexes. The objective of this study was to evaluate and prospectively compare fissurectomy versus lateral internal sphincterotomy in the treatment of chronic anal fissure in terms of symptomatic relief, healing, recurrence and incontinence, if any.
Methods: 50 patients with chronic anal fissure were alternately divided in two groups. In one group fissurectomy was done and in another group, patients underwent lateral internal sphincterotomy and comparative evaluation was done.
Results: Complete healing was observed in 92% patients in fissurectomy group and 96% patients in lateral internal sphincterotomy group at the end of 6 weeks. Fissurectomy group patients reported early cut through of sutures and infection whereas in lateral internal sphincterotomy group two patients developed perianal hematoma at 3 months of follow up.
Conclusions: While considering surgical management for treating chronic anal fissure, fissurectomy is comparable to lateral internal sphincterotomy in terms of symptomatic pain relief, healing rates with minimal side effects and low recurrence.

Keywords: Chronic anal fissure, Fissurectomy

INTRODUCTION

Anal fissure is a common anorectal condition that affecting all age groups, but it is seen in young and healthy adults with equal incidence across both the sexes. An anal fissure characteristically presents with pain (as the area is supplied by highly sensitive spinal nerves), bright red bleeding per rectum, mucous discharge and constipation and is usually placed posteriorly. During defecation, the hard fecal mass mainly presses on the posterior anal tissue in which event the overlying epithelium is greatly stretched and being relatively unsupported by muscle is placed at a vulnerable position leading to tear in anal mucosa.[1] Initially, high fibre diet and stool softeners were used as part of management of anal fissure till Eisenhammer described internal sphincterotomy by dividing the sphincter in posterior midline.[2] In the late 1980's fissurectomy was often used with sphincterotomy for the treatment of chronic anal fissure.[3] Over the years various non-surgical therapies such as 2% topical diltiazem, 0.2% glyceryl trinitrate, isosorbide dinitrate, alpha-adrenoreceptors, beta-adrenoreceptors and botulinum toxin have been developed for the management of chronic anal fissure. These agents are responsible for relaxation of the internal anal sphincter and focus mainly on treating the cycles of pain, spasm and ischemia. No single medical therapy has consistently proven superior to others. A common disadvantage in conventional medical treatment is the non-permanent effect of sphincter relaxation, resulting in

a high recurrence rate. In addition, medical treatment has disadvantage of side effects, failure or discontinuation due to complications. But medical treatment has its own advantages also as it avoids all the complications related to surgical procedures and it can be carried out as an outpatient, is cost effective, does not require hospitalization and there is no loss of man hours.[4-7] A plethora of surgical techniques like anal dilatation or open or closed sphincterotomy and newer surgical therapies that have local flap procedures, calibrated and controlled procedures with anal dilators are also available to treat anal fissures which permanently lower resting anal pressure and provide better healing rates, decreased recurrence rates and better patient satisfaction. But these surgical procedures may be complicated by non-healing wounds and a higher incidence of incontinence of flatus and mucous, along with a small but definite risk of permanent incontinence. The present study was thus planned to comparatively evaluate the effectiveness of fissurectomy versus lateral internal sphincterotomy in the treatment of patients with chronic anal fissure with regards to fissure healing, pain reduction, recurrence and incontinence after surgical treatment, if any.

METHODS

A total of 50 patients presenting with chronic anal fissure were considered for the study. They were divided into two groups alternately. Group A included 25 patients treated with fissurectomy and Group B included 25 patients who underwent lateral internal sphincterotomy.

Patients with anal fissures of less than 6th week duration, pregnant women, anal fissure with inflammatory bowel disease like ulcerative colitis and Crohn's disease, Patients with immune-compromised state like HIV (human immunodeficiency virus), tuberculosis were excluded. Also, patients with other co-morbid systemic diseases interfering with wound healing such as diabetes mellitus, malignancies, long term steroid therapy were also excluded from the present study.

Group A patients were subjected to fissurectomy. After placing the patient in lithotomy position, local anaesthesia was instilled using 26G needle. The fissure was excised through the full thickness of the anal mucosa using sharp dissection. The fibres of the internal anal sphincter were identified and preserved. The resulting mucosal defect was repaired with interrupted 4-0 polyglactin (Vicryl, Ethicon). Patients in group B patient were subjected to a standard lateral internal sphincterotomy in lithotomy position under saddle block anaesthesia.

A number 11 surgical blade was inserted through the perineal skin immediately lateral to the lower edge of the internal sphincter and passed upwards until the level of the dentate line. The lower half of the internal sphincter was then divided. Haemostasis was ensured by maintaining pressure for 2-3 minutes. Patients in both the groups were discharged on lactulose and rich fibre diet and were asked to come for follow up at 1 week and then at 3 and 6 weeks.

At each visit, patient was examined for symptomatic relief of pain (VAS), healing of fissure, side effect or complications of the treatment, if any and findings were charted on the proforma respectively. At the end of the study the data was collected and analyzed statistically. Chi-square test was used as a test of significance for qualitative data in terms of pain reduction, time taken for healing. Student t-test was used as a test of significance for quantitative data. A p-value of <0.001 was considered significant.

RESULTS

All 50 patients in both the groups were followed-up in the first week and thereafter relief of pain, side effects of treatment and fissure healing was ascertained at 3 and 6 weeks. The healed fissures were then subsequently followed up at 3 months to see for any recurrence. Patients in both the groups were comparable for age and sex and also in terms of symptomatology in form of pain, bleeding, constipation.

Mean pain score decreased from 8.12±1.33 to 0.34±0.74 in patients treated with fissurectomy and from 8.44±1.19 to 0.24±1.20 in patients treated surgically with lateral internal sphincterotomy at the end of six weeks. The decrease in mean pain score in group B (lateral internal sphicterotomy) as compared to group A (fissurectomy) at the end of 6 weeks was not statistically significant (p >0.001).

Table 1: Pain score after treatment.

Mean pain score	Group A	Group B	p value
At the end of 1st week	2.76±1.2	1.40±1.55	P >0.001
At the end of 3rd week	0.84±1.2	0.52±1.12	
At the end of 6 weeks	0.34±0.74	0.24±1.20	

Complete relief of pain was observed in 23 out of 25 patients after treatment with fissurectomy (group A) whereas 24 out of 25 patients had complete relief of pain after treatment with lateral internal sphincterotomy (group B) at the end of 6 weeks of treatment. Therefore, number of patients who had complete relief of pain after lateral internal sphincterotomy was statistically not significant as compared to patients who were treated with fissurectomy (p >0.001). Complete healing was observed in 23 out of 25 (92%) patients in group A (patients treated with fissurectomy) whereas 24 (96%) patients in group B (patients treated with lateral internal sphincterotomy) had completely healed fissures at the end of 6 weeks. At the end of six weeks the difference

was not statistically significant between the two groups (p>0.001).

Table 2: Healing.

Fissure healing	Group A		Group B		p value
	Healing	Non-healing	Healing	Non-healing	
At the end of 3rd week	20	5	23	2	>0.001
At the end of 6 weeks	23	2	24	1	

Although there were minimal complications as per the treatment protocol in both the groups, but three patients in the initial part of the study in patients treated with fissurectomy had early cut through of sutures, out of which two patients ultimately progressed to non-healing which was assessed at the end of 6 weeks. Another two patients had mild infection at the suture line which subsequently healed after giving proper antibiotics. In patients treated with lateral internal sphincterotomy, two patients had perianal hematoma on first post-operative day. Of these, one patient was managed conservatively, while the other patient required drainage and evacuation of hematoma after 48 hours of conservative management. This was the one patient who ultimately had a non-healing fissure at the end of six weeks. 23 patients in group A had healed fissure at the end of 6 weeks. 1 of these 23 (4.3%) patients had a recurrence of the fissure at 3rd month follow up. In group B, 24 patients had healed fissure at the end of six weeks and 2 patients of this group had recurrence at the end of 3 months. Therefore, number of patients who had recurrence after fissurectomy was not statistically significant as compared to patients who were treated with lateral internal sphincterotomy (p >0.001).

DISCUSSION

Surgical treatments such as manual dilation and internal sphincterotomy have been used for this ailment. Because of the disability associated with surgery for anal fissure and the risk of incontinence, medical alternatives for surgery have been sought. Lateral internal sphincterotomy in the form of surgery is found to be equally effective as that of fissurectomy but both require hospital stay.

Patients in both groups had perceptible pain relief and the decrease in mean pain score was not statistically significant (p >0.001) at the end of 6 weeks of treatment. The results of the present study was in conformity with the study undertaken by Moosavi et al which showed pain relief in 100% of patients treated with fissurectomy in comparison to 100% of patients treated with lateral internal sphincterotomy at the end of the treatment.[8]

Complete healing of fissure was observed in 23 out of 25 (92%) patients in group A and 24 patients (96%) in group B at the end of six weeks of treatment (p >0.001). The result of the present study are in conformity with the study conducted by Moosavi et al who found complete fissure healing in 28 (87.5%) of patients treated with fissurectomy and in 29 (96.6%) of patients treated with lateral internal sphincterotomy and a similar study undertaken by Shaikh et al found that 91.1% of patients had complete healing after treatment with fissurectomy while 98.7% patients had complete healing of fissure after treatment with lateral internal sphincterotomy (p>0.001) and thus concluded that both fissurectomy and lateral internal sphincterotomy are comparable with respect to healing of fissure.[8,9]

Minimal side effects like bleeding and cut through of sutures were observed in patients treated with fissurectomy but no side effects like incontinence were seen in patients treated by lateral internal sphincterotomy.

Patients treated with fissurectomy (group A) had a 4.3% recurrence rate while after treatment with lateral internal sphincterotomy (group B) 8% recurrence rate was observed at 3 months follow up. Moosavi et al in 62 patients of chronic anal fissure showed 3.1% patients having recurrence in group treated with lateral internal sphincterotomy and no relapse reported in group treated with fissurectomy.[8]

Sohu et al showed recurrence of 3.1% of patients treated with lateral internal sphincterotomy in comparison with none of the patients treated with fissurectomy.[10] Shaikh et al reported recurrence in 4.4% patient treated with fissurectomy and no recurrence in the patients treated with lateral internal sphincterotomy and thus concluded that both treatment options (fissurectomy and lateral internal sphincterotomy) are comparable with respect to recurrence.[9]

CONCLUSION

Although the debate about optimum first-line therapy for chronic anal fissure continues, treatment is becoming increasingly medical. Medical treatment avoids all complication related to surgical procedures like bleeding, perianal infections, incontinence and can be carried out as an out-patient (OPD).

But patients who are resistant to medical treatment may be offered an alternative surgical treatment method as per the surgeon's expertise and experience. As a whole, it may be suggested that fissurectomy along with primary closure of fissure margins with vicryl 4-0 is comparable to lateral internal sphincterotomy in the treatment of chronic anal fissure in terms of symptomatic pain relief, healing rates with minimal side effects and low recurrence. However, a larger study with more number of subjects is needed before an ideal treatment regimen can be recommended.

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