

A Prospective Study to Observe the Results and Complications of Lateral Internal Sphincterotomy in Anal Fissure

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Abstract

Aim: To observe the results and complications of lateral internal sphincterotomy in anal fissure. **Materials & Methods:** The study was carried out as a prospective observational study of 40 patients at surgery department of a medical college & tertiary health care center, over a period of two years that included cases of anal fissure in the age group of 16 years and above for conservative & surgical management. **Results:** The recovery of the patient after this marvellous operation was fast and the pain relief was dramatic. On follow-up at 2 weeks post-operatively pain and other symptoms were present only in 11 patients (27.5%). On follow-up at 8 weeks post-operatively all 40 patients (100%) were symptom-free in this study. The complications that were observed within time frame of this study were Soiling in 4 patients (10%) and incontinence to flatus in 1 patient (2.5%). There was no recurrence of anal fissure observed in this study group within the time frame of this study. **Conclusion:** It is very evident from the above study that 'Lateral Internal Sphincterotomy' is by far the best operation for an indolent anal fissure.

Keywords: Anal Fissure, Complications, Lateral Sphincterotomy

1. Introduction

Ano-rectal complaints constitute a significant percentage of patients attending any surgical OPD. Anal fissure is quite a common surgical problem. It causes a lot of suffering out of proportion to the size of the lesion, thus causing loss of many functioning man-hours. Anal fissure is an elongated ulcer in the long axis of lower anal canal causing significant morbidity due to sharp severe anal pain, especially during defecation.

Young adults of both sexes are affected equally. Patients present with anal pain commonly during defecation and/or rectal bleeding. Whilst acute fissures

heal spontaneously or with simple therapeutic measures, a proportion progress to form a chronic linear ulcer. Chronicity of a fissure relates to duration of greater than 6 weeks with fibres of the internal anal sphincter visible at the base of the fissure.

Most fissures occur in the posterior midline; this may be anatomically related as there is a lack of tissue support posteriorly within the anal canal. Fissures associated with pregnancy are commonly located anteriorly and are often associated with low anal canal pressures. Other causes of fissures include Crohn's disease, syphilis, human immuno-deficiency virus (HIV) or tuberculosis. These are secondary fissures and are most appropriately treated

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by addressing the underlying disease process.

Though, the exact aetiology of primary anal fissure is still unknown, high resting anal pressure and reduced vascular perfusion at the base caused by increased internal sphincter tone appears to be the underlying pathological factor^{1,2}.

In our setup we manage large number of patients of anal fissure by conservative & surgical means. Lateral internal sphincterotomy is considered as gold standard in management of anal fissure and study of results and complications of lateral internal sphincterotomy is thus an important and interesting research plan.

2. Materials and Methods

2.1 Inclusion Criteria

Study was carried out on patients aged 16 years and above, irrespective of gender, who were diagnosed clinically as anal fissure and attended the surgery outpatient clinic.

2.2 Exclusion Criteria

- Age less than 16 years.
- Important secondary changes in the anal fissure such as: cicatricial deformation, large sentinel pile & subfissural infiltration.
- Any previous anal surgery.
- Patients with systemic diseases (Diabetes Mellitus, Chronic Liver Disease and Collagen Vascular Diseases).
- Patients under treatment with diltiazem or nitroglycerine for other diseases such as ischemic heart diseases.
- Pregnant women were also excluded from the study.
- Study of anal fissure associated with other local diseases such as internal piles, fistula & with diseases like inflammatory bowel disease & rectal cancer.

2.3 Methodology

The study was carried out as a prospective observational study of 40 patients at surgery department of a medical college & tertiary health care center, over a period of two years that included cases of anal fissure in the age group of 16 years and above for conservative & surgical management. In this study the case definition of anal fissure was:

- Evidence of posterior circumscribed ulcer with a large sentinel tag of skin,
- Induration at the edges,
- Exposure of horizontal fibres of the internal anal sphincter (IAS),
- Symptoms such as: post defecatory or nocturnal pain,

bleeding or both and pruritis ani lasting for more than 2 months and constipation.

- Each patient in the study was informed in detail about the aim of the study and the type of the procedure.
- A fully informed written consent was obtained from him/her prior to the study.
- Appropriate ethical committee approval was taken.
- First a conservative trial was given to all the patients of anal fissure with either diltiazem or nitroglycerine ointment. Patients with persistent fissure at the end of the treatment period & those who could not tolerate treatment with Diltiazem or nitroglycerine were subjected to lateral internal sphincterotomy.
- All patients subjected to lateral internal sphincterotomy were treated by the same surgeons using uniform method of lateral sphincterotomy in the lithotomy position. (Surgical procedure is mentioned later).
- All patients received stool softeners, daily sitz bath & fibre supplement diet.
- All the patients were followed up at 2-weeks interval for 8 weeks. In each follow up visit, the patients were evaluated for the criteria mentioned later.
- All the patients were informed to report SOS in case of any side effects or adverse effects.
- All patients were followed up for three months for evidence of recurrence of the fissure and the presence of possible side effects.
- The complications of surgery in relation to incontinence & recurrence were observed only within the time frame of this study. The other post operative complications e.g. soilage, pain, bleeding were studied.
- In our setup, anal manometry was not possible.
- All patients who underwent surgery received spinal or general anaesthesia.

2.4 Operative Procedure (Lateral Internal Anal Sphincterotomy)

This procedure was carried out under spinal anaesthesia or general anaesthesia in all the patients. Once in lithotomy position, 5 ml of 2% lignocaine + adrenaline was injected at the proposed site of incision at either 3 or 9 O' clock position in the intersphincteric plane. This facilitated bloodless dissection. A transverse incision was made at 3 or 9 O' clock position and blunt dissection was carried out in the plane between internal and external sphincters. The internal sphincter was dissected away from anal mucosa. Once free in both planes, the sphincter was grasped between two hemostats and was brought on to the surface of wound. The hemostats were kept for 30 seconds and lower half of sphincter (approximately 1cm) was divided with the help of scissors. The wound was left open and a small wick was placed to control oozing. The

dressings were removed on first post-operative day after sitz bath. Patients were discharged on second post-operative day with advice to have sitz bath for next two weeks.

3. Results

- Patients between the age of 31 to 40 years (47.5%) were affected commonly by anal fissure. The overall incidence of posterior anal fissure (in all age groups) was as follows: 24 male (60%) and 16 female (40%) patients.
- Pain was the commonest symptom observed (100%) in all the patients. Bleeding was associated in 80% of patients. 70% of patients complained constipation and 50% complained of pruritis-ani.
- Local examination revealed posterior circumscribed ulcer and induration in all the patients (100%) followed by sentinel (skin) tag in 60%.
- The recovery of the patient after this marvellous operation was fast and the pain relief was dramatic. On follow-up at 2 weeks post-operatively pain and other symptoms were present only in 11 patients (27.5%). On follow-up at 8 weeks post-operatively all 40 patients (100%) were symptom-free in this study.
- The fissure healing after Lateral Internal Sphincterotomy was very fast with 85% fissure healing (34 patients) within 4 weeks post-operatively and 97.5% fissure healing (39 patients) at 8 weeks post-operatively.
- The defects of continence were minimal after Lateral Internal Sphincterotomy. Soiling of undergarments was seen in 4 patients (10%) and incontinence to flatus was seen in only 1 patient (2.5%).

4. Discussion

The Anal fissure is an ulcer in the skin lined part of the anal canal. It occurs most frequently in young adults and affects both sexes equally³. The great majority of fissures occur in the posterior midline, although anterior midline fissures are seen in 25% of affected women and 8% of affected men⁴. About 3% of patients have both anterior and posterior fissures.

Anal fissure is probably secondary to over-stretching of the anoderm during the passage of a large or hard stool^{5,6}. W.E. Miles had postulated the passage of a scybalum over that part of the anal canal, which was relatively immobile, i.e. the part situated over the so called Pecten Band, developed as a result of constipation, just above Hilton's Line⁷.

In our study we found that average age incidence was 39 years and the patients in the age of 31-40 years were the commonest sufferers. Anal fissure produces pain out

of proportion to its size and thus causes much discomfort. Thus the loss of so many man-hours in the working age group of the population underlines the need of early and definitive treatment of this common surgical problem.

Out of 40 patients studied 24 were males (60%) and 16 were female (40%) patients. Posterior fissure was the inclusion criteria of this study. James G. Petros et al.⁸ have found that chronic fissures were equally common in males and females and that in both sexes most fissures were located posteriorly.

Pain was the most common symptom (100%), often associated with bleeding per rectally (80%) followed by Constipation (70%) and Pruritis-ani (50%). While studying the clinical presentations of anal fissures James G. Petros et al.⁸ have found that pain, bleeding and pruritis were the commonest symptoms. Patients who presented with bleeding were significantly younger than those without bleeding. In this study bleeding was most commonly seen in the age group of 31 to 40 years (47.5%).

The conservative management of anal fissure was designed to break the vicious cycle of painful stools, injury to anal canal and thus again painful stools. This management thus included stool softeners, high fibre diet, Sitz baths to relax the sphincter. However this was only effective in acute cases and few early chronic cases. Development of chronicity leads to failure of internal sphincter to relax due to increased fibrosis and thus stool softeners or Sitz baths become ineffective.

The operative management of anal fissure was aimed to cause permanent functional changes in the internal sphincter. It has been shown that the resting tone of internal anal sphincter is higher in patients of chronic anal fissure. The computerised profiles of anal canal with the aid of manometry⁹ has shown that operative intervention significantly reduces the tone of internal anal sphincter, but still remains higher than normal making such persons prone to develop fissure. Xynos et al.¹⁰ observed that increased anal sphincter activity was a major factor in anal fissure pathogenesis, and that successful internal sphincterotomy helps to heal fissure and improves the manometric performance of sphincter.

Thus anal fissure was associated with elevated resting anal pressure and therapy was directed at reducing anal sphincter tone.

Sphincterotomy was initiated with the idea of decreasing the spasm of pecten band which was shown to be nothing but internal sphincter. Notaras^{11,12} developed the technique of lateral subcutaneous sphincterotomy. It was simpler and quick procedure which produced a small wound. Postoperative care was thus minimal and the chances of postoperative wound infection were negligible.

The reduction in the symptoms occurred immediately after lateral internal sphincterotomy. On follow up at 2

weeks post-operatively the symptoms of pain, bleeding and pruritis-ani were present in 11 patients (27.5%). This number reduced significantly throughout the study period and on follow-up at 8 weeks post-operatively all the 40 patients (100%) were symptom free. Garcea et al.¹³ reported persistence of symptoms after conservative sphincterotomy in 11.9% with only 9.2% needing topical analgesia.

In this study complete healing of fissures occurred in 85% within 4 weeks post-operatively and by the end of 8 weeks fissures healed in 97.5% patients. The average time taken for fissure healing after lateral internal sphincterotomy was 3 and half weeks in P.R. Howley's Series¹⁴ and 3 weeks in Notaras' Series¹¹.

In our study the post operative complications that occurred were soiling of undergarments in 4 (10%) patients and incontinence to flatus in 1 (2.5%) patient. Series of Hoffmann and Goligher⁵ reported incontinence to flatus in 6% patients and soiling of undergarments in 7% patients.

Collopy and Ryan found that on the basis of fewer recurrences and less incontinence, sphincterotomy appeared superior to manual stretch^{15,16}.

Jensen suggested that lateral sphincterotomy was superior to manual stretch on the basis of fewer persistence / recurrent fissures^{15,17}. The pain relief and minimal complications were the same as was the healing time.

Hoffman and Goligher^{18,19} compared posterior sphincterotomy, lateral sphincterotomy and sphincter stretch and favoured lateral sphincterotomy.

There was no recurrence of anal fissure observed in this study group within the time frame of this study. According to reports, after lateral internal sphincterotomy, the long term results were excellent and the recurrence rate was low^{10,11,20,21}.

5. Conclusion

From the above study it can be concluded that a simple operation like 'Lateral internal sphincterotomy' can easily take care of the extremely painful chronic anal fissure at the other end of the gastro-intestinal tract.

It is very evident from the above study that 'Lateral internal sphincterotomy' is by far the best operation for an indolent anal fissure because.

- Pain relief is immediate and dramatic.
- Fissure healing is very fast after this procedure.
- Defects of anal continence after this procedure are minimal.
- Extremely low rate of recurrence if at all present.

The post operative smile on the face of the patient suffering from anal fissure certainly glorifies the success of this procedure.

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