

Lateral Internal Sphincterotomy in Anal Fissure

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ABSTRACT

Lateral internal sphincterotomy is considered as the gold standard in the management of anal fissure and the study of the consequences and complications of lateral internal sphincterotomy is thus an important and interesting research plan. Present study is to determine the recurrence of anal fissure following lateral internal sphincterotomy. The present study was prospective observational study 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 in the Department of General Surgery of a medical college & a tertiary health care center. Anal fissure is a common surgical problem. Since time immemorable, various types of treatment modalities have been in vogue. Study 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.

Keywords: Fissure, Sphincterotomy, Anorectal, Internus, Anal fissure

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INTRODUCTION

Anorectal 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. Ulcer in long axis of lower anal canal during defecation causing severe pain called anal fissure. Young age groups of both male and female are affected equally. Patients complaining of pain while defecation may associated with rectal bleeding. Whilst acute fissures heal early or with simple medical care, some cases may form a chronic ulcer. Chronic fissure means duration more than 42 days with fibres of the internal anal sphincter can visible at the base of the fissure. Internal sphincterotomy surgical treatment was performed for fissure under a complete misapprehension, since Miles thought that pecten band was responsible for pathology of anal fissure¹. Most authors give credit to Eisenhammer^{2,3} for the modern concept of sphincterotomy, for anal fissure. First it was midline posterior sphincterotomy (1951) open type. Since a number of surgeons referred to the keyhole deformity which it produced, as disadvantageous, Eissenhammer (1959) advocated lateral sphincterotomy (open type). After many comparative studies (Hawley 1969, Goligher 1970, Bailey 1978, Abarican 1980) it was found that lateral sphincterotomy was superior with decreased healing time, lower recurrence and no permanent defect in anal continence^{4,5,6}.

The surgical history of anal fissure continues with the latest type of advanced flap grafting and the history merges with the latest advances in form of application of topical nitroglycerine, botulinum toxin, which will be reviewed later.

AIMS AND OBJECTIVES

To determine the rate of fissure healing after lateral internal sphincterotomy. To determine the recurrence of anal fissure following lateral internal sphincterotomy. To study the complications following lateral internal sphincterotomy.

REVIEW OF LITERATURE

Recaimer⁷ is credited with first describing anal stretching (1829). The procedure was popularized in England by Goligher⁵ and championed for various forms of anorectal diseases by Lord⁸. Lord (1969) published his technique of eight finger anal dilatation. This technique was later studied in comparison with other forms of surgeries like sphincterotomy / excision of fissure / lateral subcutaneous sphincterotomy by Hawley (1969), Collopy and Ryan (1979), Jensen et al (1984)^{6,9}. Internal sphincterotomy was originally performed for surgical treatment of fissure under a complete misapprehension, since Miles thought that pecten band was responsible for pathology of anal fissure. The closed lateral operation was advocated by Notaras in 1969. Minimal post operation care was required, it was quick, simple and was done under local anaesthesia. Pain relief was immediate. Goligher (1984) and Boulos (1984) stated that lateral subcutaneous sphincterotomy is a good operation for fissure. The surgical history of anal fissure continues with the latest type of advanced flap grafting and the history merges with the latest advances in form of application of topical nitroglycerine, botulinum toxin, which will be reviewed later. The sphincter ani internus is a thickened (5-8 mm wall) tube of circular smooth muscle representing a thickening of the rectal muscularis externa. It encloses the upper three-quarters (30 mm) of the anal canal, extending from the anorectal junction down to the white line which marks its lower border. The external sphincter can also be voluntarily contracted to occlude the anus more firmly. It is likely that the external sphincter is more effective at closure than the internal, which appears unable to seal off the anal canal completely (Lestar et al 1992)¹⁰. Prior to defaecation, faeces move from the colon by peristaltic action into the rectum (from which they are usually excluded except during this process), initiating the desire to defaecate; faeces as far proximally as the splenic flexure may be moved to the rectum in one defaecatory event. When defaecation itself commences, the anorectal (perineal) angle becomes less acute or straight as the puborectal muscle sling normally pulling it forward relaxes, facilitating the passage of faeces into the anal canal. The

internal surface of the canal also becomes everted so that its epithelial lining below the white line is presented at the body surface.

The anal canal is derived embryonically from two sources. The region above the anal valves arises from the endodermally-lined colaca, whilst below this boundary it comes from the proctodeum, covered with ectoderm. The cloacal part (above) is innervated by autonomic nerves; the arterial supply (Griffiths 1961) is mainly from the superior and middle rectal arteries, while the venous drainage is to the superior rectal vein, a tributary (via the inferior mesenteric vein) of the portal venous system. The lymphatics drain with those of the rectum.

An ischaemic cause, suggested by Gibbons and Read in 1986¹¹ was supported by postmortem angiographic studies of the inferior rectal artery. Those studies demonstrated a relative paucity of vascularity in the posterior mid-line of the anal canal in 85% of the cadavers examined.¹² Anal dilators, usually coated with a topical anesthetic preparation, have been advocated by some for fissure therapy. Two randomized trials comparing conservative care with or without an anal dilator showed no benefit with self-dilatation.¹³ Interest in pharmacologic manipulation of internal anal sphincter was spurred by the recognition that sphincter hypertonia is associated with fissure persistence, and that surgical approaches to decreased tone may lead to permanent dysfunction. The internal anal sphincter consists of smooth muscle whose tone is caused partially by intrinsic

myogenic properties and partly to extrinsic neural influence.¹⁴⁻¹⁶

MATERIALS AND METHODS

A prospective observational 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 in the Department of General Surgery of a medical college & a tertiary health care center. The present study period was from August 2011 to August 2013. Important secondary changes in the anal fissure such as: cicatricial deformation, large sentinel pile & subfissural infiltration. 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. Every patient in the study was informed in detail about the aim of the study and the type of the procedure. 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.

OBSERVATION & RESULTS

Table 1: Distribution of Patients by Age

Age in Years	Total
21-30	11 (22%)
31-40	23 (46%)
41-50	8 (16%)
51-60	8 (16%)
Total	50

In Table 1 presented age distribution of patient, it is clear that majority of the patients were in the 31 to 40 year age group (46%).

Table 2: Symptoms

Symptoms	Number Of Patients
Pain	50 (100%)
Bleeding	40 (80%)
Constipation	35 (70%)
Pruritis-ani	25 (50%)

In Table no. 2 indicated from analysis of chart it is clear that Pain was the commonest symptom (100%) often associated with Bleeding (80%). Few patients also complained of Constipation (70%) and Pruritis-Ani (50%).

Table 3: Examination Findings

Examination Findings	Number of patients
Ulcer	50 (100%)
Sentinel (Skin) Tag	30 (60%)
Induration	50 (100%)

In this study on Local Examination (Table 3) we found that Ulcer was the most common finding (100%) along with Induration (100%). These were followed by Sentinel (skin) tag.

Table 4: Reduction of Symptoms

	Symptoms		
	Pain	Bleeding	Pruritis-Ani
After 2 weeks	12 (24%)	12 (24%)	12 (24%)
After 4 weeks	8 (16%)	8 (16%)	8 (16%)
After 6 weeks	2 (4%)	2 (4%)	2 (4%)
After 8 weeks	0	0	0

From analysis of the above table 4, it is clear that in this study there was immediate reduction in symptoms post operatively. On follow up at 8 weeks post operatively the symptoms had disappeared in this study group.

DISCUSSION

Anal fissure is a common surgical problem. Since time immemorable, various types of treatment modalities have been in vogue. In ancient times it included application of herbs and even acts like inserting red hot iron rod in anus. The modern branch of proctology has its roots in the operation that cured Louis XIV of his fistula in ano.⁹ The operation not only gave the opportunity to the surgeons to have a prideful entry into the practising medical professionals but led to thinking of proctology as a speciality. Anal fissure is probably secondary to over-stretching of the anoderm during the passage of a large or hard stool.^{17,18} 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 Line.¹⁹ Study shows average age incidence was 39 years and 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. Pain 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 al²⁰ have found that pain, bleeding and pruritus are the commonest symptoms. Patients who presented with bleeding are younger than other no bleeding. Study shows bleeding was most commonly seen in the age group of 31 to 40 years (46%). The conservative management of anal fissure to reduce pain, 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.

Jensen (1984) suggested that lateral sphincterotomy was superior to manual stretch on the basis of fewer persistence / recurrent fissures^{9,21}. The pain relief and minimal complications were the same as was the healing time. Excision of anal fissure lost its popularity in recent years in favour of simpler ways of doing sphincterotomy with a short healing time²². Excision with immediate skin grafting has become obsolete because the bowels must be confined for

five or six days and patient needs hospitalisation for a week or so. Hoffman and Goligher (1970)^{5,23} 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 are excellent and the recurrence rate is low²⁴⁻²⁷.

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.

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