

**A OBSERVATIONAL STUDY BETWEEN THE RESULTS AND COMPLICATIONS OF
LATERAL INTERNAL SPHINCTEROTOMY IN ANAL FISSURE.*****Dr. Nitinchandra D. Khairnar and Dr. C. Z. Pardeshi**

Maharashtra India.

***Corresponding Author: Dr. Nitinchandra D. Khairnar**

Maharashtra India.

Article Received on 10/03/2019

Article Revised on 01/04/2019

Article Accepted on 22/04/2019

ABSTRACT

The purpose of this study to know the result and complication of lateral internal sphincterotomy. Method study was carried out in patients of Department of General Surgery in Krishna institute of medical science karad in 2 years time period. Results The complications that were observed within time frame of this study were Soiling in 4 patients (8%) and incontinence to flatus in 2 patient (4%). 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.

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. 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.

Posterior midline is common site for fissures; this is due to lack of tissue support in same area in the anal canal. Anal fissures with pregnancy common site anteriorly and are may due to low pressure in canal. Other causes of fissures include Crohn's disease, syphilis, HIV or TB. Secondary fissures and are treated by stopping disease progress.

The exact aetiology of primary anal fissure is still not known, due to increased internal sphincter tone resulting in to reduced blood flow it may underlying pathological factor. due to forceful dilatation tear in anoderm of the anal canal during defecation vicious cycle starts exposing the underlying internal sphincter muscle that resulting into spasm and fails to relax during next bowel movement. Ischemia developed due muscle spasm

resulting in to more tear of the anoderm causing symptoms and affects fissure healing.

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.

Miles (1939) treated fissure by pectenotomy which in retrospect was shown by Eisenhammer to be the lower fibres of internal sphincter.

The historical development of sphincterotomy is given in table below (Ray et al 1974)^[2]

1818	Boyer recommends sphincterotomy.
1833	Dupuytren's anal incision sphincterotomy (Hardy)
1892	Goodsall performed open sphincterotomy
1923	Martun: sub-mucous sphincterotomy
1939	Miles: Pectenotomy
*1951	Eisenhammer: Posterior internal sphincterotomy
*1959	Eisenhammer: Lateral internal sphincterotomy
*1969	Notarus: Lateral sub-cutaneous sphincterotomy.

Most authors give credit to Eisenhammer,^[3,4] 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.^[5,6,7]

The closed lateral operation was first advocated by Notaras in 1969. Minimal post operative 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 internal 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.

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.

AIMS AND OBJECTIVES

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

MATERIALS AND METHODS

1. Type of the study – Observational Study
2. Study setting - Department of General Surgery of a medical college & Krishna Institute of Medical science Deemed university.
3. Duration of the study - December 2016 to May 2018
4. Study participants:
 - a. **Sample size:** 50 patients
 - b. **Eligibility criteria:** Inclusion criteria

Study was carried out on patients aged 18 years and above, irrespective of gender, who were diagnosed clinically as anal fissure and attended the surgery outpatient clinic.

Exclusion criteria

- Age less than 18 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.

1. Methodology

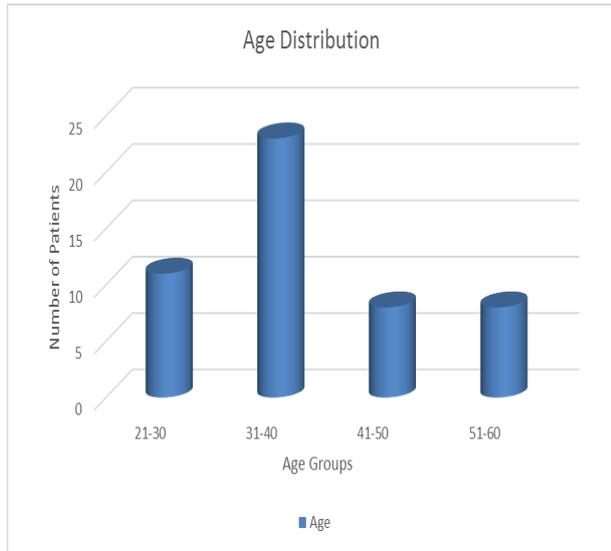
The study was carried out as a observational study of 50 patients at surgery department of a medical college & tertiary health care center, over a period of two years that included cases of anal fissure in the age group of 18 years and above for conservative & surgical management. In this study the case 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 pruritisani 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.

RESULT

Table 1: Age distribution of Patients.

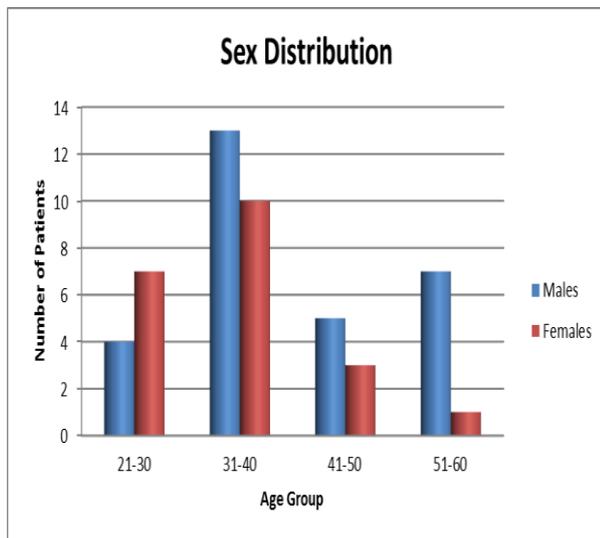
Age in Years	Total
21-30	11 (22%)
31-40	23 (46%)
41-50	8 (16%)
51-60	8 (16%)
Total	50



From analysis of chart it is clear that majority of the patients were in the 31 to 40 year age group (46%).

Table 2: Sex distribution of Patients.

Age in Years	Males	Females	Total
21-30	5 (10%)	6 (12%)	11
31-40	13 (26%)	10 (20%)	23
41-50	5 (10%)	3 (6%)	8
51-60	8(16%)	1 (2%)	8
Total	30 (60%)	20 (40%)	50

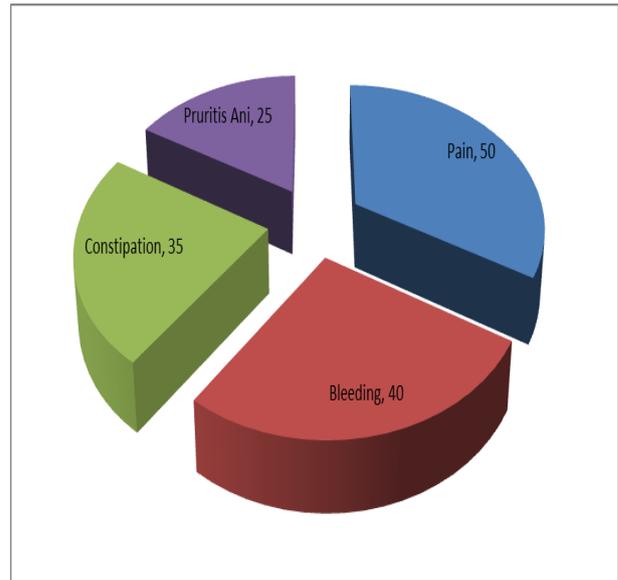


Graph 2: Sex distribution of Patients.

From analysis of chart it is clear that majority of the patients were males (60%) in the present study.

Table 3: Symptoms.

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

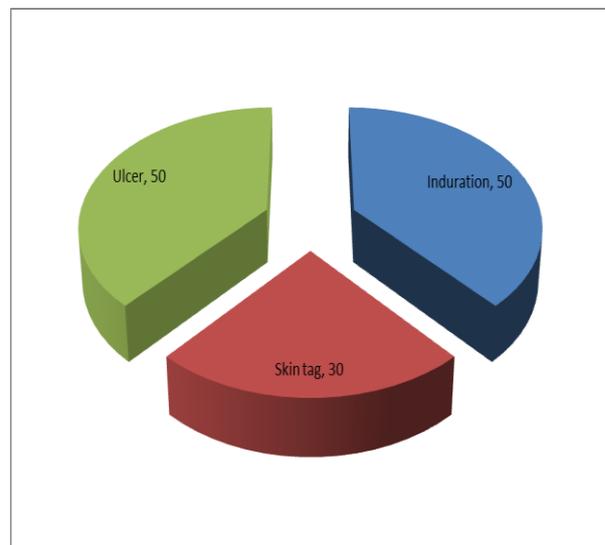


Graph 3: Symptoms.

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 4: Examination Findings.

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

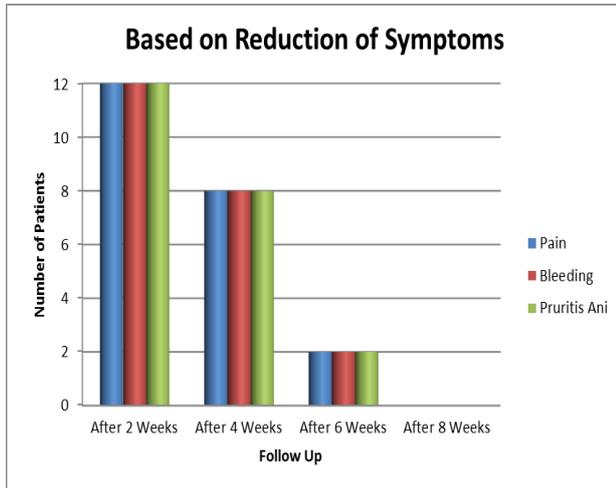


Graph 4: Examination Findings.

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

Table 5: Reduction of Symptoms.

Follow Up \ 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

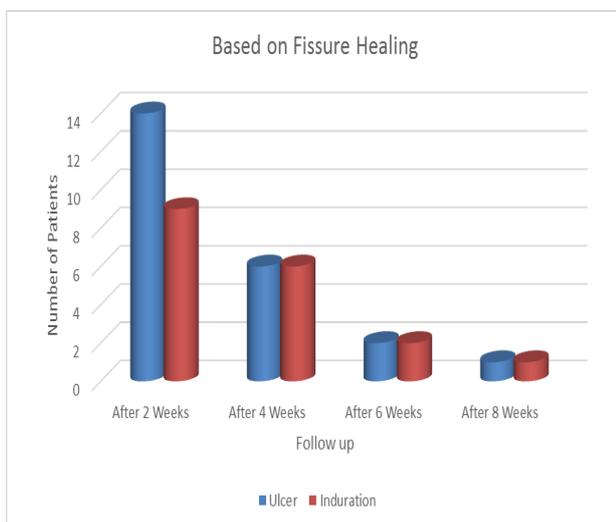


Graph 5: Reduction of Symptoms.

From analysis of the above chart 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.

Table 6: Based on Fissure Healing.

Follow Up \ Signs	Ulcer	Induration
After 2 weeks	14 (28%)	9 (18%)
After 4 weeks	6 (12%)	6 (12%)
After 6 weeks	2 (4%)	2 (4%)
After 8 weeks	1 (2%)	1 (2%)

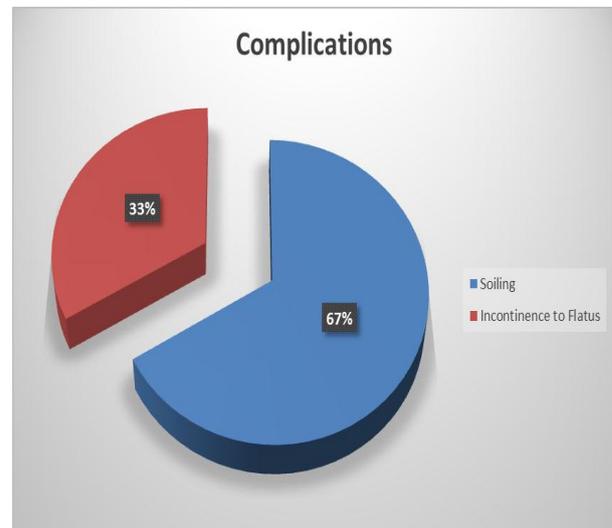


Graph 6: Based on Fissure Healing.

From analysis of the above chart it is clear that fissure healing started immediately post operatively after lateral internal sphincterotomy in this study group. On follow up at 8 weeks post operatively ulcer and induration were present in only 1 patient (2%).

Table 7: Based on Complications.

Complications	Number of patients
Soiling	4 (8%)
Incontinence to Flatus	2 (4%)



Graph 7: Based on Complications.

The complications that were observed within time frame of this study were Soiling in 4 patients (8%) and incontinence to flatus in 2 patient (4%).

There was no recurrence of anal fissure observed in this study group within the time frame of this study.

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.² 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.

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 equally.²⁴ 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 men.⁵⁰ 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.^{25,51} 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.⁵²

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.

We have not studied paediatric age group, but Cohen *et al*⁵³ have noted that fissure is common in children after weaning. Cohen suggests that if conservative treatment fails lateral subcutaneous sphincterotomy is preferred over anal dilatation in children.

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*⁵⁴ have found that chronic fissures are equally common in males and females and that in both sexes most fissures are located posteriorly.

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 al*⁵⁴ have found that pain, bleeding and pruritis 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 local examination findings of all the patients were similar. All the patients (100%) had posterior anal fissure, which is the commonest site of occurrence of fissure-in-ano, associated with induration (100%). Sentinel (skin) tag was present in 60% of the patients in this study group. Lockhart-Mummary⁵⁵ suggests that posterior fissure is common due to support of strong lateral fibres of external sphincter with potential laxity posteriorly. Thus tearing with a large bowel movement is more likely to occur posteriorly than elsewhere. The common occurrence of anterior fissure in females has been attributed to stretching and tearing of perineal body during delivery.

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.

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 manometry.⁵⁶ 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. Xynoset *al*.⁵⁷ observed that increased anal sphincter activity is a major factor in anal fissure pathogenesis, and that successful internal sphincterotomy heals fissure and improves the manometric performance of sphincter.

Thus anal fissure is associated with elevated resting anal pressure and therapy is 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 (1969)^{58,59} developed the technique of lateral subcutaneous sphincterotomy. It is simpler and quick procedure which produces 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 12 patients (24%). This number reduced significantly throughout the study period and on follow-up at 8 weeks post-operatively all the 50 patients (100%) were symptom free. Garcea *et al*, (2003)⁶⁰ reported persistence of symptoms after conservative sphincterotomy in 11.9% with only 9.2% needed 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 Series,⁷ and 3 weeks in Notaras' Series.⁵⁸

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 Goligher,²⁵ reported incontinence to flatus in 6% patients and soiling of undergarments in 7% patients.

Manual Dilatation / Stretching of Anal Sphincter has long been a favourite method of treating anal fissure. Howley (1969) found that at 6 months 28% of those treated with Manual Dilatation of anus had unhealed or recurrent fissures which made it the less effective treatment.^[7]

Collopy and Ryan (1979) found that on the basis of less recurrences and less incontinence, sphincterotomy appeared superior to manual stretch.^[2,63]

Jensen (1984) suggested that lateral sphincterotomy was superior to manual stretch on the basis of fewer persistence / recurrent fissures.^[2,64] 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 time.^[65] 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),^[6,66] 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 low.^[61,57,58,62]