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COMPARATIVE STUDY BETWEEN OPEN VS CLOSED LATERAL ANAL INTERNAL SPHINCTEROTOMY IN PATIENTS WITH CHRONIC FISSURE IN ANO.

Dental Science

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ABSTRACT

Background : Chronic fissure in ano is the most common cause of pain during defecation in young patients. lateral anal sphincterotomy is the surgery of choice for chronic fissure in ano. This procedure can be done by either open or closed method.
Objective: The aim of this study was to compare the closed and open method LAS for chronic anal fissure .
Study Designs: The study was designed as a prospective randomized study.
Place And Duration Of Study : The study was conducted in Indira Gandhi medical college and hospital , puducherry from January 2019 to november 2019.
Patients And Methods: A total of 205 patients undergoing surgery were divided into two groups. In group A, there were 100 patients who were treated by closed lateral internal anal sphincterotomy and in group B there were 105 patients who were managed by open lateral internal anal sphincterotomy method. Patients were followed up for 3 months following surgery to observe for pain, bleeding, infection, incontinence, and recurrence.
Results: There was significant difference in postoperative acute complications between the two methods of internal anal sphincterotomy.
Conclusion: Lateral internal sphincterotomy either with open or closed method is the treatment of choice for chronic anal fissure. However, the closed method is considered to have less post operative complication compared to the open method.

KEYWORDS

anal fissure, postoperative complications, sphincterotomy

INTRODUCTION:

Fissure in ano is an ulcer in anal canal. It is a benign condition of anoderm which is painful , occurs due to increased internal anal spincter along with reduced tissue perfusion (1,2) . Fissure in ano can be acute or chronic. Chronic fissure may present as a sentinel tag, hypertrophic anal papillae, anal spasm or fibrosis of the internal sphincter muscle. Chronic fissures are commonly seen posteriorly at 6 o' clock and rarely anteriorly at 12 o' clock position in recumbent position. Multiple fissures or fissures at other position need further investigation of the underlying cause. Conditions that may present with multiple fissures are Crohn's disease, anal intercourse, sexually transmitted disease, or anal carcinoma (3).

Typically patient- with acute fissure in ano presents with severe pain of tearing/ burning in nature with the onset of defecation that lasts for few hours afterwards. Bleeding per rectum may be present along with pain. This Bleeding is usually small in amount staining the stool surface or in the shape of drops after defecation; rarely, it may be severe [4].

On examination, the fissure can be seen by gently parting the buttocks and everting the anal verge. Digital rectal examination and proctosigmoidoscopy are contraindicated in acute phase[4]. Treatment of most case of acute anal fissure is conservative with usage of bulking agents, stool softeners, local anesthesia creams, and sitz bath. Conservative approach may not be so effective in chronic fissure[4]. Topical glycerol trinitrate 0.2% ointment applied twice a day for weeks has proved to reduce the symptoms of chronic anal fissure [5].

Lateral internal anal sphincterotomy is the surgical method of choice in chronic anal fissure which may be performed by open or closed method. In this procedure the lower third to half of the internal sphincter will be divided, thus reducing the spasm and increasing local anoderm blood flow [4]. Surgical sphincterotomy has a high healing rate in patients with chronic fissure. By 6 weeks post operative period , 94.7–96% of fissures heal with a low recurrence rate [5–7]. Failure rate at 5 years is seen in 2-3% (8).

Aims and Objectives :

The aim of this study is to compare the effectiveness, advantages and disadvantages of closed vs open lateral internal anal sphinterotomy.

Types of Intervention:

a) Closed lateral internal anal sphinterotomy.
b) Open lateral internal anal sphinterotomy.

Types of Outcome Measures

- Pain on the first day post operative.
- Pain after 1 month.
- Bleeding per rectum post operatively.
- Local infection rates.
- Temporary incontenence.
- Recurrence

Inclusion Criteria

a) Patients of any age.
b) Patients having chronic fissure in ano.
c) Patient willing to give informed consent.

Exclusion Criteria

a) Patients with associated haemorrhoids , fistula , multiple fissures
b) Patient unfit for surgery under general anaesthesia.

Sample Size- Number of patients to be studied are 205. Statistical Analysis of my study will be by standard- 't' test, chi-square method.

PATIENTS AND METHODS :

This study was a prospective study conducted on 205 patients with chronic fissure in ano admitted for surgery to Indira Gandhi medical college and Hospital puduchery from january 2019 to november 2019. Chronic fissure is characterized by indurated edge and pain during defecation for minimum of 2 months which failed to resolve by medical management. Patients with associated hemorrhoids or any other anorectal diseases were excluded . Patients were divided into two groups based on odd and even admissions . Group A with 100 patients were treated by closed lateral sphincterotomy and Group B with 105 patients were treated by open lateral sphincterotomy method.

All the patients were subjected to routine investigations and preoperative assessment done. Both procedures were performed under spinal anaesthesia.

In closed method, patient put in lithotomy position after spinal anaesthesia, internal sphincter was palpated by the left index finger by inserting into anal canal . The intersphinteric groove was felt and a 1cm incision made in the groove and the scalpel was used to divide the lower third of internal sphincter controlled by the left index finger. In open method , anal canal was retracted

In the open method, anal canal was retracted using park retractor and intersphincteric groove is felt. 1-cm incision was made in the

intersphincteric groove and an artery forceps was used to separate the muscle from the mucosa and the lower third is divided followed by pressure for 3 min to control bleeding. This was followed by closure of the wound with Vicryl 4/0 suture.streile dressing applied after the procedure .

Pain, bleeding, infection, incontinence, and recurrence were observed in both groups of patients over a 3 months period.

Statistical analysis Data were analyzed using a computer SPSS program, version 18 (Developers: IBM Corporation, University of Chicago). Fisher test and Student's test were used for statistical analysis.

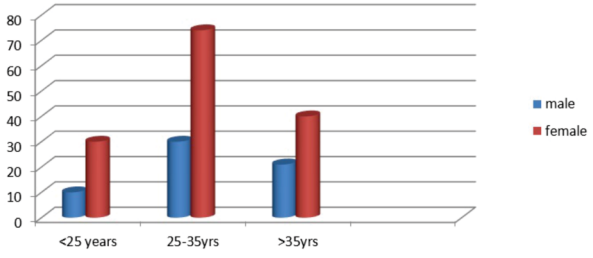
OBSERVATION :

205 patients with chronic fissure in ano were taken up for study at the Indira Gandhi medical college and Hospitals, puducherry during the period of January 2019 and november 2019. Those cases were admitted to the Department of Surgery and following were observed. Below 25 years there were 30 females and 10 male, between 25 - 35 years there were 74 females and 30 males, between 35 - 45 years there were 40 females and 21 males. In this study, the peak incidence of chronic fissure in ano was between 25 - 35 years. Out of 205 cases under study 30% are males and 70% are females, incidence of 1:2.3 (M:F) showing female predominance.

Table 1. Age and Sex Distribution (original)

Age in yrs	Male	Percentage	Female	Percentage	Total	Percentage
< 25 years	10	16.39%	30	20.83%	40	19.51%
25-35years	30	49.18%	74	51.38%	104	50.73%
35-45years	21	34.42%	40	27.77%	61	29.75%
Total	61	100%	144	100%	205	100%

Graph 1:

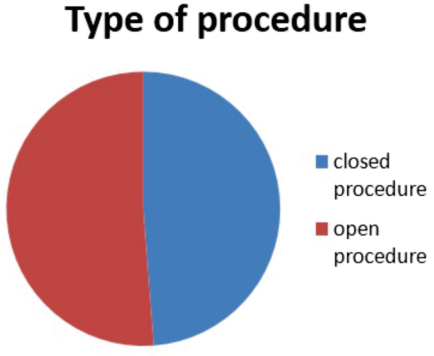


Out of 205 cases 100 cases underwent closed lateral internal anal sphincterotomy(group A) and 105 cases underwent open internal anal sphincterotomy(group B) .

Table 2: type of procedure (original)

Type of procedure	Number of patients	Percentage
closed lateral internal anal sphincterotomy	100	48.78%
open lateral internal anal sphincterotomy	105	51.22%
Total	205	100%

Graph 2

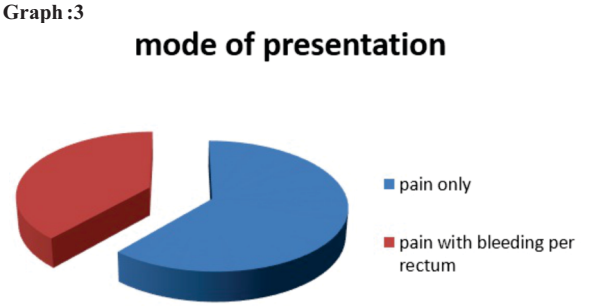


Both group of patients presented with either pain during defaecation alone in 126 or pain during defaecation with bleeding in 79 patients.

Table 3: mode of presentation (original)

Symptoms	Number of patients	Percentage
Pain only	126	61.46%
Pain with bleeding per rectum	79	38.54%

Graph :3

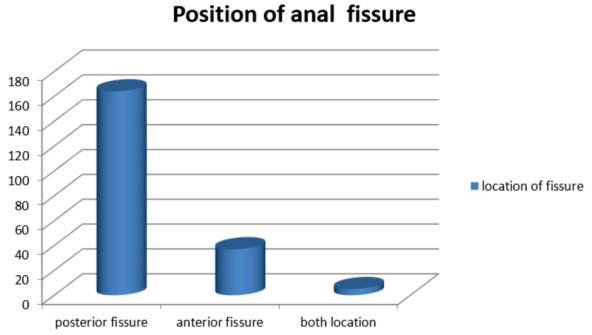


On examination , 164 patients had fissure at posterior location and 37 patients had at anterior location. 5 patients had fissure both anterior and posterior location.

Table :4 Location of fissure in ano (original)

Site of fissure	Number of patients	Percentage
Posterior fissure	164	80%
Anterior fissure	37	18%
Both locations	5	2%

Graph : 4



In group A, patients who underwent closed internal anal sphincterotomy procedure, 80 of 100 patients were free of symptoms on immediate post operative day. In group B who underwent open internal anal sphincterotomy, 70 of 105patients were free of symptoms on immediate post operative day.

In both groups, few patients showed complications. 20 patients complained of postoperative pain in group A compared with 35 patients in group B. pain improved by one month in both groups .(chi square statistic is 4.63 and the P value is 0.03 which is significant)

Bleeding after surgery was found in five patients in group A and one patient in Group B (chi square statistic is 2.9 and P value is 0.08 which is not significant)

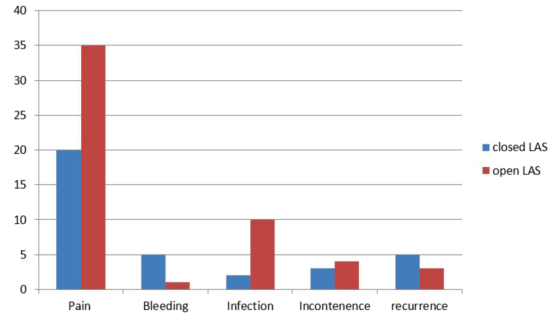
Infection was found in 2 patients in group A compared to 10 patients in group B (chi square statistic is 5.26 and P value is 0.02 which is significant)

Mild incontinence to flatus, which was temporary, was found in 3 patients in group A compared with 4 patients in group B (chi square statistic is 0.01 and P value is 0.74 which is not significant) Recurrence was noticed in 5 patients in group A compared to 3 patients in group B (chi square statistic is 0.18 and P value is 0.66 which is not significant).

Table : 5 Post operative complications (original)

Complication	Group A	Group B	P value based on chi square test
Pain	20	35	0.03 (significant)
Bleeding	5	1	0.08
Infection	2	10	0.02 (significant)
Incontinence	3	4	0.74
Recurrence	5	3	0.66

Graph : 5



Discussion

In our study, we have conducted a randomised controlled trial in Department of General Surgery, IGMCRI, pondicherry from January 2019 to November 2019 among 205 patients undergoing lateral anal sphincterotomy for chronic fissure in ano (either closed method or open method) and have compared these two methods in terms of postoperative pain, bleeding , infection rates, incontinence, recurrence.

According to the observation based on table 1 and Graph 1, the peak age incidence of chronic fissure in ano is observed between 25 - 35 years. A total of 61 males and 144 females were considered for study and the male-to-female ratio in this study is 1:2.3.

According to Table 2 and Graph 2: 205 cases admitted through surgery outdoor were divided into two groups. In this process 100 cases underwent closed lateral anal sphincterotomy (LAS), 105 cases open LAS .

All the 205 patients underwent surgery under spinal anaesthesia in our Institution.

Table 3 and Graph 3 demonstrate around 62% patients presented with only pain during defaecation and 38% presented with pain and bleeding per rectum during defaecation. This is similar to the observation made by Hananel and Gordon(10).

Table 4 and graph 4 demostrates the common site of chronic fissure in ano . In 80% of cases the fissure was seen in posterior aspect and in 18% seen in anterior aspect and in 2% fissure seen both in anterior and posterior. This is similar to the observation made by Gupta et al(9).

Table 5 and graph 5 compares post operative complication in both group of patients. It shows the incidence of post operative pain and infection is significantly less in group A (closed procedure) compared to group B (open procedure) . this is similar to the observation made by Hiltunen and Matikainen(11). Whereas other complications including post operative bleeding , incontinence and recurrence doesn't shows any significant difference in both groups. Pernikoff et al. have reported that the complication rate is relatively higher in open LAS(12) Kortbeek et al(13) and Ullah and Nadeem(14) also observed that closed sphincterotomy is associated with lesser complications when compared to open method.

SUMMARY :

205 cases of chronic anal fissure were subjected to either method of lateral anal sphincterotomy (closed vs open) at Department of Surgery, Indira Gandhi Medical College and Hospitals ,puducherry. The study was prospective, randomised comparative from January 2019 to November 2019, 100 cases of closed LAS and 105 cases open LAS were subjected by odd/even admission. After thorough investigation and pre-operative preparation, patients were subjected for surgery.

Post operative pain , bleeding , local infection, incontinence, recurrence were observed keenly and data recorded according to case record form. In our study, the male-to-female ratio was 1: 2.3 with female predominance. The peak age incidence in our study was between 25 - 35 yrs.Most common presentation was pain during defaecation seen in 62% and the most common location of chronic fissure was posterior or 6 o'clock position seen in 80%.

The incidence of postoperative pain and local infection were significantly lower in closed LAS as compared to open LAS. Other post operative complications were not significantly different among two groups.

CONCLUSION :

Lateral anal internal sphincterotomy(LAS) is the surgery of choice in patients with chronic fissure in ano. Among the two methods closed LAS is better compared to open LAS as it has lower rate of post operative complications.

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