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Original Research Article

Comparative Study of Partial Lateral Internal Sphincterotomy versus Manual Dilatation of the Anus in the Treatment of Chronic Fissure-in-Ano

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Abstract: The objective is to compare the result of partial Lateral Internal Sphincterotomy (LIS) and manual dilation of the Anus (MDA) in the treatment of chronic fissure-in-Ano. The material and methods were fifty patients who were randomized to two groups underwent LIS or MDA. The results of these procedure where compare in terms of operating time, difference in effectiveness, duration of hospital Stay, post operative complications and cost effectiveness. In Results During follow up period of 6 months post operatively, 24 patients LIS group and all 25 patients in MDA group had complete healing of anal fissure. The post-operative improvement in pain, bleeding and constipation did not differ significantly between the two groups. In LIS group nearly 50% patients were operated under local anaesthesia and no patient in MDA group was operated under local anaesthesia. Operative time in MDA group was significantly longer that the operative time in LIS group. In LIS group 100% patient were mobilized within 24 hours but in MDA group no patient was ambulated within 24 hours. Anal in continence of flatus and feaces were absent in LIS group and was present 16% cases in MDA group. In Conclusion our opinion, Lateral internal anal sphincterotomy should be procedure of choice for chronic anal fissure because it relieves symptoms and heal the fissure in nearly all patients. The advantages are good symptomatic relief, high rate of healing and good patient satisfaction. It has very few complication and negligible rate of recurrence and incontinence.
Keywords: Fissure in Ano, Anal Dilatation, Lateral Anal sphincterotomy.

INTRODUCTION

Anal fissure is a linear tear in the anoderm distal to the dentate line [1]. It can be categorized as acute or chronic. An acute fissure is a simple laceration, whereas a chronic anal fissure is ulceration with built-up scarred edges and exposed internal anal sphincter muscle fibers at its base. Anal fissure present with tearing or burning pain during defecation, bleeding is usually detected on the toilet paper and constipation. The etiology of this condition is controversial, it appears that constipation with passage of hard stools or anal trauma may instigate the fissure. It is generally accepted that spasm of the internal anal sphincter plays a fundamental role in its pathogenesis. Therefore there is a vicious circle: fissure - internal anal sphincter spasm – pain. Thus, rapid effective treatment is a priority. Studies on method of treatment of chronic anal fissure ranges from tropical medical application to surgery. When conservative measures fail, a surgical approach becomes necessary for the definitive management of the chronic anal fissure. Dilation of the anal canal for the treatment of anal fissure was first described in the 1860s, but was popularized in the 1960s. In 1964, Watts and colleagues described the procedure of manual stretching of the anal [2]. But anal stretch has been scrutinized for causing extensive damage to internal and external sphincters leading to incontinence. Internal sphincterotomy for the management of anal fissure was first described and popularized in the 1950s by Eisen hammer [3]. Ram E *et al.;* in their study of 108 patients, compare left lateral internal sphincterotomy with anal dilatation results of this study suggest that left lateral internal sphincterotomy is preferred method for the treatment of chronic fissure in ano[4]. Abdul-Wahid M Salih *et al.* in his study Anal fissures: Open lateral internal sphincterotomy results concluded that Lateral internal sphincterotomy is the procedure of choice for chronic anal fissure because it relieves symptoms and heals the fissure in nearly all patients. It has very few complications and negligible rate of recurrence and incontinence [5]. We have therefore carried out a controlled prospective trail to study the comparison between partial lateral internal sphincterotomy and manual dilatation of the anus in the treatment of chronic fissure in Ano in the terms of difference in

effectiveness, operating time, post operative complications, duration of hospital stay, cost effectiveness.

MATERIAL AND METHODS

This was a comparative prospective study conducted in the Department of General Surgery, S.P. Medical College and P.B.M. and Associated Group of Hospitals, Bikaner carried between January 2015 to January 2016. Total 50 patients with chronic fissure in ano, half of which had undergone partial lateral internal anal sphincterotomy and another half manual dilatation of the anus were studied and their outcomes were compared in accordance with the aims and objectives of the study.

Inclusive criteria:

- All age group
- Both sexes

Exclusive criteria:

- Associated anal pathologies (incontinence, stenosis, abscess, fistula, and hemorrhoids)
- Other comorbidities (IBD, AIDS, tuberculosis, sexually transmitted diseases, and immunodepression)
- Anticoagulant therapy.

Total 50 patients were divided in two groups by simple random sampling into either lateral anal internal sphincerotomy or manual dilatation group. Fully informed consent was obtained from the patient and there relatives about participation in the study. A standardized history was obtained from each patient at the time of admission. A throughout physical examination was performed. By gentle separation of the buttocks and examination of the anus, a linear separation of the anoderm was identified and diagnosis was confirmed. Cases were followed up in outpatient department weekly for 6 consecutive weeks and biweekly for subsequent 3 months. At each visit questions were asked regarding pain relief, leakage of flatus/feces, and any side effects.

RESULTS:

No significant difference was detected between gender and age distribution of patients (Table-1)

The distribution of pain, rectal bleeding and constipation were not significantly different between the groups. (Table-2)

Table-1: Gender and age distribution of patients

	LIS Group	MDA Group
Gender	14 Pts. Male 11 Pts. Female	15 Pts Male 11 Pts. Female
Mean of age ranges	41.00	39.48

Table-2: Distribution of clinical symptoms among patients

Symptoms	Time	Lateral Anal Sphincterotomy Group	Manual Anal Dilatation Group
Pain	Pre operative	25	25
	Post operative	1	0
Bleeding	Pre operative	22	21
	Post operative	0	0
Constipation	Pre operative	25	25
	Post operative	0	0
Fissure	Pre operative	25	25
	Post operative	1	0

DISCUSSION:

Demographic data:

In our study, Most of the cases were age group of 31-40 and 41 to 50 years in both the groups. The mean age was 41.00 years in lateral anal sphincterotomy group and 39.48 years in manual dilatation group. This was comparable to the following studies.

Dr. Dhiraj Agarwal *et al.;* who showed that mean age was 34.87 years of age (18 to 50 years) in lateral anal sphincterotomy Group and 32.67 years of age (18 to 50 years) in manual dilatation group [6]. S L Jensen *et al.;* median age in years was 38 years in lateral anal sphincterotomy group and 40 years in manual dilatation group [7].

Ram E *et al.;* average age was 42.4 years (SD 12.5 years) in both the group [4]. Sex distribution was 56% males and 44% females in lateral anal sphincterotomy group and 60% males and 40% females in manual dilation group. This was comparable to the following studies. Dr. Dhiraj Agarwal *et al.;* shows sex distribution 64% males and 36% females in Lateral Sphincterotomy Group and 68% males and 32% females in Manual dilation group [6].

S L Jensen *et al.;* show as 60% males and 40% females in Lateral Sphincterotomy Group and 62% males and 38% females in Manual dilation group [7]. Distribution of pain, rectal bleeding and constipation and fissure: In our study, presenting symptoms of Pain and constipation was found to be all the cases (100%) in both the groups. Bleeding was found in 88% cases in lateral sphincterotomy group and in 84% in manual dilatation group.

During post operative follow up pain, rectal bleeding and constipation significantly reduced. This was comparable to the following studies. (Table 2). Dr. Dhiraj *et al.;* study shows the distribution of pain, rectal bleeding and constipation and fissure is shown in following table-3 [6].

Tayfun *et al.;* study shows the distribution of pain, rectal bleeding and constipation and fissure is shown in following table-4 [8]

Table-3: Comparision of clinical symptoms of Lateral Anal Sphincterotomy Group and Manual Anal Dilatation Group by Dhiraj *et al.* [6]

Symptoms	Time	Lateral Anal Sphincterotomy Group	Manual Anal Dilatation Group
Pain	Pre operative	44	45
	Post operative	6	5
Bleeding	Pre operative	39	39
	Post operative	4	0
Constipation	Pre operative	33	30
	Post operative	6	4
Fissure	Pre operative	50	50
	Post operative	5	4

Table-4: Comparision of clinical symptoms of Lateral Anal Sphincterotomy Group and Manual Anal Dilatation Group by Tayfun *et al.*[8]

Symptoms	Time	Lateral Anal Sphincterotomy Group	Manual Anal Dilatation Group
Pain	Pre operative	17	18
	Post operative	3	1
Bleeding	Pre operative	13	13
	Post operative	2	0
Constipation	Pre operative	11	10
	Post operative	3	2
Fissure	Pre operative	20	20
	Post operative	3	2

Location of the fissure:

Most of the chronic anal fissure where located in midline posteriorly. About 88% in lateral sphincterotomy group and 92% in manual dilatation group where located posteriorly. Anterior fissure was found in 8% in both the groups. This was comparable to many studies.

Aneasthesia used:

In lateral anal sphincterotomy 48% patients where operated under local anaesthesia and no patiens in manual anal dilatation group where operated under local anesthesia. In our study type of anaesthesia used statistically significant.

Operative time:

The Mean operative1 time was 3.07 minutes (±0.55) in lateral sphincterotomy group where as it was 7.02 minutes (±0.56) in manual dilatation group. Operative time in manual dilatation group was significantly longer than the operative time in lateral sphincterotomy group. In our study operative time are statistically highly significant. None of the previous studies performed compared mean operative time.

Post operative ambulation:

In lateral sphincterotomy group 100% patient were mobilized within 24 hours but in manual dilatation group no patient was ambulated within 24 hours. None of the previous studies performed post operative ambulation time.

Post operative complications:

All the post operative complications were noted and evaluated in both the groups. Post operative pain was recorded at 24 hours after operation using visual analog scale (VAS) pain scoring system the mean pain score at 24 hours was 4.36 in lateral anal sphincterotomy group and 5.28 in manual dilatation groups. This was statistically significant between groups. Post operative urinary retention was found in 4% (1 case) in lateral sphincterotomy group and 16% (4 cases) in manual dilatation group. Patient where are encouraged to mobilize after operation to pass urine. Wound infection was found in 4% (1 case) patient lateral sphincterotomy group and none in manual dilatation group. This was explained by the fact, that patient was not compliant. None of the previous studies performed compared these two post operative complications.

Incontinence of flatus found in 8% (2 cases) in lateral sphincterotomy group and 32% (8 cases) in manual dilatation group. Incontinence of feaces and faecal soiling of under wear was absent in lateral sphincterotomy group and was present in 16% (4 cases) manual dilatation group. This type of incontinence was temporary (transiently present for 4 to 6 days) and resolved was noted after removal of anal pack.

Watts *et al.;* study shows incontinence of flatus in 19% (24 cases) Lateral Anal Sphincterotomy group and incontinence of feaces in 8% (11 cases) while in manual anal dilatation group, incontinence of flatus in 13% (12 cases) and incontinence of feaces in 2 % (2 cases) of the patients [2]. Whereas Hoffmann D.C. *et al.;* study shows incontinence of flatus in 6% (6 cases) and incontinence of feaces in 1% (1 case) in lateral sphincterotomy group while in incontinence of flatus in 13% (12 cases) and incontinence of feaces in 2% (2 cases) in manual dilatation group[9].

S L Jensen *et al.;* study shows incontinence of flatus and incontinence of feaces and faecal soiling of underwear was absent in lateral sphincterotomy group while incontinence of flatus was present in 28% (8 cases) and incontinence of feaces in 7% (2 cases) in manual dilatation group[7].

Recurrence:

In the present study, only one patient had recurrence in lateral sphincterotomy group and no recurrence occurred in manual dilatation group in the follow up. Dr. Dhiraj Agarwal *et al.;* shows that fissure recurred in 10% of patients (5 cases) in lateral sphincterotomy group and 8% of patients (4 cases) in manual dilatation group [6]. S L Jensen *et al.;* show 3.3% of the patients (1 case) recurrence in lateral sphincterotomy group and 28. 57 % of the patients (8 cases) in manual dilatation group [7]. Ram E *et al.;* fissure recurred in 2% of patient (1 case) in lateral sphincterotomy group and 11% of patient (6 cases) in manual dilatation group [4]. Abdul-Wahid M Salih *et al.;* show that recurrences occurred in 2.5 % of patient (3 cases) had recurrences in lateral sphincterotomy group.

Median time of healing:

In lateral sphincterotomy group, time of healing of fissure was <21 days in 28% (7 case) of the patient and in 68% of the patient (17 case) fissured healed between 21-42 days. In 4% (1 case) of patient fissure did not heal. In manual dilatation group time of healing was < 21 days in 4 %(1 case) and between 21-42 days in 96% (24 case) of patient. It was comparable to S L Jensen *et al.;* study which show median time of healing as 21 days in both the groups [7].

Median days of off work:

In lateral sphincterotomy group 96% patient resume there daily activity in <6 days. While in manual dilatation group 64% of patient resume there daily activity. This was comparable to S L Jensen *et al.;* show median days of off work as 2 days (1 – 4 days) lateral sphincterotomy group and 3 days (0 – 6 days) in manual dilatation group.[7].

Patient satisfaction:

In lateral sphincterotomy group 96% (24 cases) of patient were satisfied while in manual dilatation 88% (22 cases) of patient were satisfied. This was comparable to following studies. Abdul-Wahid M Salih *et al.;* 96.25% (77 cases) of patient where satisfied in lateral sphincterotomy group and 3.25% (3 cases) where not satisfied [5] and Ram E, *et al.;* showed that patient satisfaction score was higher in 91 % lateral sphincterotomy group and 74% manual dilatation group [4].

CONCLUSION

In our study, it has been shown that all patients after manual dilatation of the anus has significant reduction in anal pain and provides symptomatic relief that is equivalent to lateral internal anal sphincterotomy. In our study we have shown that manual dilatation of the anus have more incidence of incontinence of flatus and feaces than lateral internal anal sphincterotomy but this functional result impairment is temporary and resolve within a week.

Moreover, lateral internal anal sphincterotomy can be performed under local anaesthesia, thereby avoiding the cost and disruption of admission to hospital. In our opinion, Lateral internal anal sphincterotomy should be procedure of choice for chronic anal fissure because it relieves symptoms and heal the fissure in nearly all patients. The advantages are good symptomatic relief, high rate of healing and good patient satisfaction. It has very few complication and negligible rate of recurrence and incontinence.

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