



A COMPARATIVE PROSPECTIVE STUDY OF MEDICAL TREATMENT VERSUS SURGICAL LATERAL ANAL SPHINCTEROTOMY (LAS) IN CASES OF ANAL FISSURE

General Surgery

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ABSTRACT

Objective: The objective of this study was to determine whether the medical treatment of anal fissure can be an effective alternative for surgery. The study was undertaken to compare the fissure healing time and pain relief between medical and surgical method.

Methodology: This was a comparative study carried out at a tertiary care hospital from January 2019 to January 2020. We randomly selected 80 patients with chronic anal fissure and divided them into 2 equal groups. Group A, which includes patients who received medical treatment with topical diltiazem and lignocaine while Group B, which includes patients who underwent lateral anal sphincterotomy surgery. The results were then correlated statistically.

Results: The response to treatment for relieving pain was 80% and 95% in group A and B respectively. While fissure healing in group A and B was 80% and 90% respectively.

Conclusion: Despite good response to medical treatment, surgical treatment was more effective and treatment of choice in patients who are willing to have surgery.

KEYWORDS

Anal fissure; Diltiazem; Lignocaine; Lateral anal sphincterotomy

INTRODUCTION:

Anal fissure is a longitudinal wound in the anoderm just below the dentate line, and it is often located at the posterior midline of the anus (1,2). It is one of the most common pathologies of the anorectal region and affect the quality of life as it causes pain and emotional stress while defecation (1,3). It is due to increased sphincter tone which is significantly higher [even at rest] in patients with an anal fissure, along with the passage of hard fecal material (4,5).

Anal fissure is known as Acute type; mostly relieving in one week and Chronic type; usually lasting for more than 6 weeks, having a hypertrophic papilla of the fissure and a sentinel tag at bottom (1-6,7).

Based on the pathophysiology, treatment of anal fissure usually involves reduction of sphincter pressure whether by physical or chemical means. Medical treatment of anal fissure has been known quite effective in recent literature (2-5, 8, 9). Currently used medical methods are use of ointments containing lignocaine, calcium channel blockers i.e. diltiazem, nifedipine and nitroglycerine.

The various surgical methods are lord's dilatation, lateral anal sphincterotomy, trans fissural sphincterotomy and various anal advancement flaps.

In our study, we are going to compare the efficacy of diltiazem and lignocaine topical ointments versus lateral anal sphincterotomy for chronic anal fissure.

AIMS AND OBJECTIVES:

1. To compare pain relief between medical and surgical method.
2. To compare the fissure healing time between medical and surgical method.

MATERIALS AND METHODS:

The present study is a prospective study carried out with 80 patients at the Department of General Surgery at GCS Medical College, Hospital and Research Centre, Ahmedabad between January 2019 and January 2020.

Inclusion Criteria:

1. Patients suffering from anal fissure for more than 6 weeks.
2. Patients having sentinel tag and hypertrophied anal papilla to confirm the chronicity.

3. Patient between the age group of 25 to 80 years.

Exclusion Criteria:

1. Patients with associated other anorectal diseases like perianal abscess, inflammatory bowel diseases (IBD), etc.
2. Breast feeding and pregnant women.
3. Medically unfit patients.
4. Patients not giving consent for participation in the study.

The Selected Patients Were Randomly Divided Into Two Groups-

- Group A (40) - Patients to be treated with topical diltiazem and lignocaine ointments.
- Group B (40) - Patients to undergo lateral anal sphincterotomy.

Detailed history were recorded from patients and clinical examination were performed. The findings were recorded in the pro forma.

Medical Method:

Medical treatment period was of 8 weeks of using hot sitz bath for 15 minutes twice a day followed by using topical agents (2% diltiazem and ointment lignocaine) after each sitz bath. Patients were given combination of liquid paraffin and milk of magnesia as a stool softening agent in dose of 3 teaspoonful at night along with diet management to relieve the constipation.

Surgical Method:

The surgical method was followed as below in our study.

Pre-operative Preparation:

All patients underwent the routine blood investigations like complete blood count, random blood sugar, s. creatinine, s. bilirubin, SGPT to exclude any major medical disorders. Chest x-ray and ECG were done for anaesthetic fitness.

All patients received injection ceftriaxone 1 gram intravenously half hour before induction.

Operative method:

Lateral internal sphincterotomy was carried out under saddle block with lithotomy position and buttocks stretched apart.

- After painting and draping, incision kept across the intersphincteric groove, separating the internal sphincter from the anal mucosa by blunt dissection, and dividing the internal

sphincter using scissors.

- In this technique the lower one third to one half of the internal sphincter is divided, to lower the resting pressure without destroying the effect of the whole sphincter.



Image 1: Pre-operative image. Yellow arrow showing sentinel tag below the fissure. White arrow showing hypertrophied papilla above the fissure.

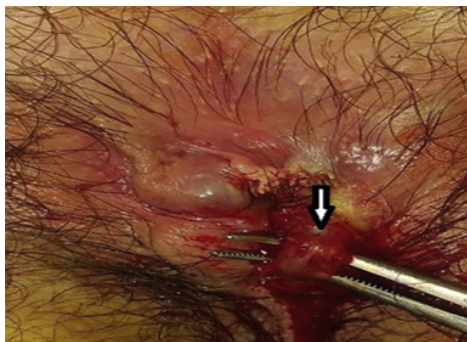


Image 2: Intra Operative Image. Arrow Showing The White Fibers Of Internal Sphincter Over The Artery Forceps, Which Are Cut.

- Post-operative care and follow up:
All patients in post-operative period were kept nil by mouth for 4 hours.

On the day of operation, post operatively, all patients were given injection Ciprofloxacin 500 mg, 12 hourly and injection Metronidazole 400 mg, 8 hourly. All patients were given intravenous pain killer, injection Diclofenac sodium 50 mg, 8 hourly.

From post-operative day 1, all patients were shifted to oral antibiotics and analgesics, i.e. Tablet Ciprofloxacin 500 mg 12 hourly; Tablet Metronidazole 400 mg 8 hourly; Tablet Diclofenac Sodium 50 mg 12 hourly upto 5 days and Tablet Pantoprazole 40 mg once a day in morning before breakfast.

Starting from immediate post-operative period upto 7th day post operatively all patients were advised to take Liquid Cremaffin 3 spoonful before going to sleep.

Patients were followed at first, second, fourth and eight weeks thereafter.

OBSERVATIONS AND RESULTS:

Common complaints of patients were anal pain and bleeding per rectum. Most of the anal fissures were situated posteriorly (80%) and remaining were anteriorly. After starting the therapies for each group, patients were followed at first, second, fourth and eighth weeks for assessing response.

Table 1: Gender Distribution

	Diltiazem And Lignocaine (group A)	Surgery (group B)
MALE	22	24
FEMALE	18	16
TOTAL	40	40

In group A there were 22 males (55%) and 18 females (45%) and in group B there were 24 males (60%) and 16 females (40%).

The mean age of patients in group A was 40.26 ± 12 years (Range from 25-80 years) and in group B was 41.04 ± 13 years (Range from 27-80 years).

Pain relief was analyzed based on the visual analog scale (VAS). Patients were given VAS to score their pain pre-operatively and post-operatively. Pain relief was considered when there is score of 2 or less according to VAS. Pain relief was noted at first, second, fourth and eight week post-operatively.

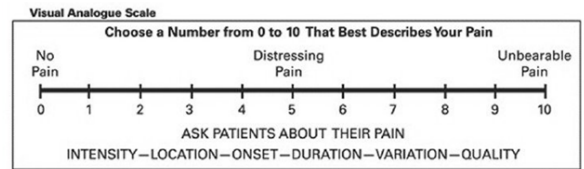
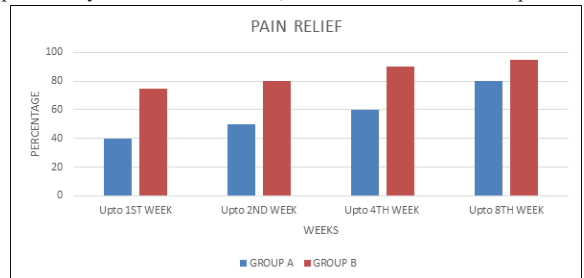


Table 2: Pain Relief

	Upto 1 st week	Upto 2 nd week	Upto 4 th week	Upto 8 th week
GROUP A	16 (40%)	20 (50%)	24 (60%)	32 (80%)
GROUP B	30 (75%)	32 (80%)	36 (90%)	38 (95%)

In our study, in group A, pain was relieved in 16 patients upto the end of the first week, the numbers increased cumulatively to 32 patients by the end of 8th week, which accounts for 80% patients. While in group B, pain relieved in 30 patients upto the end of the first week, the numbers increased cumulatively to 38 patients by the end of 8th week, which accounts for 95% patients.



Graph 1: Pain Relief

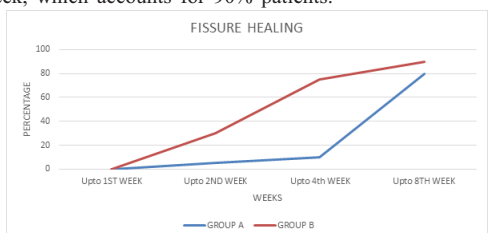
On applying the chi square test to the above data the chi square value is 1.5094 and the p value is >0.1 which suggests that the data is not significant.

Response to treatments was defined as both pain relief and fissure healing (complete epithelialization of the wound with no erythema or inflammation).

Table 3: Fissure Healing

	Upto 1 st week	Upto 2 nd week	Upto 4 th week	Upto 8 th week
GROUP A	0 (0%)	2 (5%)	4 (10%)	32 (80%)
GROUP B	0 (0%)	12 (30%)	30 (75%)	36 (90%)

In our study, in group A, fissure healed in 2 patients by the end of second week, the numbers increased cumulatively to 32 by the end of 8th week, which accounts for 80% patients. While in group B, fissure healed in 12 patients by the end of second week, which increased cumulatively to 36 patients by the end of 8th week, which accounts for 90% patients.



Graph 2: Fissure Healing

On applying the chi square test to the above data the chi square value is 15.2894 and the p value is <0.05 which suggest that the data is significant.

DISCUSSION:

There have been many changes in the treatment of anal fissure since last decade (1). Medical treatment, as not injuring the anal sphincter, and being non-invasive, is presumed as the first option (3, 5, 8-10). But surgical sphincterotomy remains the gold standard for treatment of anal fissure (6, 7).

Mostly used medications are diltiazem, nitric oxide derivatives and botulinum toxin injections. The response of pain to medications (diltiazem) in our study was similar to that of previous studies (9).

Regarding pain response, there was no significant difference between the two groups of surgical and medical treatment ($p>0.05$) in our study. This could be due to small sample size. The results of this study are similar to those of other studies.

Table 4: Comparison Of Pain Relief In Medical Method And Surgical Method In Present Study With Other Studies

	Medical method	Surgical method
Hashmat A et al. (11)	64%	100%
Sileri P et al. (4)	-	100%
Ali Hussein et al. (13)	75%	100%
Present study	80%	95%

In our study, by medical method, pain relief was more (80%) compared to previous studies as shown in the table above. But by surgical method, pain relief was very similar (95%) to the previous studies as shown in the table above.

Fissure healing in medical group was seen rather later than in surgical group. In our study, surgical treatment accelerated wound healing process and there was significant difference between the two groups ($p<0.05$). This result is similar to those of other studies (4, 19).

Table 5: Comparison Of Fissure Healing In Medical Method And Surgical Method In Present Study With Other Studies

	Medical Method	Surgical Method
Hashmat A et al. (11)	60%	100%
Sileri P et al. (4)	-	100%
Ali Hussein et al. (13)	70%	95%
Present study	80%	90%

In our study, by medical method, fissure healing was more (80%) compared to previous studies as shown in the table above. But by surgical method, fissure healing was similar (90%) to the previous studies as shown in the table above.

CONCLUSION:

It seems that despite good response to medical treatment, surgical treatment is more effective. Medical treatment especially treatment with diltiazem due to lack of side effects, is of choice in patients who are not willing to undergo surgery.

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