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A Prospective Observational Study in the Management of Primary Fissure in Ano in a Tertiary Care Centre in Tamil Nadu, South India - A Single Institution Study

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Abstract

Fissure in Ano or Anal Fissure is a common Anorectal condition occurring in both genders across all age groups. It can be a very troubling condition because, if presented as acute, the severity of patient discomfort and extent of disability far exceeds that which would be expected from a seemingly trivial lesion.

In this study, we included 108 patients and divided them equally between three groups of 36 each. One group is treated surgically, while another group is treated medically by a non-randomized control study.

Group A - Surgically managed group. This group treated patients surgically with open partial lateral internal anal sphincterotomy. Patients treated surgically had few complications in the perioperative period, subsiding within 4 weeks.

Patients treated surgically had few complications in the perioperative period.

Group B - Medically managed group. This group treated patients with a topical application of 0.2% Glyceryl Trinitrate (GTN). In this group after 1 month of treatment, patients who are not satisfied either discontinued treatment or required conversion to surgery. A complication of Glyceryl Trinitrate is a headache that occurs in most patients.

Group C - Conservatively managed group. Patients in this group were treated conservatively with a Sitz bath with Betadine and Topical application of 2% Diltiazem cream. In this group after 1 month of treatment, patients who are not satisfied either advised topical 0.2% GTN application or conversion to surgery. A complication of Diltiazem includes hypotension and itching at the site of application.

Result: Through this study, we conclude that surgical management has better outcomes in the treatment of primary fissure in Ano without any underlying disease.

Keywords: Ano-Rectal condition; Fissure in Ano; Glyceryl Trinitrate; Open partial lateral internal Anal Sphincterotomy; Diltiazem

Abbreviations

- GTN - Glyceryl Trinitrate.
- PR - Per Rectum.
- DRE - Digital Rectal Examination.
- CBC - Complete Blood Count.
- RFT - Renal Function Test.
- LFT - Liver Function Test.
- ECG - Electro Cardiogram.
- RBS - Random Blood Sugar.
- FBS - Fasting Blood Sugar.
- PPBS - Post Prandial Blood Sugar.
- mg - Milligram.
- IM - Intra Muscular.
- IV - Intra Venous.
- ATD - After the Test Dose.
- SBMCH - Sree Balaji Medical College & Hospital.

Introduction

Anal Fissure, also called Fissure in Ano is a common Anorectal condition occurring in both genders across all age groups.

An anal Fissure is a linear ulcer or crack in the squamous lining of the anal canal that may extend from the mucocutaneous junction to the dentate line. It can be acute or chronic. It may occur at any age but is usually a condition of young adults. Both sexes are affected equally [2, 3].

Management of Fissures in Ano is controversial across the timeline of surgery and it is as old as the surgery itself.

Aim of the Study

- Management efficacy between two different modalities of conservative management and Surgical management in the management of Fissure in Ano.
- Incidence - Age / Sex
- Complications associated with medical, conservative and surgical management.

Materials and Methods

Sample Size: 108 Cases

Study Area: Department of General Surgery, SBMCH

Study Duration: 6 months - July 2022 to December 2022

Patient Selection: All patients presenting to General Surgery OPD with bleeding Per Rectum (PR) and burning sensation during or after defecation were examined to rule out other causes of bleeding PR. After excluding all patients diagnosed with Fissure in Ano were taken into the study.

Patients were counselled regarding both medical and surgical lines of management. Based on patient decisions, the severity of the disease and patient general condition patients were allotted into study groups.

Group A - Surgical Management.
Group B - Medical Management.
Group C - Conservative Management.

Inclusion Criteria

- Both Sex.
- 18 to 60 years of age.
- Diabetes Mellitus.
- 1st incidence of fissure in Ano.

Exclusion Criteria

- Previous surgery.
- Grade 1 & 2 hemorrhoids.
- Pregnancy.
- Ulcerative colitis.
- Bleeding diathesis.

Methodology

These patients were broadly divided into three groups of 35 patients each.

Group A - Surgical Management for fissure in Ano.
Group B - Medical Management for fissure in Ano.
Group C - Conservative Management for fissure in Ano.

Study type

Prospective observational study.

Sampling Method

Purposive sampling.

In this method, patients have explained the available methods of management, the methods suitable for them, and the treatment options best for their current condition, based on this patients are allotted to the study group. In certain cases, such as acute fissure, bleeding fissure patients are directly assigned to the Surgical management group.

Patient management protocols for both groups are as follows:

- Admission to the general surgery ward.
- Routine Blood investigations.
- Clinical examinations including Digital Rectal Examination.
- Individual management protocol for Both groups.

A routine blood investigation at SBMCH includes CBC, RFT, Serum Electrolytes, ECG, Chest X-ray, LFT, and Urine Routine Examination. In the case, of Diabetic patients, FBS and PPBS were also done.

Group A Patient

This group of 36 patients is allotted for Surgical Management. These group of patients are pre-operatively prepared with Proctoclysis Enema the night before surgery and the on the morning of surgery. Following this, these patients are treated with Open partial lateral internal Anal Sphincterotomy [6]. Postoperatively patients are advised to do a Sitz bath with 5% Betadine twice daily approximately 5 minutes each time, along with High fibre diet, adequate hydration and prophylactic oral Antibiotics Tablet Ciprofloxacin 500mg twice daily and Tablet Metronidazole 400mg thrice daily for 5 days [7].

Group B Patient

This group of 36 patients is allotted for medical management. 0.2% GTN ointment applied topically over the perianal region twice daily, along with a high fibre diet, adequate hydration and Oral prophylactic antibiotic Tablet Ciprofloxacin 500mg twice daily and Tablet Metronidazole 400mg thrice daily for 5 days.

With all this line of management, patients have also been advised to Sitz baths with 5% Betadine twice daily for approximately 5 minutes each time, followed by the application of 0.2% GTN ointment.

Group C Patient

This group of 36 patients is allotted for conservative management. They were treated with a sitz bath with 5% betadine solution 6th hourly, Topical application of 2% Diltiazem gel after sitz bath and oral Bulk-forming agent. If constipation is present Syrup. Duphalac is added 30ml at bedtime for 5 days. During these 5 days, patients were observed for worsening symptoms.

Patients were observed for expected complications. Patients were discharged on the 5th day. They were asked to follow up in our patient department every week for a period of one month.

PRE-OP INSTRUCTIONS

i. Informed written consent.
ii. Complication consent.
iii. NPO from 11 pm of the previous day.
iv. Injection Tetanus Toxide 0.5cc IM.
v. Injection Xylocaine 2% Test dose.
vi. Pre-Operative Antibiotic Prophylaxis with Injection Cefotaxime 1g IV ATD, only 2 doses.
vii. Syrup Dulcolax 30ml at bedtime.
viii. Tablet Diazepam 5mg at bed time.
ix. Skin preparation of perineum, abdomen and back.
x. Proctoclysis Enema at 8 pm and 6 am.
xi. In the case of patients with Type 2 Diabetes Mellitus, FBS, Serum Electrolytes and urine acetone on the day of surgery.

Analysis and Results

This study is based on the analysis of 108 patients who were treated for Fissures in Ano at Sree Balaji medical college Hospital and research institute.

Age and Sex Distribution

The age and sex distribution of these 108 patients are shown in Table 1.1. Out of these, 7 3 were male and 35 were female. Male to female ratio is approximately 3:1. Lowest age of patients in this study is 16. The highest age of the patient in this study was 62 years. The maximum number of patients was in the age group of 41- 50.

Age group	*Males*	*Females*	*Total*	*%*
11-20	8	4	11	9.4
21-30	13	6	19	18.2
31-40	19	9	27	28.4
41-50	27	12	37	35.5
51-60	6	3	9	8.7
>60	3	1	4	3.8

Table 1.1: Age and Sex Distribution.

Symptomatology

The symptomatology of these patients is shown in Table 1.2. The majority of these patients had a history of pain during defecation and bleeding per rectum. Other symptoms were swelling in the perianal region and retention of urine. [10,11].

Symptom	*No. of Cases*	*%*
Pain during defecation	98	91.3
Bleeding per rectum	3	2.8
Both	6	5.7
Swelling	1	0.9

Table 1.2: Symptomatology.

Predisposing Factors and Aetiology

Most of these patients had constipation as the major predisposing factor. Other predisposing factors were laxative abuse, post-pregnancy, tuberculosis, inflammatory bowel disease and immunocompromised state. In this study, 1 patient had a history of GI tuberculosis, 2 patients were HIV positive and 2 patients presented immediately after delivery and 2 patients had a history of chronic laxative abuse [12, 13].

Aetiology	*No. of Cases*	*Percentage*
Constipation	101	96.1
Post pregnancy	2	1
Tuberculosis	1	0.9
Laxative abuse	2	1
Immunocompromised	2	1
Inflammatory bowel disease	Nil	Nil

Table 1.3: Aetiology and Predisposing Factors.

Location of Fissure

The majority of the patients who were examined by digital rectal examination had a posterior fissure in Ano.

The minority of patients had anterior fissures which are more common in females. A lateral Fissure was seen in a few patients, the details are shown in the table.

Location	*Total*	*Male*	*Female*
Posterior	85	79	8
Anterior	12	6	7
Lateral	3	1	2

Table 1.4: Location of Fissure.

Associated Factors

In both, the study groups, the majority of patients with a chronic fissure for more than 6 months had a sentinel skin tag along the lower part of the Existing fissure, in addition to a Hypertrophied Papilla in the upper part as given in Table 1.5.

Associated Factors	*No. of Cases*	*Percentage*
Sentinel skin tag	91	84.6
Hypertrophied papilla	13	9
Both	5	6.4

Table 1.5: Associated Factors.

Medical Management

36 patients out of 108 were managed by the medical methods of treatment. All patients have been advised a high-fibre diet, adequate hydration, and oral antibiotics.

All patients were put on 0.2% Glyceryl trinitrate ointment twice daily topically after the Sitz bath.

All patients were followed weekly in the outpatient department for one month.

Results were inferred by relief of pain and healing of Fissure 26 out of 36 patients had relief of symptoms, accounting for 71.4% of patients treated medically. Other patients had persistent pain and complications like headaches.

Symptomatology	*Patient*	*Male*	*Female*	*%*
Complete pain relief	26	18	8	71.4
No pain relief	10	6	4	28.6

Table 1.6: Patient Ratio in Medical Management.

10 of the patients who were managed medically required conversion to surgical treatment due to failure of medical management.

Conservative Management

36 patients out of 108 were managed by the medical methods of treatment. All patients have been advised to have a high-fibre diet and adequate hydration.

All patients were put on a Sitz bath with 5% betadine solution 6th hourly followed by 2% Diltiazem gel for topical application.

All patients were followed weekly in the outpatient department for a period of one month.

Results were inferred by relief of pain and healing of Fissure 11 out of 36 patients had relief of symptoms, accounting for 28.57% of patients treated medically.

Symptomatology	*Patient*	*Male*	*Female*	*%*
Complete pain relief	11	3	7	28.57
No pain relief	25	18	7	71.43

Table 1.7: Patient Ratio in Medical Management.

25 of the patients who were managed conservatively required conversion to surgical treatment due to failure of conservative management.

Surgical Management

36 patients were allotted for surgical management of Primary fissure in ano, due to patient compliance and failure of medical management and conservative management 10 patients and 25 patients respectively are reassigned to this group. 71 patients out of 108 were treated by a surgical line of management. All patients were treated by open partial lateral anal sphincterotomy under spinal anaesthesia. The duration of the surgery was approximately twenty minutes. 67 out of 71 patients had relief of pain and healing of fissure, which corresponds to 93.4%. Some of the patients had complications as follows.

10 patients who had failed in medical management and 25 patients who had no relief from conservative management were also included in the surgical line of management along with the allotted 36 patients in this group.

Complications	*No. of Patients*	*Percentage*
Pain	17	22.5
Seroma	3	5.7
Haematoma	2	3.8
Infection	2	3.8
Perianal abscess	3	4
Fistula	NIL	NIL
Incontinence	NIL	NIL

Table 1.8: Complications of Surgery.

Most of the surgical complications subsided within two weeks and the patient had complete relief of symptoms. 9 out of 71 patients treated surgically did not turn up for follow-up.

Discussion

An anal fissure is a linear tear in the anal mucosa formed between the mucocutaneous junction and the dentate.

It's a very common surgical problem encountered in adults, posing a great challenge in treatment.

Although surgical sphincterotomy remains the gold standard for treatment, Non-invasive Medical treatment is presumed as the first option.

The optimal therapeutic algorithm in the treatment of anal fissures is still debated.

In the present study, a total of 108 patients were included. Different treatment modalities carry their own merits and demerits. We have carried out A prospective observational clinical study to compare medical, conservative and surgical methods in the treatment of anal fissures.

Though the allotted study groups look similar, the key difference between medical and conservative management is antibiotic usage. Minimal oral antibiotics were used in the medically managed group, as these groups had minimal bleeding at the time of presentation which is not the case in the conservatively managed group.

The incidence of Anal fissures was more in Males (~78%) compared to females (~37%). Commonly encountered in the age group between 41-50 years.

All 3 study groups had similar presentations of pain and bleeding during defecation but with varying duration of symptoms.

Location of fissures

The most common location of fissures encountered was in the posterior midline of the anal canal developing secondary to ischemia as there is decreased blood supply to the region (1).

The occurrence of anterior fissures was slightly more common in females and lateral fissures were seen in 2 patients with H/O tuberculosis and HIV.

Medical and conservative management

In most medical facilities Medical and conservative management includes topical application GTN, isosorbide dinitrate, topical zinc, nitric oxide, topical lignocaine, diltiazem, and sitz bath with 5% betadine alongside a fibre-rich diet and adequate hydration.

In our study along with diet modifications and proper hydration, the medically managed group was treated with a topical application of 0.2% GTN following a sitz bath with betadine and the conservatively managed group was treated with 2% Diltiazem following a sitz bath with oral laxatives.

The commonly observed adverse effect of NTG was Severe headache and tachyphylaxis.

Even though pain relief was considerably higher in the medically managed group than in the conservatively managed group, the results were not significant as overall less effective in wound healing. Furthermore, almost half of the patients required surgical management.

Surgical management

The most commonly employed Surgical treatment options are open lateral partial internal sphincterotomy and lateral sphincterotomy with flap closure.

In our study, we have treated patients with open lateral partial internal sphincterotomy. And the ultimate goal of relieving sphincter pressure and accelerated wound healing was achieved with surgical management. The most important post-operative complication noted was pain and bleeding, which was mostly after the removal of the anal pack, which subsided within a period of two weeks.

Conclusion

During the period of study (July 2022 to December 2022), 108 patients were studied. These patients were broadly divided into Three groups of 36 each who were treated by medical, surgical and conservative methods respectively by purposive sampling. In this study, males were more commonly affected than females. The most common age group were 41-50yrs. Fissure in Ano is rare in children and old age. Majority of the patients presented with pain and bleeding during defecation. Constipation was the major predisposing factor in all cases. Most of the Fissures were located in the posterior midline. Most patients with long-duration Fissures had a sentinel skin tag and hypertrophied papilla. Anterior Fissures were slightly more common in females. Two patients were HIV+ and one patient with a history of tuberculosis had atypical lateral Fissures. No patients studied had inflammatory bowel disease.

Patients who were treated surgically by open partial lateral anal sphincterotomy had better relief of symptoms. Most patients managed medically by 0.2% GTN did not have relief of symptoms after one month of treatment, who either discontinued treatment or required conversion to surgery. The complication of Glyceryl trinitrate is a headache that occurred in most patients. Patients treated surgically had few complications in the perioperative period which subsided after two weeks.

Though this study is short-termed and various other parameters can be included in future to identify the long-term benefits of surgery and other options in the management of fissure in ano.

Result

Through this study, we conclude that surgical management has Superior outcomes in the treatment of primary fissures in Ano without any underlying disease.

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