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A COMPARATIVE STUDY BETWEEN TOPICAL APPLICATION OF NIFEDIPINE AND LATERAL INTERNAL SPHINCTERECTOMY FOR THE TREATMENT OF CHRONIC FISSURE IN ANO

General Surgery

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ABSTRACT

Background: Anal fissure is common anorectal problem which causes painful defecation and bleeding. This adversely affects the quality of life and daily activities of the patients. This study was carried out to compare the efficacy between topical use of nifedipine and lateral internal sphincterectomy.

Methods: This was a prospective study conducted over 82 patients in two groups, comprises 41 patients in each group. Group I patients underwent conservative management with nifedipine, patients in group II underwent lateral internal sphincterectomy.

Results: Pain control was 76% and 84% in patients with nifedipine treatment, whereas in sphincterectomy group 82% and 96% at 4 and 8 weeks respectively. Reduction in bleeding episode and sphincter relaxation was 96% and 98% in conservative versus surgical groups respectively at 8 weeks. Wound healing was also faster in lateral sphincterectomy group 92% compare to nifedipine group 73% at 8 weeks.

KEYWORDS

Fissure In Ano, Nifedipine, Lateral Internal Sphincterectomy

INTRODUCTION

Anal fissure is one of the common anorectal problems. This is painful condition affecting mainly young individuals. Anal fissure forms due to linear tear in the anal canal starts below the dentate line and extends up to anal verge.[1,2] Incidence is mainly in young individuals, equal among both male and females and accounts for about 1 in 350 individuals.[3, 4] Anal fissure can be divided into acute which resolves within one week and chronic which lasts for 6-8 weeks. Chronic fissures are characterised by internal sphincter exposure at the base of ulcer, sentinel pile mass distally and hypertrophied papilla proximally.[5,6] Most common location of the fissure is posterior midline in about 90% cases and in 10% cases found anteriorly. Atypical fissures are either multiple in numbers or located in other than midline positions and causes are crohn's disease, tuberculosis, malignancies etc. Causes of anal fissure not clearly understood, but this is probably due to increased sphincter pressure which is significantly higher even at rest.[7]

There are different treatment options for the fissure in ano; conservative management include laxatives, stool bulking agents, warm sitz's bath. Different topical agents are available; Glyceryltrinitrate, nifedipine (0.5%), diltiazem with 5% Lignocaine ointment. Surgical options are anal dilatation, lateral internal sphincterectomy.

METHODS

This prospective study was conducted over one year period in Indira Gandhi Institute of Medical Sciences, Patna in the department of General Surgery. Total 82 patients were enrolled for this study after fulfilling exclusion and inclusion criteria. These are divided into two groups Group I; underwent conservative management with topical application of nifedepine and group II; underwent lateral internal sphincterectomy with 41 patients in each group. This study was approved by institute ethical committee. Data were collected and analysed using SPSS Software.

Inclusion criteria

- Diagnosed cases of chronic fissure in ano with duration more than 6 weeks

Exclusion criteria

- Fissures associated with perianal abscess, fistula in ano, haemorrhoids,
- Fissures due to anorectal tuberculosis, malignancies, inflammatory bowel diseases
- Pregnant and lactating females
- patients below 11 years of age
- Patients not willing to join this study

RESULTS

In this prospective study we selected 82 patients and these are divided into 2 groups; group I and group II with 41 patients in each group. Minimum age of the patient in group I was 13 years and in group II was 15 years and the maximum age was 58 and 62 years respectively. In group I, 19 males 22 females, whereas in group II, 17 males and 24 females were selected (Table1).

Table1: Age and gender distribution of patients with fissure in ano

	Age (years)		Gender		
	Minimum	Maximum	Male	Female	Total
Group I	13	58	19	22	41
Group II	15	62	17	24	41
Total			36	46	82

Pain was the most common symptom 95% in group I, 93% in group II, followed by bleeding 78% in group I, 83% in group II and constipation 88% in group I, 85% in group II. Most common site of fissure is posterior location in more than 83% in group I and 85% in group II cases. Sphincter spasm was found in 93% in group I and 88% in group II patients (Table2).

Table2: Symptoms & Signs associated with fissure in ano

Symptoms	Group 1(no.)	Group 2(no.)
Pain	39(95%)	38(93%)
Bleeding	32(78%)	34(83%)
Constipation	36(88%)	35(85%)
Sentinel pile	27(66%)	31(76%)
Position of fissure Anterior	7(17%)	6(15%)
Posterior	34(83%)	35(85%)
Sphincter spasm	38(93%)	36(88%)

Patients were followed up and symptom reliefs were recorded at 4 weeks and 8 weeks. Relief of pain was in 94% patients underwent lateral internal sphincterectomy at 8 weeks in comparison with conservative treatment with nifedipine in 84% patients. Reduction in

bleeding episodes was 96% and 86% at 8 weeks respectively. Sphincter relaxation was 98% and 91% at 8 weeks in lateral internal sphincterectomy and nifedipine group respectively. Wound healing were 92% in surgical group in comparison to 73% in nifedipine group at 8 weeks. (Table3).

Table3: Comparison of two groups after treatment (both conservative and surgical)

Symptoms	Group 1		Group 2	
	4 weeks	8 weeks	4 weeks	8 weeks
Relief of pain	31(76%)	34(84%)	35(85%)	39(94%)
Reduction in bleeding	32(78%)	35(86%)	34(82%)	39(96%)
Sphincter relaxation	29(72%)	37(91%)	37(91%)	40(98%)
Wound healing	22(54%)	30(73%)	32(78%)	38(92%)

DISCUSSION

Both surgical and medical treatments are available for fissure in ano. Initial treatment is usually nonsurgical comprising dietary modifications and laxatives which softens stool and helps in faster wound healing. But the gold standard treatment for chronic fissure in ano is lateral internal sphincterectomy. This relaxes the sphincter hypertonicity which aids in faster wound healing and reduces anal pain.[8] In our study females (n=46) were more commonly affected than males (n=36) in the ratio of male: female (0.78:1). Similar previous studies done by Mapel DW et al.[9] symptoms include pain, bleeding and constipation; these are observed similarly in both group I and group II. On per rectal examination posterior fissure was found more commonly about 85% than anterior. According to Zaghiyan KN *et al*[10] *anterior fissures are less common* and occur in about 10% of patients, *more common in* women, *posterior* fissure is found in *85%* of patients.

In this study pain relief was 76% and 84% in group I whereas 85% and 94% in group II at 4 weeks and 8 weeks respectively. This shows that lateral internal sphincterectomy is better than conservative management in terms of pain reduction. MR Motie et. al. (2016)[11] had similar observation for pain relief; they observed 78% and 83% pain relief in patients using topical nitroglycerin ointment, and topical diltiazem ointment respectively and 100% pain relief after lateral internal sphincterectotomy at the end of 8th week.

In our study bleeding was reduced in 78% and 86% in case of medical treatment and 82% and 96% at 4 and 8 weeks respectively in case of lateral sphincterectomy. Wound healing was 54% and 73% in medical treatment but this was 78% and 92% in surgical treatment after 4 weeks and 8 weeks respectively. This shows lateral internal sphincterectomy is better in terms of bleeding episode reduction and wound healing duration. Similar result was shown by Tauro LF and Latif A1 in previous study.[12]

Conclusion: For management of chronic fissure in ano lateral internal sphincterectomy is superior option compare to topical treatment with nifedipine.

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