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RESEARCH ARTICLE

CLINICAL STUDY OF CHRONIC FISSURE-IN-ANO AND COMPARATIVE STUDY OF DIFFERENT MODALITIES OF ITS TREATMENT IN NMCH&RC

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Abstract

Anal fissure is a most common painful condition which causes considerable morbidity and affects the patient's quality of life to a greater extent. The majority of acute anal fissures heal spontaneously. However, some of the acute anal fissures do not resolve but become chronic. This warrants prompt treatment of the condition with appropriate methods. Selecting a better method of treating this condition that can achieve optimal clinical results and getting the least pain and inconvenience to the patient has always posed a challenge to the surgeons. This has led to the innovation of a number of surgical and pharmacological methods that relaxes the anal sphincter.

Aim of The Study: To study the different clinical presentations and etiological factors of the fissure in ano & different modalities of treatment of fissure in ano i.e., application of 2% Diltiazem ointment, Lord's Anal Dilatation and Subcutaneous Lateral Internal Sphincterotomy. & to evaluate the efficacy Subcutaneous Lateral Internal Sphincterotomy as a treatment modality in the management of chronic anal fissure in comparison with application of 2% Diltiazem ointment & with Lord's Anal Dilatation.

Materials & Methods: The material for the study was taken from the cases attending the surgery OPD and admitted In-patients of all the units of the Department of General Surgery, Navodaya Medical College Hospital & Research Centre, who were diagnosed to have Chronic anal fissure. This study was a prospective study which included 90 patients presenting with chronic anal fissure over a period of 18 months from November 2019 to May 2021. These patients were randomly selected and classified into three groups (A, B, C) each consisting of 30 patients & each group with one type of treatment modality, like group A for 2% diltiazem, B for lord's anal dilatation & C for LIS. Follow-up of the patients was done by history and per-rectal examination to assess the efficacy of the treatment and the complications like pain, bleeding, sphincter spasm, discharge per anum and incontinence.

Results : This study showed the results in favour of Lateral Internal Sphincterotomy with a healing rate of 100% with faster pain-relief and minimal or no complications if performed by the hands of an experienced surgeon, whereas latency in the clearance of symptoms and lesions was

seen with 2% Diltiazem and Lord's Anal Dilatation with adverse effects as well. With the healing rate of 100% of Fissure-in-ano in LIS therapy group, 81% in Lord's Anal Dilatation and 71% with topical 2% Diltiazem therapy, & adverse effects or complications being maximum in 2% Diltiazem therapy group, 13 patients (46%) when compared to Lord's Anal Dilatation (41% , 11 patients) and LIS group (32%, 09 patients), we conclude that Lateral internal sphincterotomy (LIS) appears to be the better line of treatment as there is 100% healing rate, minimal complications and no recurrence.

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Introduction:-

Proctological diseases are group of disorders or conditions affecting the mankind since time immemorial. They consist of a diverse set of disorders which causes significant discomfort to the patients. Majority of the population (30-40%) suffers from these conditions once in their lifetime.¹

Anal fissure, a common disease under this category was first described by Recamier² in 1829. Chronic anal fissure is a very common and distressing problem which occurs with equal frequency in men and women. It is a vertically oriented tear or ulceration in the squamous lining of the anal canal between the pectinate line and anal verge. This condition is associated with pain on defecation, bleeding per anum and anal sphincter spasm. They can affect any age group but occurs particularly in young and otherwise healthy adults but shows no sex preponderance. Most of the anal fissures are acute, resolving spontaneously or with increased dietary fibre intake and stool softeners where appropriate. Those lesions which fail to heal despite simple lifestyle modifications and persist beyond six weeks are considered as Chronic anal fissures.

A chronic fissure is usually deeper and generally has internal sphincter fibres exposed in its base. It is most frequently associated with a hypertrophic anal papilla at its upper aspect and with a Sentinel pile at its distal aspect.

A chronic fissure classically occurs at the posterior midline position (6 o'clock position), with the anterior midline position occurring in 10% of females and 1% of males. Fissures occurring at positions other than the 6 o'clock position or the presence of multiple fissures may suggest other pathological diseases like tuberculosis, inflammatory bowel disease, syphilis and immunosuppressive diseases like human immunodeficiency virus.

The clinical hallmark of anal fissure is pain during, and especially after, defecation. The pain may be short-lived with acute fissures, but may last hours or even become continuous in chronic cases. The pain is often severe enough for patients to dread or even attempt to avoid bowel movements altogether; some patients describe the pain as akin to passing razor blades or broken glass.

The standard algorithm for anal fissure therapy has traditionally consisted of a trial of fibre supplementation, sitz baths, and topical analgesics; if the pain is intolerable or if conservative care fails, surgery is performed (usually a lateral internal sphincterotomy).

Surgical techniques like manual anal dilatation or lateral internal sphincterotomy, effectively heal most fissures within a few weeks, but however may result in permanently impaired anal continence. This has led to the research for alternative non-surgical treatment, and thus 'Chemical Sphincterotomy' is being investigated and used as the possible first line of treatment for chronic anal fissure.

Topical nitroglycerine ointment has been shown to be very effective but it has a reduced compliance due to side effects such as headache. Topical calcium channel blockers offers a suitable alternative for fissure treatment, healing 65-95% cases with less side effects. Topical 2% diltiazem gel has been reported to cause healing of chronic anal fissures in 60-75%, with less than 80% patients having no adverse effects in previous studies.³

The present study comprises the comparison of 2% Diltiazem gel application, Lord's Anal Dilatation and Lateral Internal Sphincterotomy in the treatment of chronic fissure in anowithrespectto both efficacyand complications.

Materials & Methods:-

The material for the study was obtained from the cases attending the surgery OPD and admitted In-patients of all the units of the Department of General Surgery, Navodaya Medical College Hospital & Research Centre, who were diagnosed to have Chronic anal fissure. This study included 90 patients presenting with chronic anal fissure over a period of 18 months from November 2019 to May 2021. These patients were randomly selected and classified into 3 groups each consisting of 30 patients.

Group A: 30 patients who were subjected to chemical sphincterotomy using topical application of 2% Diltiazem gel.

Group B: 30 patients who were subjected to Lord's Anal Dilatation

Group C: 30 patients who were subjected to Lateral Internal Sphincterotomy.

Method of Collection of Data:-

The cases attending the surgery OPD, admitted In-patients of all the units of the Department of General Surgery who came with complaints of painful defecation with or without bleeding per rectum of more than 6 weeks duration were considered for this study. After obtaining approval and clearance from the institutional ethical committee, the patients fulfilling the inclusion criteria were enrolled for the study after obtaining informed consent. Prior Informed Consent was obtained before evaluating each patient.

A detailed history was taken and per-rectal examination was done to diagnose chronic anal fissure. Systemic examination and basic investigations done. Patients were randomly subjected to chemical sphincterotomy, Lord's Dilatation or surgical sphincterotomy. Chemical sphincterotomy involves local application of 2% Diltiazem gel thrice a day, for a period of 8 weeks. Surgical mode of management involves Lord's Dilatation & Lateral Internal Sphincterotomy. All the three groups were advised plenty of oral fluids, high fibre diet, laxatives and sitz bath. Patients were followed up for a period of 6 months.

Follow-up of the patients was done by history and per-rectal examination to assess the efficacy of the treatment and the complications like pain, bleeding, sphincter spasm, discharge per anum and incontinence.

Inclusion Criteria :

All patients who presented in surgical out patient department and those admitted In-patients with complaints of painful passage of stool, with or without bleeding of more than 6 weeks duration, diagnosed to be having chronic anal fissure based on the history and on clinical examination, of all age group and both the sexes, were included in the study.

Exclusion Criteria :

1. Haemorrhoids
2. Tuberculosis (TB)
3. Anorectal abscesses
4. Anal malignancies
5. Immunocompromised patients
6. Previous history of faecal incontinence or anal stenosis
7. Patients who have undergone previous anal surgeries
8. Patients with history of bleeding diathesis.
9. Elderly patients with a history of heart disease.

Investigations :

All patients were subjected to Routine laboratory investigations : Complete Haemogram, Renal function tests, Urine Routine & Microscopy, Diabetic profile, HIV, HbsAg, Chest X-ray PA View, ECG.

Relevant special investigations: Sigmoidoscopy and Colonoscopy (as and when required)

Follow-up

Patients were followed up at 2, 4, 6, 8, 14 weeks and 6 months. During each visit enquiries were made regarding the expected complications using a questionnaire & also examined. Results of the follow-up are tabulated and analysed.

Method of application of 2% Diltiazem gel

Patients were advised to apply 1.5 to 2 cms length of gel thrice daily at least 1.5 cm into the anus. Patients were instructed to wash hands before and after use of gel.

Lord's Anal dilatation

The patient under spinal or general anaesthesia was positioned in lithotomy. The anus is forcibly stretched by introducing first both index and then adding to it, the middle fingers of both hands; for four minutes. This method, which is also referred to as manual dilatation of the anus, involves the forceful stretching of the anal sphincter with as many as six or eight fingers. Postoperatively patients were kept nil orally till evening. The foot end of the table elevated. I.V. fluids were administered. A dose of sedation was given at night. All patients were given antibiotics post-operatively. On the same day liquid diet was administered and from first post-operative day onwards solid diet. All patients were given mild laxatives like Cremaffin (milk of magnesia 11.25 ml, liquid paraffin 3.75 ml, per 15 ml of emulsion) three tea spoons, at bedtime next day onwards following the operation and sitz bath was started from second post-operative day.

Post-operative assessment for bleeding and hematoma formation was done. Patients were discharged between 3rd and 4th post-operative days. They were followed up regularly.

Digital examination was done to assess the relaxation of sphincter or for infection.

Internal Sphincterotomy

Internal sphincterotomy was carried out under spinal anaesthesia. Postoperatively patients were kept nil orally till evening. The foot end of the table elevated. I.V. fluids were administered. A dose of sedation was given at night. All patients were given antibiotics post-operatively. On the same day liquid diet was administered and from first post-operative day onwards solid diet. The rest of the care was similar to as for Lord's anal dilatation.



Fig 1:- Chronic fissure in ano with sentinel pile.



Fig 2:- Lateral internal sphincterotomy- internal sphincter fibres being divided.



Fig 3:- Intra-operative image of Chronic fissure-in-ano with both anterior & posterior sentinel pile.

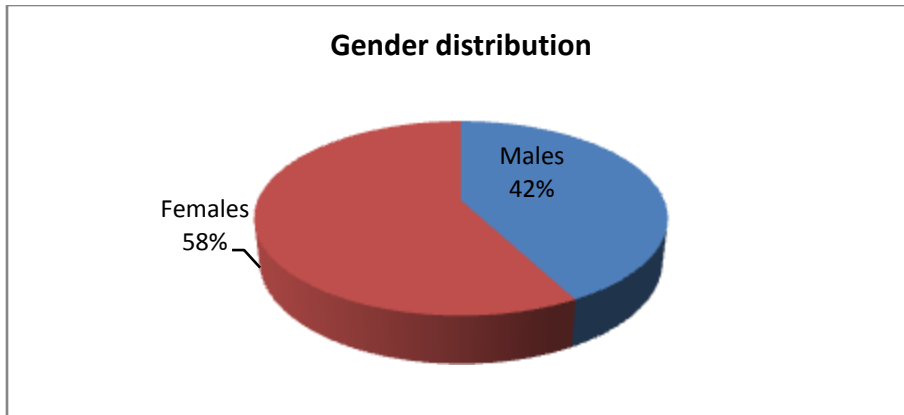
Statistical Analysis &Result:-

After obtaining the data, patients were randomly divided into three groups of thirty patients each. One group was subjected to chemical sphincterotomy, and one group for Lord’s Anal Dilatation and the other to surgical sphincterotomy. The data was later analysed from their proforma sheets.

Table 01:- Gender Distribution Among Patients:

PATIENTS	MALES	FEMALES
Total = 90	38	52

Pie chart No. 1:- Gender distribution among patients.

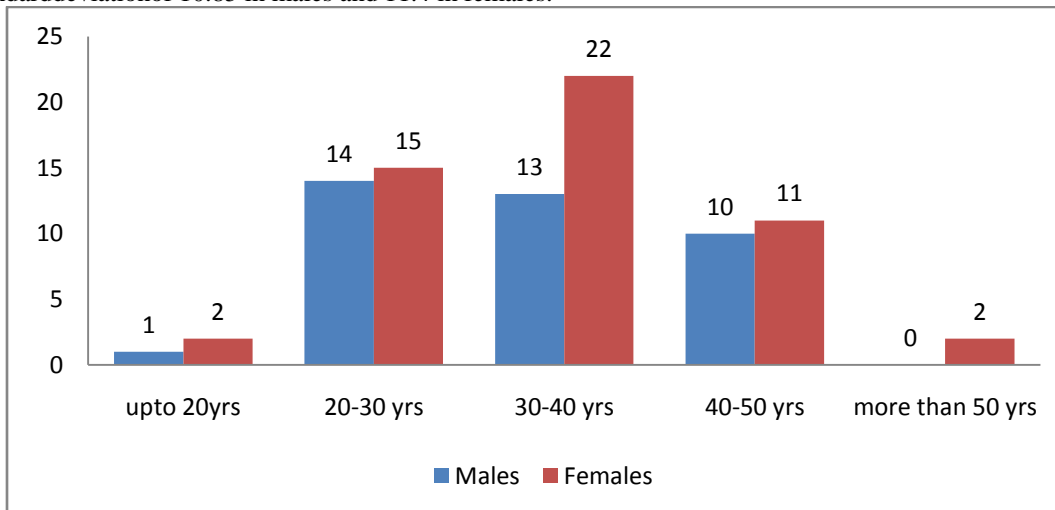


❖ In our study, among 90 patients, 52 patients were females and 38 patients were males with female to male ratio 1.4:1.

Table 02:-Age Distribution.

AGE	Males	Females
<20yr	1	2
21-30 yrs	14	15
31-40yr	13	22
41-50yr	10	11
>50yr	0	2
Total	38	52

❖ It is observed from the above table that the most of the patients are in the age group 20-50 years of age and mean year of occurrence of chronic anal fissure in males is 32.43 years and in females is 36.63 years with a standard deviation of 10.85 in males and 11.4 in females.



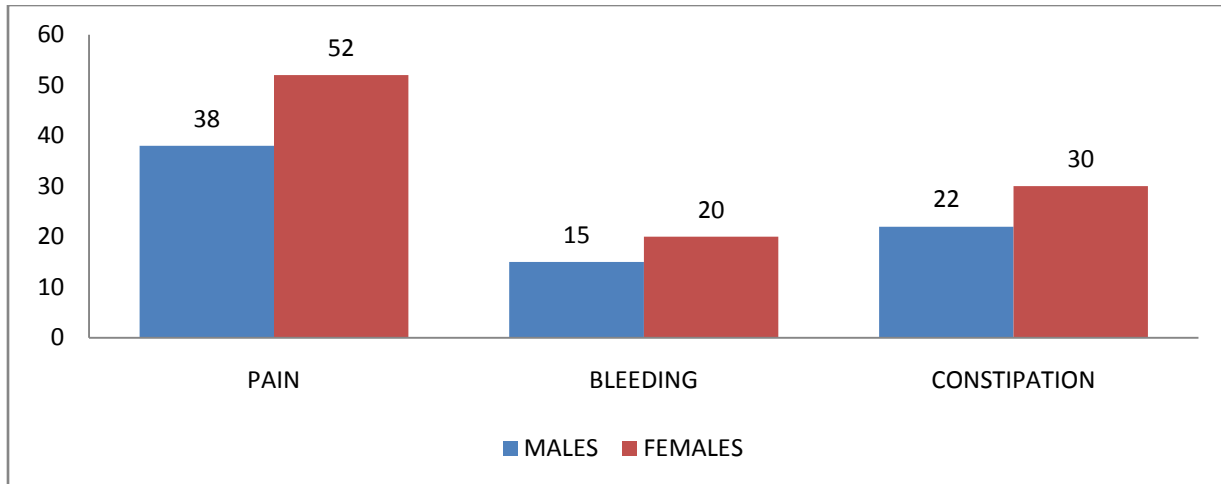
Graph 1:- Age and Sex distribution of the patients.

Table 03:- Symptoms.

SYMPTOMS	MALES	FEMALES
PAIN	38	52
BLEEDING	15	20
CONSTIPATION	22	30

❖ In our study, most common symptom was Pain during defaecation accounting for 100 % among the total patients with males 38 and females 52 in number.

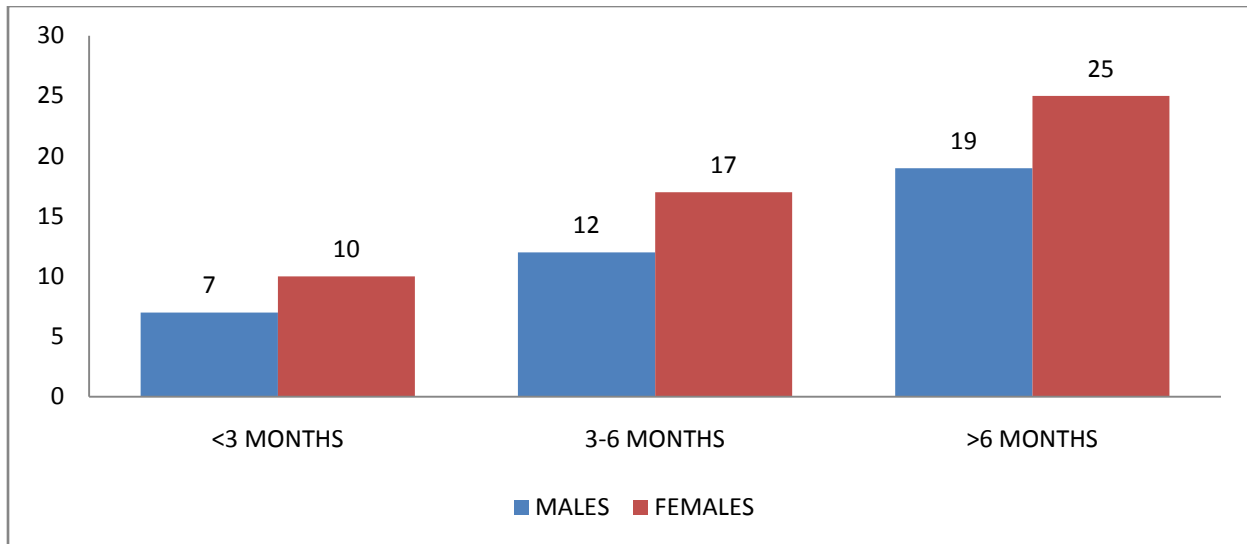
❖ Next commonest symptom was constipation accounting for 58% in total with 22 males and 30 females, followed by 39% of bleeding per anum among total number of patients with 15 males and 20 females.



Graph 2:- Symptoms of Chronic fissure-in-ano.

Table 04:-Duration Of Symptoms:

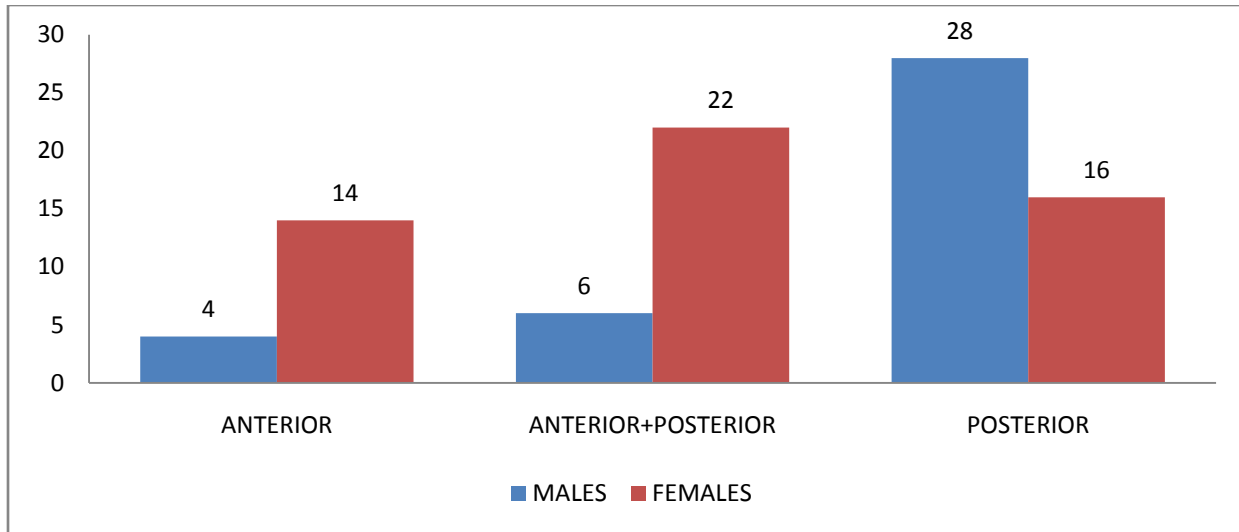
DURATION	MALES	FEMALES
<3 MONTHS	7	10
3-6 MONTHS	12	17
>6 MONTHS	19	25



Graph 3:- Duration of symptoms of chronic fissure-in-ano.

Table05:- Site Of Fissure-In-Ano.

POSITION	MALES	FEMALES	TOTAL	PERCENTAGE
ANTERIOR	04	14	18	20%
ANTERIOR+POSTERIOR	06	22	28	31%
POSTERIOR	28	16	44	49%

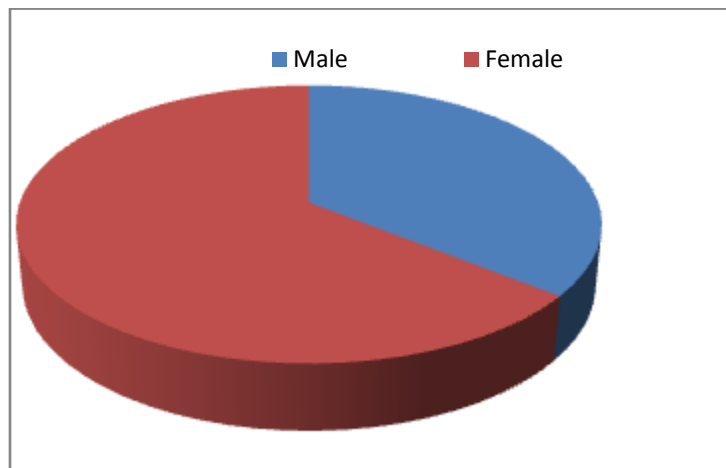


Graph 4:- Site of occurrence of Chronic fissure-in-ano according to Sex.

- ❖ In our study, the most common site of fissure-in-ano is posterior, with 49% among the total study subjects with 28 males and 16 females. This is followed by both anterior + posterior being 31% in total and anterior being 20% in total.
- ❖ In our study, Anterior fissures were comparatively common in females than males (Female:Male ratio = 7:2) and posterior fissures are common in males than females Male:Female ratio = 7:4)

Presence of Sentinel pile :

Out of the 90 patients in our study, Sentinel pile was present in 70 patients accounting for 78% with 25 males and 45 females.

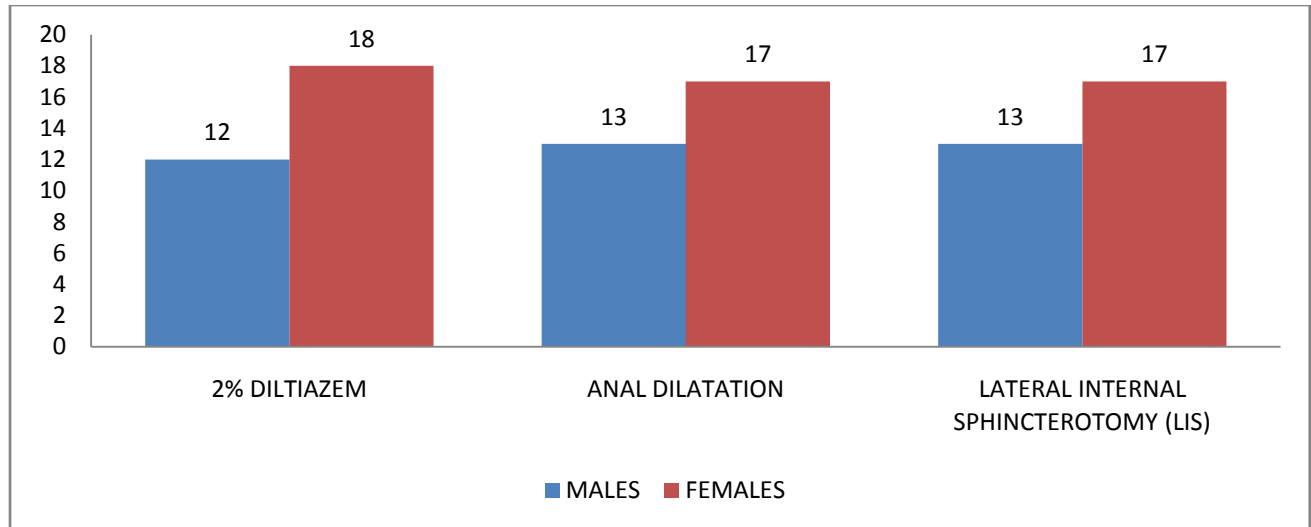


Pie Chart 2 & Fig.6:- Presence of Sentinel Pile.

Sex-wise distribution of patients in each treatment group :

SEX/TREATMENT GROUP(30 each)	2% DILTIAZEM	LORD'S ANAL DILATATION	LATERAL SPHINCTROTOMY (LIS)	INTERNAL
MALES	12	13	13	
FEMALES	18	17	17	
TOTAL	30	30	30	
PATIENTS FOR STUDY	28 out of 30	27 out of 30	28 out of 30	

Table 6:- Sex-wise distribution of patients among different treatment groups.



Graph 5:-Sex wise distribution of patients among different treatment groups.

❖ In our study, the patients were subjected to three different treatment groups as 2% Diltiazem application, Anal Dilatation and Lateral Internal Sphincterotomy with 30 patients each and the sex distribution was done equally among all the three groups.

Lost for follow up :

SEX/TREATMENT GROUP(30 each)	2% DILTIAZEM	ANAL DILATATION	LIS
MALES	02	01	01
FEMALES	-	02	01
TOTAL	02	03	02

Table 7:- Patients lost for follow-up among different treatment groups

❖ In our study, a total of 7 patients were lost for the follow up.

Duration for healing and post-operative findings :

Healing:

a. 2% Diltiazem group

Out of 30 patients who underwent treatment with 2% Diltiazem gel, 20 fissures healed completely within 4-8weeks accounting for 71% out of 28 patients as 2 patients were lost to follow up.

b. **Anal Dilatation group**

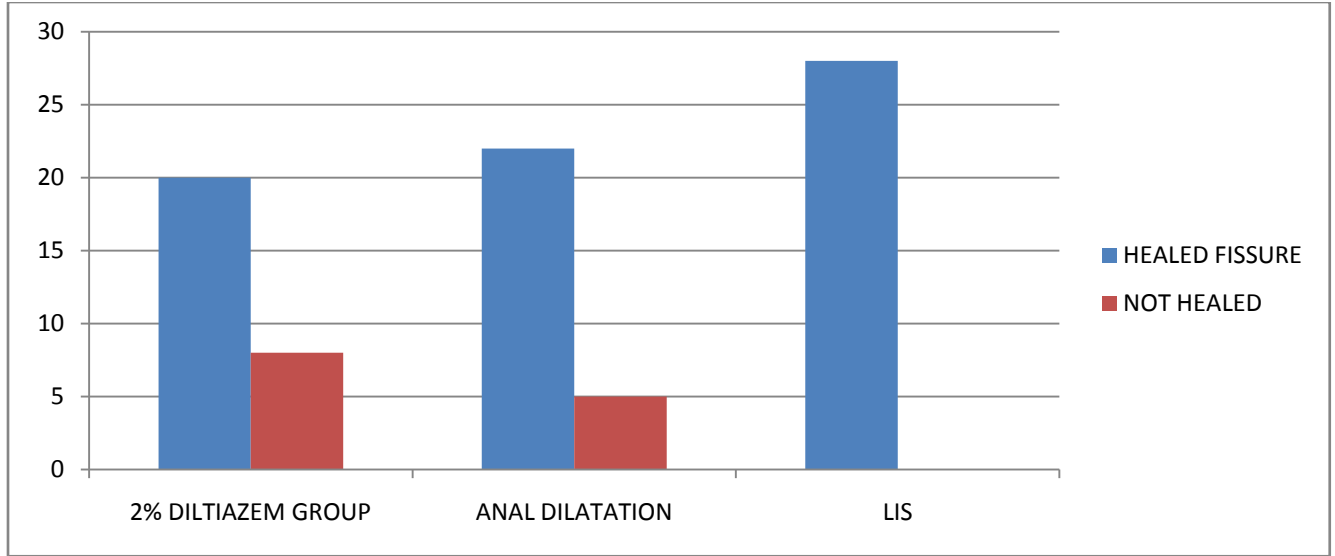
Out of 30 patients who underwent treatment with Anal Dilatation, 22 fissures healed completely, accounting for 81% out of 27 patients as 3 patients were lost to follow up.

c. **Lateral Internal Sphincterotomy (LIS)**

Out of 30 patients, 28 fissures healed completely out of 28 patients, giving rise to 100% healing rate, as 2 patients were lost to follow up.

Table 8:- Healing of Chronic Fissure-in-ano among patients in each treatment group.

TREATMENT GROUP(30 each)	2% DILTIAZEM	ANAL DILATATION	LIS
HEALED	20	22	28
NOT HEALED	08	05	0
PERCENTAGE	71%	81%	100%



Graph 6:- Healing of chronic fissure-in-ano after different treatment modalities.



Fig 4:-Healedanal fissure.

Pain Relief:

DURATION/ TREATMENT GROUP(30 each)	2% DILTIAZEM	ANAL DILATATION	LIS
4 weeks	06	15	20
8 weeks	11	06	08
14 weeks	03	02	-
6 months	02	01	-
No relief	06	03	-

Table 9:- Pain relief among patients after different treatment.

a. 2% Diltiazem group :

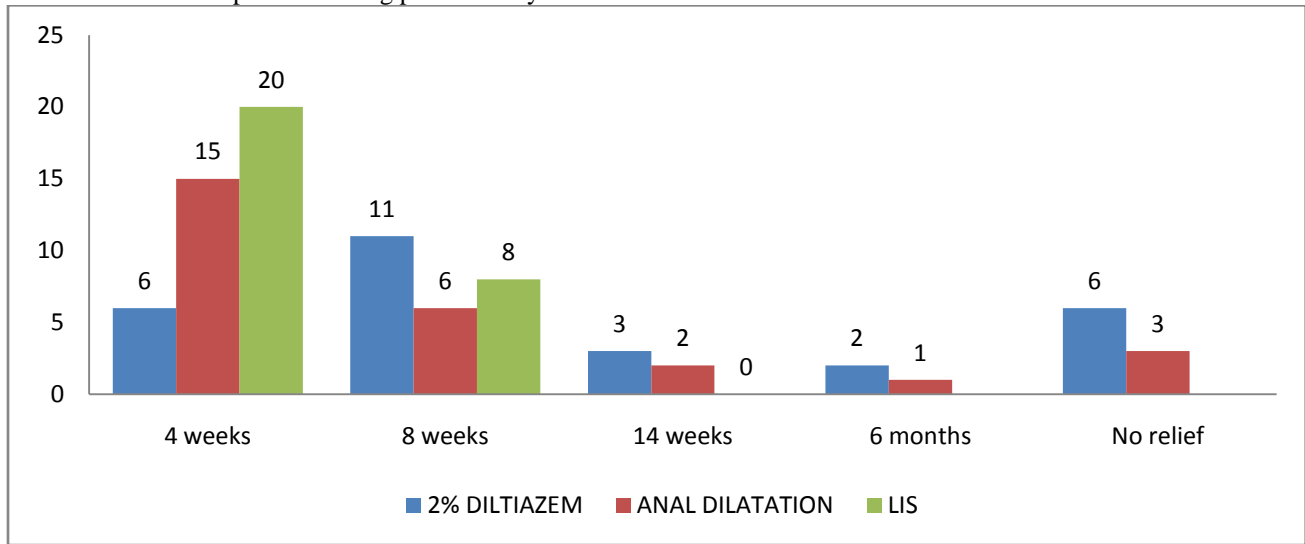
In our study, 22 patients out of 28, had complete pain relief by the end of 6 months accounting for 79%, with maximum number of patients having pain relief by the end of 8 weeks and 06 patients had no pain relief.

b. Anal Dilatation :

In our study, out of 27 patients, 24 patients had pain relief by the end of 6 months accounting for 89%, with maximum number of patients having pain relief by the end of 4 weeks and 3 patients had no pain relief.

c. Lateral internal sphincterotomy :

In our study, 28 out of 28 patients had complete pain relief by the end of 8 weeks accounting for 100%, with maximum number of patients having pain relief by the end of 4 weeks.

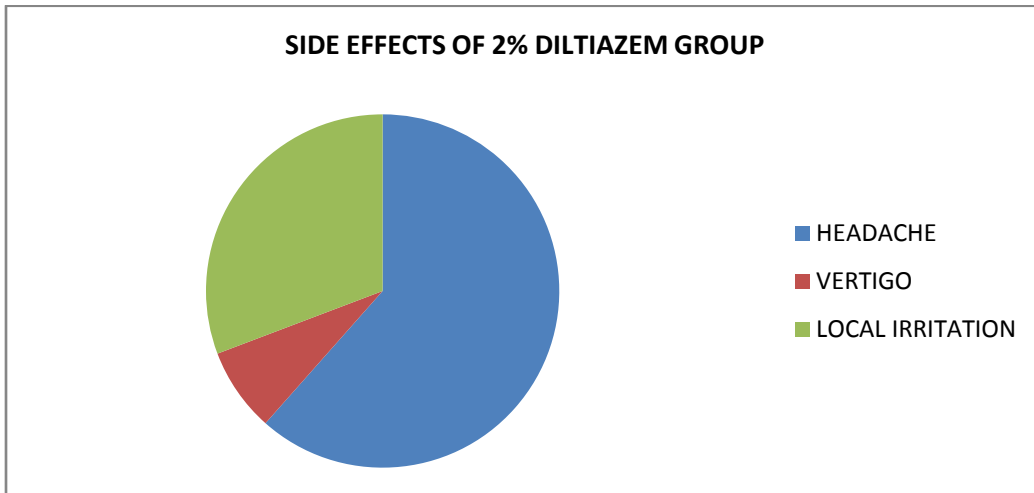


Graph 7:- Pain relief among fissure-in-ano patients after treatment.

Side effects/Complications after treatment of Chronic fissure-in-ano using different modalities of treatment :
2% Diltiazem Group :

COMPLICATIONS/SIDE EFFECTS	NUMBER
HEADACHE	08
VERTIGO	01
LOCAL IRRITATION	04
TOTAL	13
PERCENTAGE	46%

Table 10:-Side effects among patients in 2% Diltiazem group.



Pie Chart 3:-Side effects/Complications of 2% Diltiazem group.

Anal Dilatation:

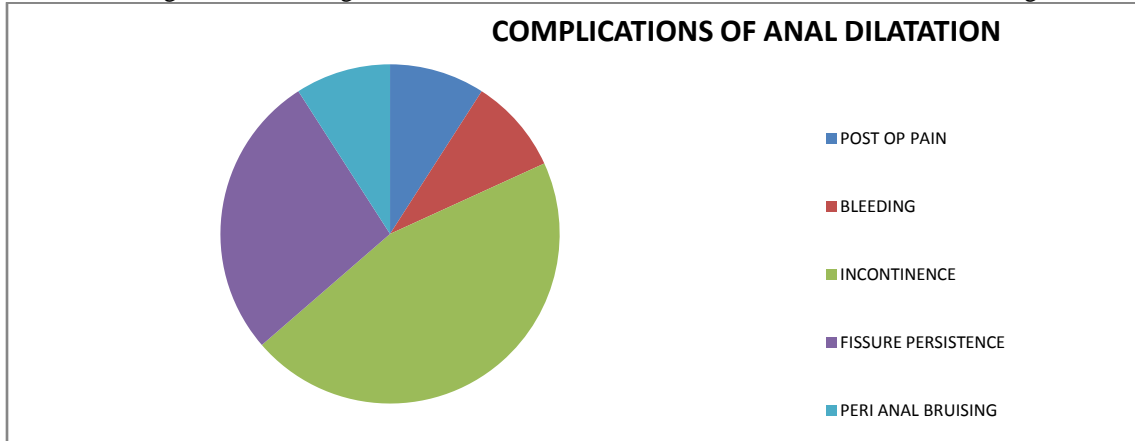
COMPLICATION	NUMBER
POST-OP PAIN	01
BLEEDING	01
INCONTINENCE	05
FISSURE PERSISTANCE	03

PERI-ANAL BRUISING	01
TOTAL	11
PERCENTAGE	41%

Table 11:- Complications among patients treated with LAD.

2% Diltiazemgroup :

In our study, a total of 13 patients had side effects/complications following treatment with topical application of 2% Diltiazem accounting for 46%, among which 08 had headache, 04 had local irritation and 01 had vertigo.

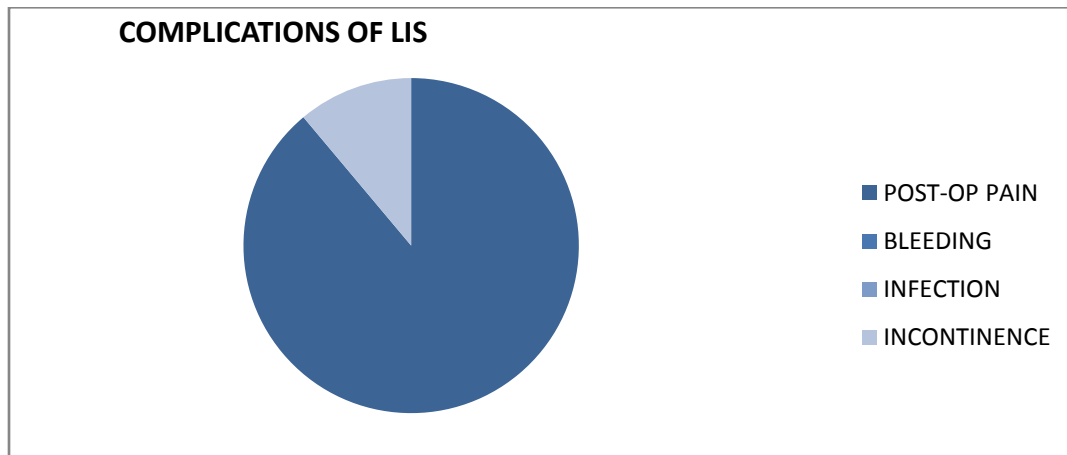


Pie Chart 4:- Complications of Anal Dilatation.

Lateral Internal Sphincterotomy:

COMPLICATIONS	NUMBER
POST-OP PAIN	08
BLEEDING	-
INFECTION	-
INCONTINENCE	01
TOTAL	09
PERCENTAGE	32%

Table 12:-Complications following LIS.



Pie Chart 5:-Complications among LIS treatment group.

Anal Dilatation :

In our study, a total of 11 patients had complications following surgical treatment with Anal Dilatation accounting for 41%, among which 05 had incontinence, 03 had fissure persistence, and post-op pain, bleeding, peri-anal bruising were noted in 01 patient each.

a) Lateral Internal sphincterotomy :

In our study, a total of 09 patients had complications following surgical treatment with LIS accounting for 32%, where in 08 patients had post-op pain and 01 with incontinence. There was no bleeding or infection among the study subjects noted.

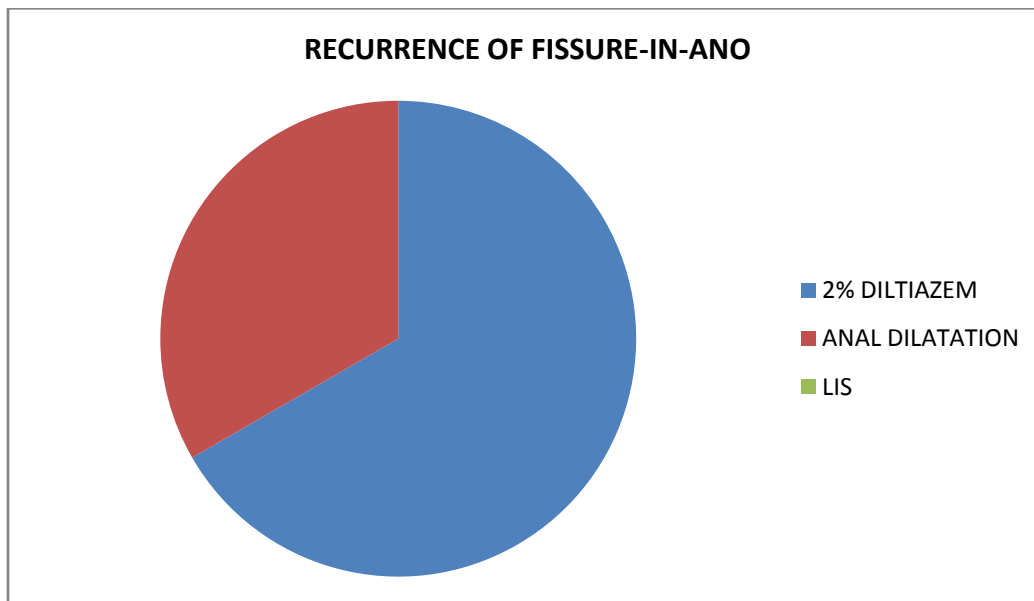
Recurrence of fissure-in-ano after treatment :

TREATMENT GROUP	2% DILTIAZEM	ANAL DILATATION	LIS
RECURRENCE	06	03	0
TOTAL PATIENTS	28	27	28
PERCENTAGE	21.42 %	11.1 %	0 %

Table 13:-Recurrence of Chronic fissure-in-ano after treatment.

❖ In our study, recurrence of fissure-in-ano was maximum among those patients who underwent treatment with 2% Diltiazem accounting for 21% (06 out of 28 patients) and next common being Anal Dilatation treatment group accounting for 11% (03 out of 27 patients).

❖ No recurrence was noted among the patients who underwent treatment with LIS.



Pie Chart 6:-Recurrence after treatment with different modalities of treatment.

Summary

This study included 90 patients with chronic anal fissure who presented to Department of General Surgery, Navodaya Medical College Hospital & Research center, Raichur. Diagnosis was made on the basis of thorough history and clinical examination.

The commonest age group affected was 31-40 years age group (35 cases) and least affected were < 20 years and > 50 years age group (3 and 2 cases respectively). The incidence was more in females compared to males. Female to Male ratio was 1.4:1.

Posterior midline fissure (44 cases) was more common than anterior midline fissure (18 cases) and both (anterior + posterior) were present in 28 cases. Sentinel pile was present in 70 cases and sphincter spasm was present in all cases.

Out of 30 patients who underwent treatment with 2% Diltiazem gel, 2 were lost to follow up during various stages of treatment. Out of the remaining 28 patients, 20 (71%) fissures healed completely between 4-14 weeks. Out of 30 patients who underwent treatment with Lord's Anal Dilatation, 3 were lost to follow-up, and out of remaining 27 patients, 22 (81%) fissures healed completely between 4-8 weeks. Out of 30 patients who underwent treatment with Lateral Internal sphincterotomy, 2 were lost to follow-up and 28 out of 28 patients (100%) had complete healing within 4 weeks.

In the Diltiazem group, 6 patients were pain-free at the end of 4 weeks. 11 patients were free of pain by 8 weeks and 3 patients were pain free by 14 weeks, 2 patients were free of pain by 6 months. 6 patients were not relieved of pain at the end of 14 weeks-6 months. 8 patients experienced mild headache, 1 patient had vertigo and local irritation was present in 4 patients in this group. In the Lord's Anal Dilatation, 15 patients were pain-free at the end of 4 weeks. 6 patients were free of pain by 8 weeks, 2 patients were free of pain by 14 weeks & 1 patient was pain-free by 6 months. 3 patients were not relieved of pain at the end of 6 months. 5 patients experienced incontinence, 3 had persistence of fissure and few other side effects such as post-op pain, bleeding, peri-anal bruising.

In the lateral internal sphincterotomy (LIS), 20 patients were pain-free within 4 weeks and 8 patients had pain relief by 8 weeks. A total of 28 (100%) out of 28 were pain free following this treatment. 8 patients had post-operative pain and 1 patient had developed transient incontinence to flatus in this LIS group.

Conclusion:-

The current study shows that Lateral Internal Sphincterotomy is the better mode of treatment with respect to healing, faster pain-relief and minimal or no complications. The healing rate of Fissure-in-ano in LIS therapy group was 100%, 81% in Lord's Anal Dilatation and 71% with topical 2% Diltiazem therapy. Adverse effects or complications were maximum in 2% Diltiazem therapy group, 13 patients (46%) when compared to Lord's Anal Dilatation (41%, 11 patients) and LIS group (32%, 09 patients).

By comparing the above three modalities of treatment for chronic anal fissure, we conclude that Lateral internal sphincterotomy appears to be the better line of treatment as there is 100% healing rate, minimal complications and no recurrence.

Discussion:-

Fissure-in-ano is a very common problem across the world and a remarkably painful condition in an otherwise healthy population. The exact cause of anal fissure is still unknown but the precipitating factor is generally considered to be the trauma to the anal canal mucosa caused by hard stools due to chronic constipation. Once the fissure has established, spasms of internal sphincter prevents drainage and subsequent healing (Allan and May, 1985) and is the basic cause of persistence of pain. Thus decreasing or inhibiting the contraction of internal anal sphincter should be main stay of any treatment of anal fissure.

Therapy focuses on breaking the cycle of pain, spasm, and ischemia thought to be responsible for the development of fissure in ano. The rationale of treating this condition lies in reducing the internal anal sphincter tone, relieving the spasm and thereby improving the circulation. Operative treatment includes Lord's anal dilatation, fissurectomy, lateral internal sphincterotomy (LIS), excision of anal ulcer/fissure, anal advancement flap/anoplasty, combined surgical & cryo-therapeutic treatment that includes Lateral internal sphincterotomy (LIS) followed by curettage with N-protosside Cryosound, CO2 Laser surgery, LIS with Radiofrequency surgery and Multiple anal sphincterotomy. Of the surgical modalities available, the gold standard procedure is lateral internal sphincterotomy, wherein there is partial division of the internal anal sphincter away from the fissure site.

In our present study, a comparative analysis of topical application of 2% diltiazem gel, Anal Dilatation and lateral sphincterotomy has been done with regard to efficacy, adverse effects and complications in patients with chronic anal fissure. In the present study the age group most affected was 20-50 years with mean age in males being 32.43 years and in females being 36.63 years. According to J.C. Goligher²⁷ the disease is usually encountered in middle aged adults. In Udwardia T.E⁵⁴ series maximum incidence was seen in 31-40 years age group. There was only a slight female preponderance (58%) compared to males (42%) in our study but other studies by Lock & Thomson et al (1977) [3] the Birmingham series noted a slightly male preponderance.

In our analysis, painful defecation was a universal and the most common symptom (100%) among all the study subjects. This was followed by constipation and bleeding per anum in 58% and 39% of the patients respectively. Lock & Thomson et al (1977) [3] found pain and spasm to be present in 69% of patients.

The presence of posterior anal fissure was noted in 28 males and 16 female subjects. The overall incidence of posterior anal fissure was found to be 49% making it the most common site involved. The tables below show the comparison of different studies with our study with respect to healing rate.

Table14:-ComparisonofResultswithDiltiazem.

Studies	Numberofpatients	Healingrate(%)
Knightetal⁹(2001)	66	89.4
Bharadwajetal¹²(2000)	27	73
Kocheret al⁵⁷(2002)	31	67
Shrivastava et al¹⁵(2007)	90	80
Presentstudy	28	71%

Table15:- Comparisonof ResultswithLIS.

Studies	Numberof patients	Healingrate(%)
Jensen et al⁵⁸(1984)	--	100
Evansetal⁵⁹(2001)	65	97
Wiley et al⁶⁰(2004)	79	97
Presentstudy	28	100

ComparisonbetweenDiltiazemgeltherapy, Lord’s anal dilatation andinternalsphincterotomys showed a difference in pain relief, fissure healing, complications and recurrence in our study, which arestatisticallysignificant. Hence, the best modality of treatment for chronic fissure-in-ano is Lateral Internal Sphincterotomy (LIS) > Lord’s Anal Dilatation > 2% Diltiazem gel.

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