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Original Research Paper

General Surgery

COMPARISON OF TOPICAL 2% DILTIAZEM AND LATERAL INTERNAL SPHINCTEROTOMY IN THE TREATMENT OF CHRONIC ANAL FISSURE

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ABSTRACT

INTRODUCTION- Fissure in ano is one of the most common causes of severe anal pain which presents with pain while defecation and may persist for few hours with occasional passage of bright red blood per anum. It is a longitudinal tear in the anoderm of anal canal either posteriorly or anteriorly which extends from the anal verge proximaly and may reach upto the dentate line (1). Primary fissures may be idiopathic, benign, and may be due to local trauma i.e., hard stools, repetitive injury, prolonged diarrhoea and vaginal delivery(3). Chronic ,non healing , multiple or lateral and frequently recurrent anal fissure may be due to some other pathologies, such as chron,s disease, tuberculosis , some other inflammatory bowel disease or malignancies(2). They require further investigations and multidisciplinary management.Acute anal fissure presents within 3 – 6 weeks of symptoms onset and usually heals spontaneously or with conservative therapy. If fissure does not heal for more than 6 weeks then the fissure becomes chronic (4). It is usually deeper and may has exposed internal sphincter fibers in its base. It is often associated with sentinel pile at its distal aspect(5). These types of fissures usually respond better with surgical treatment(6)(7)(8). Probably acute injury to anal canal causes pain and spasm of internal sphincter which in turns results in high resting anal pressure (8) further leading to reduced blood flow and ischemia(9), poor healing and thus again aggrevating anodermal ulcer and so the vicious cycle continues(10) . There is not much clear guideline to manage fissure in ano but the goal of treatment is to breach this vicious cycle of anal sphincteric spasm, allowing improved blood flow and thus healing (11). Certain pharmaceutical agents such as nitrates and calcium channel blockers like 2% diltiazem(12) lowers the resting anal pressure and promote healing of fissure (13). Surgial management involves division of internal anal sphincter and thus reducing anal sphincter tone leading to healing of anal fissure (14). In this study we will compare the conservative management i.e chemical spincteritomy with topical 2% diltiazem with the surgical management i.e lateral internal sphincterotomy (LIS) in the treatment of chronic anal fissure.

MATERIAL AND METHODS -This is a prospective study conducted in SGRRIM and HS ,Dehradun, from may 2018 to nov2018. Study was conducted randomly in 180 patients who presented in surgery outpatient department with chronic anal fissure. Clearance from local ethical committee was obtained.

INCLUSION CRITERIA- fissure in ano for more than 6 weeks was labeled as chronic anal fissure. Patient of both sexes between age 15 years to 55 years who presented with the symptoms of chronic anal fissure were included in the study.

Exclusion criteria. Fissure in ano less than 6 weeks, fissures associated with hemorrhoids , fistula in ano,malignancies, tuberculosis, inflammatory bowel disease, chron,s disease and pregnant women were exluded from the study.

Two groups were made for the purpose of study. Group I consisted of patients who were treated conservatively with 1 cm of 2% topical diltiazem into anoderm for 6 consecutive weeks twice a day .Group II consisted of patients who underwent lateral internal sphincterotomy under spinal anesthesia. Patients of both the groups were advised sitz bath , stool softner, analgesics and high fibre diet.

Review of all the patients was done in surgery outpatient department weekly for six consecutive weeks and monthly for subsequent 3 months. At each visit preset questions were asked regarding pain, bleeding while defecation , constipation , complication like leakage of flatus and faeces. Per rectum examination as done to look for sphincter spasm if patient allowed. Pain was assessed using Likert scale ranging from 0 – 4 where 0 implies no pain and 4 means maximum pain. Healing was assessed visually and complete healing was considered as complete disappearance of fissure in ano. The data was collected and analysed .Chi square test was used to calculate P values. P value < 0.05 is considered statistically significant. Patients with persisted symptoms which were not healed for 6 weeks were evaluated for other cause of symptoms.

CONCLUSION – Though use of pharmaceutical drugs in the management of chronic anal fissure has minimal complications but lateral internal sphincterotomy is superior in terms of early pain relief , better healing rate and is more effective than the chemical sphincterotomy It should be considered for patients suffering from chronic anal fissure refractory to medical therapy.

KEYWORDS :

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Overall clinical presentation of chronic fissure in ano.

OBSERVATIONS AND RESULTS-

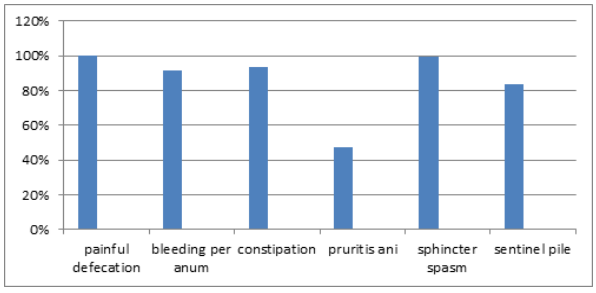
Table 1

		Group I(N=110)	Group II(N=70)
Male(n= 100)		60(54.5%)	40(57.1%)
Female(n=80)		50(45.4%)	30(42.8%)
Age Group	15- 25 y	18(16.3%)	12(17.1%)
	26- 35y	50(45.4%)	40(57.1%)
	36-45y	25(22.7%)	15(21.4%)
	46-55y	17(15.4%)	3(4.2%)
Pain while defecation		110(100%)	70(100%)
Bleeding per anum		98(89%)	67(95.7%)
constipation		99(90%)	69(98.5%)
Pruritis ani		57(51.8%)	28(40%)
Sentinel pile		93(84.5%)	58(82.8%)
Sphincter spasm		109(99%)	70(100%)
Site of fissure	anterior	7(6.3%)	3(4.2%)
	posterior	103(93.6%)	67(95.7%)

General demographic data

In our study total no. of patients included in the study were 180. Two group were made. Group 1(conservative group) included 110 patients and group 2 (surgical group) included 70 patients. In our study there were 100 male patients and 80 were female patients and the most common affected age group was 26- 35 years. Sentinel pile was present in 83.88% of all the patients, posterior fissure was in 94.44%, anterior fissure was present in 5.55%. of all the patients included in the study.

Fig 1



overall clinical presentation of chronic anal fissure was – pain while defecation in 100%, bleeding in 96%, constipation in 93.3% , sphincter spasm 99.4%, pruritis ani 47.2%.

Table 2

	Group I						Group II						P-value
	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	
Pain	107 (97.2%)	106 (96.3%)	105(95.4%)	98(89%)	78(70.9%)	76(69%)	67(95.7%)	58(82.8%)	34(48.5%)	2(2.8%)	0(0%)	0(0%)	0.00
bleeding	98 (89%)	98 (89%)	96(87.2%)	97(88.1%)	67(60.9%)	67(60.9%)	64(91.4%)	53(75.7%)	28(40%)	1(1.4%)	0	0	0.00
Sphinter spasm	109 (99%)	105 (95.4%)	102(92.7%)	103 (93.6%)	96(87.2%)	78(70.9%)	2(2.8%)	1(1.4%)	0	0	0	0	0.3
Pruritis	108 (98.1%)	108 (98.1%)	106(96.3%)	105 (95.4%)	97(88.1%)	94(85.4%)	48(68.5%)	37(52.8%)	3(4.2%)	1(1.4%)	0	0	0.00
healing	0	2(1.8%)	2(1.8%)	48(43.6%)	57(51.8%)	76(69%)	0	4(5.7%)	47(67.1%)	68(97.1%)	70(100%)	70(100%)	0.00

Post treatment clinical features in both the groups

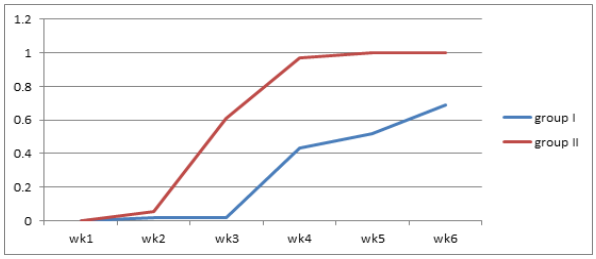
Table 3

	pain	healing	Sphincter spasm	P- value
Group I	78%	83%	84%	0.75
Group II	81%	100%	100%	

Average time of resolution of symptoms at 4 weeks

AT the end of 4 weeks there was78% of pain relief, 83% of healing, 84% sphincter spasm relaxation noted in conservative group whereas there was 81% pain relief , 100% healing,100 % sphincter spasm relaxation noted group 2 at the end of 4weeks.

Fig 2



Comparison of healing in both the groups after treatment

Fissure healing was achieved early and better in group 2 patients than group 1 patients. It healed almost 100% in group 2 patients at 4 weeks whereas group 1 patients either took more than 6 weeks to heal completely or did not heal at all.

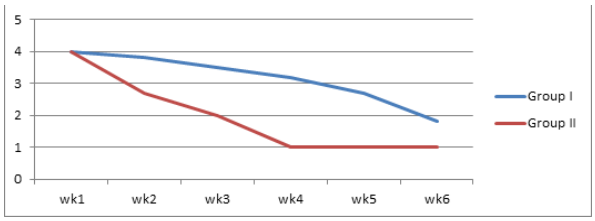
Table 4

	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6
GroupI	4 (0.4)	3.8 (1.6)	3.5(2.3)	3.2 (3)	2.7 (2.3)	1.8 (1.9)
Group II	4 (0.5)	2.7 (1.8)	2 (1.9)	1 (1.4)	1 (0.8)	1 (0.6)
p-value	0.99	0.00	0.00	0.00	0.00	0.00

Post treatment mean intensity of pain

Pain while defecation significantly relieved early and better in group 2 patients than the group 1 patients.

Fig 3



Post treatment relief of pain in both the groups

Discussion -Chronic anal fissure , which does not heal for more than 6 weeks, affect quality of life significantly and are difficult to manage. The rationale of treatment of chronic anal fissure is reducing the tone of internal anal sphincter, relieving the spasm, improving the blood supply to anoderm and thus promotes healing. In our study a comparative analysis of topical application of 2% diltiazem ointment and surgical management of chronic anal fissure by performing lateral internal sphincterotomy (LIS) was done with regard to relief of pain and spasm , duration of healing of fissure , its efficacy, adverse effect and complications. In our study the most affected age group was 26- 35 years of age which is same as other studies (15). There is slight male predominance whereas in other studies it is almost equal in both the sexes (15). In approximately 90 % 0f patients, the location of fissure is in posterior midline which may be because of poor perfusion of anal canal to this portion (16) . In our study also 94.44% of all the patients had fissure in ano in posterior midline. Chemical sphincterotomy is the first line of treatment of chronic anal fissure in many centers (17)(18). Calcium channel blockers like 2% diltiazem and nifedipine lowers the resting anal pressure and promote healing (19)(20). The common adverse effects of using topical calcium channel blockers are headache and perianal dermatitis (21). Healing rate of chronic anal fissure ranges from 47% - 80 % (22). In our patients adverse effects of group 1 patients were headache in 8.1 % and pruritis ani in 11.8% whereas it was nil in group 2 patients. Some studies shows LIS can cause transient incontinence of flatus / faeces(23).But in our studies no such complication noted. Healing rate of group 1patients was 83% at the end of 4 weeks in our studies which is almost similar to other studies (24). Libertiny et al showed healing of anal fissure to be 98% with lateral internal sphincterotomy (25).In our study, healing was 100% in group 2 patients at the end of 4 weeks .

CONCLUSION –Though use of pharmaceutical drugs in the management of chronic anal fissure has minimal complications but lateral internal sphincterotomy is superior in terms of early pain relief , better healing rate and is more effective than the chemical sphincterotomy It should be considered for patients suffering from chronic anal fissure refractory to medical therapy.

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