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Study of clinical profile of acute and chronic fissure in ANO and its management

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Abstract
Introduction: Fissure in ANO is one of the most common ANO rectal problems. Anal fissure is a linear or oval shaped tear in the anal canal starting just below the dentate line extending to the anal verge.
Aims: The present study aims at determining the clinical presentation, site, symptomatic relief, healing rate and best treatment modality of fissure in ANO.
Materials and Methods: This study is observational study in patients with ANO rectal problems who were randomly selected in this study. The diagnosis was made on the basis of ANO rectal examination which included inspection, digital rectal examination, and proctoscopic examination.
Results: Our study found out that out of the 50 patients with ANO rectal problems.50 patients (100%) were having anal fissures. Out of them, 30 were males and 20 were females, majority were 18-30 years age group. Pain during defecation, bleeding and constipation were reported as the common clinical symptoms. In this study we compare clinical presentation, site, symptomatic relief, healing rate of 0.2% GTN treatment, Manual anal dilatation and lateral internal sphincterotomy in the treatment of fissure in ANO. 20 patients were underwent lateral internal sphincterotomy and 20 underwent manual anal dilatation with 10 patients treated with 0.2% GTN ointment. We studies outcome of these each modality and compared them with different studies. Lateral internal sphincterotomy remains the gold standard for definitive management of anal fissure.
Conclusion: Lateral internal sphincterotomy is one of the standard and best treatment modality for fissure in ANO.

Keywords: ANO rectal problems, clinical presentation, site, symptomatic relief, linear

Introduction

Anal fissure is a linear or oval shaped tear in the anal canal starting just below the dentate line extending to the anal verge. It was first described in 1934 by Lockhart-Mummery [1].

Anal fissures can be acute or chronic. Acute fissures are a shallow tear in the ANO derm. Symptoms associated with acute fissures include anal pain, spasm, and/or bleeding with defecation. Chronic fissures are present for more than 6 to 8 weeks. Features of a chronic fissure are exposed fibers of internal anal sphincters at the base, hypertrophied anal papilla proximally and a skin tag or sentinel pile distally [1]. The diagnosis can typically be confirmed by physical examination and Endoscopy in the office if tolerated by the patient. By gentle separation of the buttocks and examination of the anus, a linear separation of the ANO derm can be identified at the lower half of the anal canal [2].

Hyper tonicity of the internal anal sphincter, mucosal ischemia along the posterior midline, chronic constipation and injury from hard stools are the factors causing development of fissure in ANO. Treatment of anal fissure focuses on breaking the cycle of pain, spasm, and ischemia. First-line therapy to minimize anal trauma includes bulk agents, stool softeners, and warm sitz baths [3]. Those who doesn't achieve a relief from first line conservative management or those who have a recurrence, second line therapy is advocated with botulinum toxin injections or the topical application of ointments such as calcium blockers (nifedipine, diltiazem), or nitric oxide donors (Glyceryl trinitrate). Surgical management is instituted in treatment resistant cases. Surgical treatment options are Lords dilatation, Lateral internal Sphincterotomy and fissurectomy. Treatment of anal fissure by sphincterotomy is not new and was first suggested by Boyer.4 Since the introduction of lateral internal sphincterotomy by Eisenhammer in 1951, this procedure has been used with increasing frequency and is now considered the surgical treatment of choice for anal fissure [4].

History

Moderate anal dilatation was first suggested by Recamier – 1838 Popular following its use by Lord in 1968 [5]. Internal sphincterotomy-was first described by Eisenhammer, who divided the Sphincter in posterior position [5].

Lateral anal sphincterotomy- was decribed by Parks in 1967 and later modified by Notaras in 1969 [5].

Klosterhalfen (1989) described the pathogenesis of anal fissure related to the vascular anatomy in the anus [5].

Schoutten proposed Vascular – anal resting pressure hypothesis. Sohn- controlled/precise ballon dilatation of anal canal [5].

Material and methods

This is prospective observational study was conducted under Department of General surgery between September 2017 to August 2019 in our institute.

The inclusion criteria include patients with above age 18 years with ANO rectal ailments and patients with a history of recurrence after prior anal surgery. Exclusion criteria include patients with below age of 18 years with ANO rectal malignancies, pregnant/ lactating mother and in patients having fissure in ANO with gross co-morbid conditions like congestive cardiac failure, chronic renal failure, myocardial ischemia and HIV positive patients.

After admission short history was taken and physical and clinical examination was conducted on each patient admitted in surgery department with features of perianal fissure. Baseline investigations, as routinely required, were done followed by imaging studies. Patients were then explained about their diseases process and the possible line of management. All the necessary information regarding the study was explained to the patients or their valid guardian. Informed written consent was taken from the patients or their guardian willing to participate in the study. 20 patients were underwent lateral internal sphincterotomy and 20 underwent manual anal dilatation with 10 patients treated with 0.2% GTN ointment. We studies outcome of these each modality and compared them with different studies.

Results: Lateral internal sphincterotomy remains the gold standard for definitive management of anal fissure.

Observations

Distribution of patients according to age group in years

In the present study the maximum incidence of anal fissure was found in young age group of 18-30 years i.e.22 patients belonged to this age group. 17 cases belonged to the age group of 41-50 years of age.

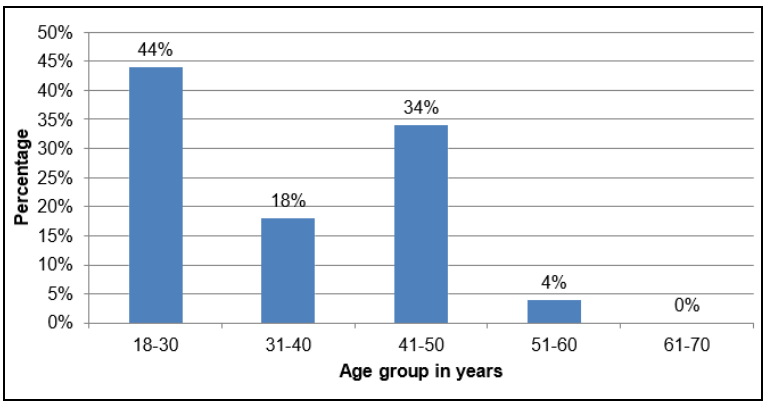

Chart 1: Distribution of patients according to age group in years

These findings are comparable to other studies mentioned below. In a study done by Dr. Vishruth k. Raj 6 40% patients belonged to the age group 21-30 followed by 18% in the age group of 41-50 years.

M S Varadarajan *et al*. [7] reported maximum number of cases in the age group of 30 - 40 years. 42 patients out of 100 belonged to this age group while 35 patients belonged to the age group of 20-30 years.

Distribution of patients according to gender

The distribution of total 50 patients according to gender showed that 30 (60%) patients are male and 20 (40%) patients are female.

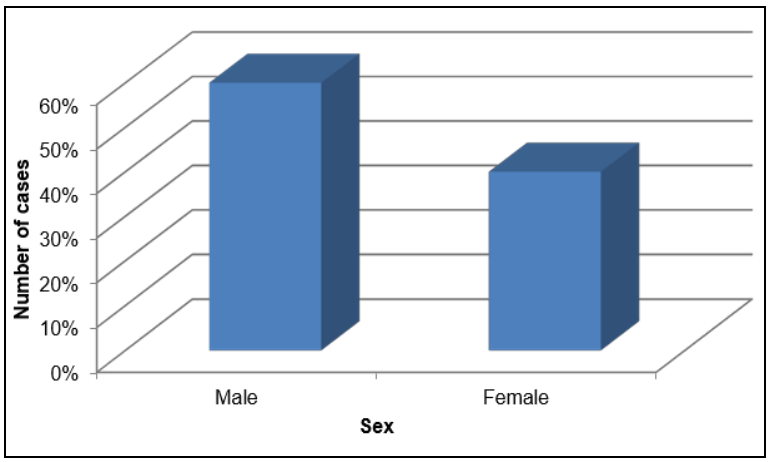

Chart 2: Distribution of patients according to gender

In our study there was male preponderance with male to female ratio of 1.5:1. In a study done by M S Varadarajan *et al.* [7] the male to female ratio was 1.7:1 while it was 1.3:1 in a study done by Giridhar CM *et al.* [8], Jensen SL9 reported a equal male to female ratio.

3. Clinical presentation of patients of fissure in ANO

In our study we divided patients according to presentation of acute and chronic fissure.

In cases of acute fissure the most common symptom was pain during defecation which was found in 88% of cases. Second most common symptoms was bleeding per rectum in acute fissure in ANO which was found in 84% of patients.

In cases of chronic fissure in ANO the most common symptom was pain during defecation in 76% of cases. Second most common symptoms was bleeding per rectum in chronic fissure in ANO which was found in 68% of patients. So in both the cases of acute and chronic fissure in ANO the most common symptom was pain during defecation and second most common symptoms was bleeding per rectum.

Table 1: Clinical presentation of patients of fissure in ANO

Sr. no.	Clinical features	Numbers of Cases	Percentage
1.	Pain during defecation	41	82%
2.	Bleeding per rectum	40	80%
3.	Swelling	0	0%
4.	Discharge	9	18%
5.	Constipation	3	6%

In a study conducted by Vishruth K. Raj [6] *et al.* the most common most common symptom in cases of acute fissure in ANO was pain during defecation which was found in 93% of cases and in cases of chronic fissure in ANO the most common symptom was mass at anus which was found in 76% of cases.

In study done by Varadarajan MS *et al.* [7], the most common presenting symptoms was pain during defecation which was found in 86% followed by bleeding per rectum 62%.

In study done by Sandesh Pawar *et al.* [10], the most common symptoms observed (100%) in all the patients. Bleeding was associated in 80% of patient.

In a study conducted by Sajith Babu *et al.* [11] most common symptom in cases of acute fissure in ANO was pain during defecation which was found in 100% of cases and second most symptom was bleeding PR which was found in 86% of cases.

In a study conducted by Ahemadi Firdous Nikhat *et al.* [12] most common symptom in cases of chronic fissure in ANO was pain during defecation which was found in 100% of cases and second most symptom was bleeding PR which was found in 82% of cases.

Table 2: Clinical presentation of patients of fissure in ANO in various study

Study	Pain during defecation	Bleeding per rectum
Varadarajan MS *et al.* [7]	86%	62%
Khan *et al.* [13]	36%	56%
Sajith Babu *et al.* [10]	100%	86.1%
Sandesh Pawar *et al.* [11]	100%	80%
Vishruth K. Raj *et al.* [6]	93%	76%
Ahemadi Firdous Nikhat *et al.* [12]	100%	82%

Distribution of patients according to site of fissure

In the present study, posterior fissure was found to be more common than anterior fissure with 84% of the cases having posterior and 16% i.e. 8 out of 50 patients had anterior fissure

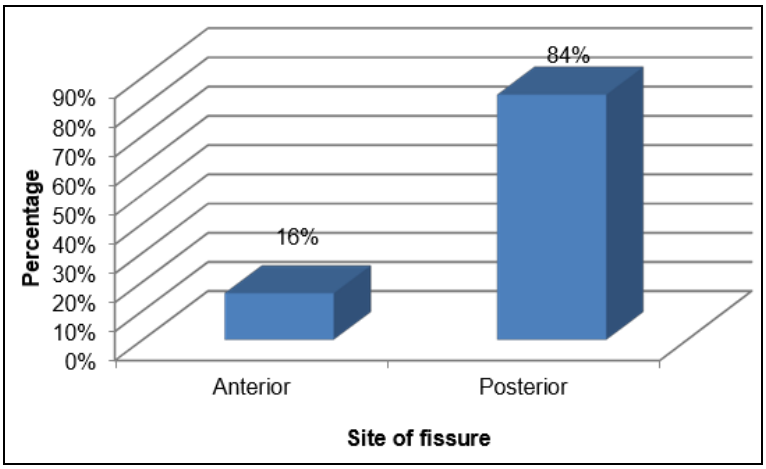

Chart 3: Distribution of patients according to site of fissure

Distribution of patients according to site of fissure in various study

In a study done by VISHRUTH K. RAJ6, out of 60 patients, 47 had posterior while 13 patients had anterior fissure.

In a study done by Varadarajan MS *et al.* [7] reported posterior anal fissure in 98% of the cases and anterior anal fissure in 2% cases.

In a study done by Sajith Babu *et al.* [11], reported posterior anal

fissure in 90% of the cases and anterior anal fissure in 10% cases.

Distribution of patients according to treatment modalities

In our study of 50 patients we compared three different modalities of treatment. 20 patients were underwent lateral internal sphincterotomy and 20 underwent manual anal dilatation with 10 patients treated with 0.2% GTN ointment. We studies outcome of these each modality and compared them with different studies.

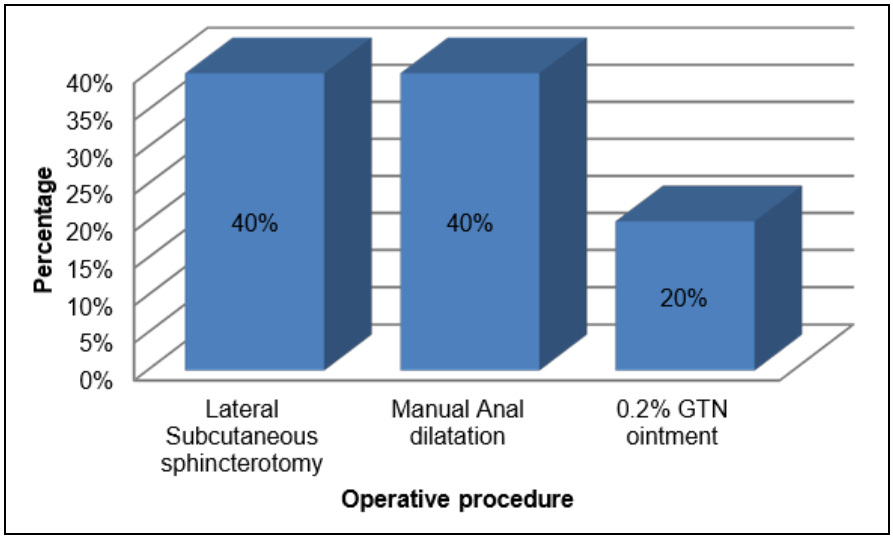

Chart 4: Distribution of patients according to treatment modalities

Table 3: Comparison with different studies with anal dilatation

Study	Present	Pandit RK *et al.* [14]	Alok Chandra Prakash [15]
Early pain relief	90%	68%	96.4%
Healing of fissure within 1 month	90%	94%	100%
Recurrence	5%	16%	14.3%
Incontinence	10%	24%	1.78%

In our study there was immediate pain relief in 18 patients out of 20 cases after manual anal dilatation. Ulcer healing took on an average with in 1 month. Recurrence was reported in 1 out of 20 cases while there was minor incontinence in 2 cases.

Table 4: Comparison with different studies with Lateral internal sphincterotomy

Study	Present	Rajnish Mishra *et al.* [16]	Pandit RK *et al.* [14]	Pravin J. Gupta [17]
Early pain relief	95%	70%	72.7%	86.4%
Healing of fissure within 1 month	100%	85%	97.7%	91%
Recurrence	0%	-	2.27%	1%
incontinence	0%	-	6.8%	6.8%

In our study there was immediate pain relief in 19 patients out of 20 cases after Lateral internal sphincterotomy. Fissure healing took on with in 1 month. Recurrence was reported in 0 out of 20 cases while there was minor incontinence in 0 cases.

Table 5: Comparison with different studies with 0.2% GTN ointment (chemical sphincterotomy)

Study	Present	Rajnish Mishra *et al.* [16]	Leo Francis Tauro *et al.* [18]
Early pain relief	50%	40%	83%
Healing of fissure within 1 month	60%	30%	96.6%

In our study there was immediate pain relief in 5 patients out of 10 cases after 0.2% GTN ointment (chemical sphincterotomy). Fissure healing took on with in 1 month in 6 cases.
No any recurrence and minor incontinence reported.

Table 6: Comparison of different modalities of treatment

	0.2%GTN ointment	MAD	LIS
Early pain relief	50%	90%	95%
Healing of fissure at the end of 1 month	60%	90%	100%

Of all the three modalities Lateral internal sphincterotomy remains the surgical treatment of choice for both acute as well as chronic fissures. According to Jensen SL *et al.* [9], Saad AM *et al.* [19], Olsen J *et al.* [20], Weaver *et al.* [21] and study conducted by Ram E *et al.* [22] show that Lateral internal sphincterotomy is superior to uncontrolled anal dilatation, yielding superior healing rates with less incontinence. In our study Lateral internal sphincterotomy shows 100% healing of fissure by the end of 1 month with no recurrence.

Conclusion

From this study it is concluded that the treatment of fissure in ANO by conservative method (GTN) is a easy and simple but

having delayed pain relief and healing of fissure. Patients of fissure in ANO were treated by Lateral internal sphincterotomy and manual anal dilatation required same period for fissure healing and in both methods there was immediate pain relief. The complications and recurrence rate is also high in cases of manual anal dilatation than Lateral internal sphincterotomy. The Lateral internal sphincterotomy can be done under local anaesthesia and spinal anaesthesia. But anal dilatation need to be done under general or spinal anaesthesia.

So it is concluded that treatment of fissure in ANO by 0.2% GTN ointment (chemical sphincterotomy) has high complication rate. Both the modalities i.e. Lateral internal sphincterotomy and manual anal dilatation of are good options for treatment of fissure. Though there is no need of anaesthesia but duration of treatment is prolonged in 0.2% GTN ointment (chemical sphincterotomy). General and spinal anaesthesia required in manual anal dilatation.

Thus we conclude that, in present study Lateral internal sphincterotomy is associated with immediate pain relief in 95% cases and healing of fissure within 1 month occurred in 100% of cases. Also there is no any complications i.e. (wound infection and fecal incontinence) and recurrences with Lateral internal sphincterotomy are noted in present study. Therefore, it is one of the standard and best treatment modality for fissure in ANO.

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