Manual Dilatation of Anus with Fissurectomy versus Lateral Sphincterotomy in the Treatment of Chronic Fissure inAno -An Observational Study

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ABSTRACT

BACKGROUND

Incontinence to flatus and faecal soiling are distressing complications of sphincterotomy that may occur in up to 35% of patients. Surgical techniques that preserve the anal sphincter, such as manual anal dilatation with fissurectomy may reduce the possibility of postoperative faecal incontinence.This work was carried out to study the efficacy of manual anal dilatation with fissurectomy against lateral internal sphincterotomy in the treatment of chronic fissure-in-ano.

METHODS

Based on random selection,120 patients underwent either manual dilatation of the anus with fissurectomy or lateral sphincterotomy. Complications related to the procedures were recorded.The first visit was scheduled within one week, followed by a second visit in the subsequent week. Further follow-up was scheduled at the end of six weeks, followed by monthly visits. During each visit, enquiries were made regarding the expected complications. Patients were also examined to rule out anorectal sepsis. The results of the follow-up were tabulated and analyzed.

RESULTS

There were no reports of incontinence, flatus, or motion among the two groups. There were no observationsof infection (abscess or fistula) among the two groups. There were no reports of anal stenosis among the two groups. 30 patients out of the 120 developed urinary retention. Of them, 18 belonged to the sphincterotomy group and 12 belonged to the fissurectomy group.There were no reports of recurrences among the two categories.

CONCLUSION

Manual anal dilatation with fissurectomy might be considered as an alternative procedure in the surgical management of chronic anal fissures, given the lower rate of complications but the higher chances of pain.However,its long-term results and efficacy need to be ascertained through more extensive and larger clinical trials.

KEYWORDS: Manual Dilatation, Fissurectomy, Lateral Sphincterotomy, Chronic Fissure-in-Ano.
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INTRODUCTION

Anal fissures are a prevalent issue that significantly increases morbidity in otherwise healthy individuals. An extended ulcer in the lower canal's long axis is known as an anal fissure. The midline posteriorly is the most common location for anal fissures, followed by the midline anterior. In 80% of patients,

classic anal fissures occur in the posterior midline and the remaining 20% occur in the anterior midline.[1]Men are more likely to get the disease than youngsters or the elderly. It results in excruciating pain when faeces are passed, as well as rectal bleeding that stains tissue and smears stools.

Acute anal fissures have a short history of less than 6weeks and are characterized by drastic anal pain associated with defecation. Chronic fissures have a longer history, usually more than 6 weeks. Chronic anal fissures have a hypertrophied anal papilla internally and a sentinel tag externally between which lies the slightlyinduratedanalulceroverlyingthefibers of the internal sphincter.

Most cases of chronic anal fissures are associated with elevated resting anal pressure and decreased perfusion at the fissure site due to ongoing internal anal sphincter hypertonia and spasm, although the exact cause remains unknown. There are two types of fissures: the primary, or idiopathic form, and the secondary type. Although the primary type of fissure is the most prevalent, its precise etiology is unknown. These kinds of fissures typically occur in the midline, either anteriorly or posteriorly. If the acute stage of the primary fissure remains untreated, the tissues experience long-lasting organic alterations that ultimately result in a chronic state. These include the formation of the sentinel pile, anal papilla, fibrosis in the ulcer base, and indurations of the ulcer edges. Certain pathological disorders of the anal canal, such as Crohn's disease, ulcerative colitis, trauma, surgery, or infection, are the causes of the secondary forms of fissures.[1] Only after the causing pathology is eliminated or addressed will they begin to mend. These kinds of cracks are typically found eccentrically along the anal edge.

Among benign ano-rectal diseases, anal fissure is one of the more commonly encountered conditions. Anterior lesions are more frequent in women than in men. Anal fissures are not common in patients older than 65 years, and in this age group, they must be suspected to be associated with other pathologies.The lifetime incidence is calculated to be 11%. About 50% of patients heal chronic fissures with conservative treatment.There are three modalities available for treating fissures in Ano: conservative, medical, and surgical. The conservative line of management includes dietary and lifestyle modifications. Medical Line of Management: It is basically a combination of conservative treatment and chemical sphincterotomies. Surgical treatment is associated with the highest likelihood of prompt healing and a low risk of recurrence.Surgery has long been the accepted treatment for chronic anal fissures; it is a common, efficient technique that heals 90–95% of the time. In over 90% of cases, lateral internal sphincterotomy heals chronic anal fissures, but it is associated with potential long-term complications. Incontinence to flatus and faecal soiling are distressing complications of sphincterotomy that may occur in up to 35% of patients. Surgical techniques that preserve the anal sphincter, such as manual anal dilatation with fissurectomy, may reduce the possibility of postoperative faecal incontinence.

In most acute cases, complete healing could be achieved by conservative or medical treatment. [2,3]

The treatment of chronic cases though, is still a very contentious topic.[4]

In the vast majority of chronic cases, though, surgical intervention is invariablywarranted dueto its immediate benefit in terms of reliefofsymptomsandbetterhealingrates.[4]These cases are associated with significant morbidity and are difficult to manage. The objective of surgical treatment is to decrease lower anal tone, as a consequence of which there will be better healing. Surgical intervention could beintheformofmanual dilatation (uncontrolled and controlled) or sphincterotomy.

Aims and Objectives

In this study we wanted toevaluate and compare the efficacy of manual anal dilatation with fissurectomy against lateral internal sphincterotomy in the treatment of chronic fissure-in-ano.

MATERIALS &METHODS

This was a prospectivestudy conductedat Karpagam Faculty of Medical Sciences and Research, Coimbatore from 2017 to 2022 involving 120 patients with chronic anal fissures whowerenotrespondingtoconservativemanagement. Patientswithtuberculosis, immunocompromised patients, those with multiple anal fissures,anorectal abscesses or anal malignancies were excluded from the study.Those with a previous history of fecal incontinence or anal stenosis, previous anal surgeries,a history of bleeding diathesis, urinary retentionand patients with a history of diabetes or hypertensionwere also excluded. Patients underwent either manual dilatation of the anus (to a maximum of four fingers) with fissurectomy or lateral sphincterotomy, which involved a 1 to 2 cm circumferential incision over the free edge of the internal sphincter, based on random selection.Complicationsrelated to the procedures were recorded.Dressingwas removed on the first post-operative day and discharged on the second post-operative day.The first visit was scheduled within one week, followed by a second visit in the subsequent week. Further follow-up was scheduled at the end of six weeksfollowed by monthly visits. During each visit, enquiries were made regarding the expected complications. Patients were also examined to rule out anorectalsepsis.The results of the follow-up were tabulated and analyzed.

RESULTS

Table 1 displays the demographic profile of the study subjects. Of the total 120 patients, 88 (73.3%) underwent lateral sphincterotomy, while 32 (26.67%) underwent manual dilatation of the anus with fissurectomy. A majority of 82 patients (68.33%) were between 20 and 39 years old. 32 patients (26.67%) were over 40 years old. 52 patients (43.33%) were males. 68 patients (56.67%) were female.

Age/Operation	**LIS**	**MAD+F**	**Total**
<20years	4	2	6
20-39years	59	23	82
>40years	25	7	32
Total	88	32	120
Sex/Operation	**LIS**	**MAD+F**	**Total**
Male	36	16	52
Female	52	16	68
Total	88	32	120
Table1: Demographic Profile			

32 patients out of 120 (26.67%) had associated hemorrhoids. Out of 120 patients, two had a fistula-in-ano. (Table 2)

Condition/Operation	**LIS**	**MAD+F**	**Total**
Haemorrhoids	23	9	32
Fistula-in-ano	2	0	2
Total	25	9	34
Table2:DistributionofAssociatedDiseasesinBoththeGroups			

As shown in Table 3, 54patients outof120complainedofpersistentpain.The remaining66hadnopain.Ofthe54paitentswhohadpain,30belongedto thelateralsphincterotomygroupand 24 belonged to the fissurectomy group.28patients outof120complainedofpersistentbleeding.The remaining92hadno bleeding.Ofthe28paitentswhohadbleeding,19belongedtothesphincterotomygroupand 9 belonged to the fissurectomy group.

PersistenceofPain	**LIS**	**MAD+F**	**Total**
Present	30	24	54
Absent	58	8	66
Total	88	32	120
Persistence of Bleeding	**LIS**	**MAD+F**	**Total**
Present	19	9	28
Absent	69	23	92
Total	88	32	120
Table3:PersistencePain and ***BleedinginBoththeGroups***			

There were no reports of incontinence, flatus or motion among the two groups. There were no observations of infection (abscess or fistula) among the two groups.

There were no reports of anal stenosis among the two groups. 30 patients out of the 120 developed urinary retention. Of them, 18 belonged to the sphincterotomy group and 12 belonged to the fissurectomy group. (Table 4)

Complications	**LIS**	**MAD+F**	**Total**
Incontinencetoflatusorfaecal soiling	0	0	0
Infection	0	0	0
Anal stenosis	0	0	0
Retention of urine	18	12	30
Table4:Complications			

There were no reports of recurrences among the two categories.

DISCUSSION

Boyer originally described sphincterotomy as the preferred surgical procedure for treating persistent anal fissures.[5] As a result, numerous protocols have been created to deal with the problem. Among the suggested surgeries are advancement flap, posterior and lateral sphincterotomy, anal dilatation, and fissurectomy[6]At lateral internal sphincterotomy, the internal sphincter is split at the right or left lateral position, in its distal third, away from the fissure itself.[7] The primary goal of LIS is to lower the maximum anal sphincter pressure by 18%–50% in order to enhance the anoderm's blood flow. The fissure healing rate ranged from 93% to 95% when utilizing the open technique, and from 90% to 97% when using the close technique. Even yet, fissurectomy with manual dilatation is recommended for young adults whose sphincter tone is extremely high. Anecdotal and published data, however, indicatethat the pace of healing following a fissurectomy is similar to that following a LIS. According to a German study, chronic anal fissures can be successfully treated with fissurectomy.[8]Zubair et al.,[9] stated that while several surgical techniques have been used to treat chronic anal fissures, SLIS (Subcutaneous Lateral Internal Sphincterotomy), which has a success rate of 90–95%, has been shown to produce the greatest results.

During the study period, 120 patients with chronic anal fissures underwent admission and surgery. They were followed for a maximum of 2 months. The majority of the patients underwent lateral sphincterotomies, accounting for almost 73.3% of them. The remaining 26.67% underwent manual anal dilatation and fissurectomy.

Most of the patients belonged to the age group between 20 and 39 years (68.33%). This was followed by people over 40 years old (26.27%). The age group less than 20 years accounted for a meager 5%. A vast majority were females (56.67%), differing from other studies. The condition affects both genders and all age groups. Kumar et al. reported that the mean age of patients was 49.5 years,[10] while Ebinger and others reported that it

affects all age groups, especially youngsters.[11,12]Because females' anal canals are shorter, there is a higher chance of sphincter injury during delivery.[13] Numerous studies indicate that women undergo a longer LIS procedure than men do.[14,15]This could potentially explain the higher frequency of complications observed in female patients.[16]Associateddiseaseslikehaemorrhoidsandanalfistulaswerealsotreated alongwiththesurgeryforthe analfissure.Haemorrhoidsaccountedforthemajority (26.67%). Only two patients presented with a low fistula-in-ano. For these two patients, a lateral sphincterotomy was done along with a fistulectomy.

Duringthe study period,the patientswerefolloweduptoknowwhethertheydevelopedany complications. Pain persisted in 45% of the patients after surgery. Among these patients, the majority fell into the lateral sphincterotomy group. On closer observation, it was found that 75% of the patients who had undergone manual anal dilatation with fissurectomy developed pain whereas, only 34% of the 88 who had undergone lateral sphincterotomy developed pain. Hence, a chi-square test was resorted to check this discrepancy. The test revealed that there was a higher chance of pain developing in patients who underwent manual anal dilatation with fissurectomy as compared to those who underwent lateral sphincterotomy ($p<0.001$).

In his three-month research on 146 patients, Aziz discovered a cure rate of 97.5%, no long-term complications, and 100% patient compliance.[17] 4.1% of individuals had flatus incontinence, although this was only temporary. In their LIS investigation, Schouten WR et al. discovered pain alleviation in 98% of the cases.[18] In his research on chronic anal fissures, Daniel O. discovered that while LIS is a successful operation with a high symptom resolution rate, there is a chance of either temporary or permanent incontinence.[19]

In a research by Khubchadani et al., problems occurred in up to 35% of patients after LIS.[20]A study by Littlejohn et al. found that 35% of patients reported mild straining after LIS.[21]

In the current study, 28 of the 120 patients who underwent surgery had detected bleeding. Nine patients underwent manual anal dilatation with fissurectomy, while 19 patients had undergone lateral sphincterotomy. In contrast to the previous group, which had a lower incidence (21.6% of 88), the latter group accounted for a higher percentage (28.13% out of 32). Once more, a chi-square test was performed to determine whether manual anal dilatation with fissurectomy resulted in increased bleeding. The likelihood of continuous bleeding and manual anal dilatation during fissurectomy did not significantly correlate ($p<0.05$).

The following are risk factors for incontinence disturbance: female sex, age over 40, anterior fissure, history of vaginal delivery, synchronous anorectal surgery, and technique.[22] At three months after surgery, Charua et al. discovered that 6.5% of patients who had undergone LIS experienced mild faecal incontinence.[23] According to Nyam et al.'s study, the percentage of patients experiencing gross incontinence, minor soiling, and incontinence to flatus was 23%, 39%, and 31%, respectively.[24] Hoffman and Goliger's investigation found that patients undergoing LIS occasionally experienced faecal and flatus incontinence.[25] According to Garcia et al., the percentage of LIS patients experiencing incontinence was rising from 16.1% to 26.7%.[26] In their investigation, Walker et al. discovered different findings from the studies mentioned above.[27] After 100 patients underwent LIS, they carried out a long-term follow-up for 4.3 years and discovered a moderate level of soiling ranging from 3% to 5%. There was no occurrence of faecal soiling or incontinence in flatus, according to Mousavi.[28] More patients in the fissurectomy group experienced incontinence to flatus in the Bara BK et al.[16] study (p-value = 0.02). The group that underwent fissurectomy had a considerably greater incidence of incontinence between liquid and solid (p-values of 0.03 and 0.002, respectively). Adriano Tocchi's study on LIS revealed no long-term complications.[29] In a similar vein, neither group of patients in our study experienced faecal or flatus-related

incontinence.

Lateral internal sphincterotomy is an effective technique, but it comes with a risk of temporary or permanent incontinence to the flatus and feces. Popat reported flatus in continence in 2% of the population, which is comparable with our study.[12] Temporary incontinence to flatus occurred in 4 patients; 2 (4%) in lateral internal anal sphincterotomy and 2 (4%) in manual dilatation of the anus. Hareesh et al.[12] in a comparative study described that in manual anal dilatation, 3 (10%) patients experienced nocturnal soiling, whereas in lateral anal sphincterotomy, only 1 (3.3%) patients had this complication. In another study,[31] the authors did not observe any incidence of incontinence with manual dilatation of anus, but 1 (2%) from LIAS, which was in a female, probably with a weaker and shorter sphincter complex. Similarly, another study showed favorable results with manual dilatation of anus[32] but Vaithiancithan reported one patient with this complication.[33]

Of the 120 patients operated on, 30 incidentally experienced urinary retention, the most common complication after such surgeries. This accounted for 25%. However, among those who developed such a complication, the majority fell into the lateral sphincterotomy group (around 18 patients) compared to the other group, which had only 12 patients. There seemed to be an increased incidence of urinary retention among the lateral sphincterotomy group. So the samedatawassubjectedtoachi-squaretesttotestthesignificanceofthe relationship between the incidence of urinary retention and the surgery performed. The testrevealed that there was no significant relationship between urinary retention and the operation which that performed ($p<0.05$).In a study by Bara BK et al.[16] four patients in the LIS group showed retention of urine, whereas in the fissurectomy group it was twelve. Among them, 10 patients required postoperative catheterization.

Different studies report a recurrence rate ranging from 4 to 6%.In our study, no recurrences were reported from either of the two groups among the followed up patients. Similarly, Nawaz Aet al.[31]did notobserve any recurrence. However, the authors attributed it topoor follow-up.Bara BK et al.[16]also observed no recurrence in the fissurectomy group. However, two male patients developed a recurrence after undergoing LIS.

In either group, no patient suffered from anal stenosis or perianal infections. Similarly, no patient suffered from recurrence, anal stenosis, wound infection, or pain associated with defecation in a study by Nawaz A. et al.[31]

Recent studies have shown that lateral internal sphincterotomy is detrimental to the continence mechanism. Therefore, they turned to an alternative procedure. However, we found no significant differences between the two procedures, except for the increased risk of pain persistence in patients undergoing manual anal dilatation with fissurectomy.

In the present study,statistical examinations reveal no major or significant differences
between the two groups of patients. This may be due to the smaller number of patients. We need a larger series to accurately compare these two different techniques.

CONCLUSION

Manual anal dilatation with fissurectomy might be considered as an alternative procedure in the surgical management of chronic anal fissures, given the lower rate of complications but the higher chances of pain.However,its long term results and efficacy need to be ascertained through more extensive and largerclinical trials.

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