ORIGINAL ARTICLE

A Comparison between the Results of Fissurectomy and Lateral Internal Sphincterotomy in the Surgical Management of Chronic Anal Fissure

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ABSTRACT

Aim: To assess the result of fissurectomy and lateral internal sphincterotomy in terms of pain, bleeding, urinary retention, incontinence to flatus and faeces, perianal infection, anal stenosis and recurrence rate in chronic anal fissure.
Study Design: It is a comparative study.
Place and duration: Surgical unit I Amna Inayat medical college from May, 2011 to April, 2016.
Methodology: A total of ninety patients were included in the study. They were randomly divided into two groups, Fissurectomy (F) group and Lateral Internal Sphincterotomy (LIS) group. Forty three patients underwent fissurectomy (F) and forty seven patients underwent open lateral internal sphincterotomy (LIS).We assessed the patients after a median follow up of 18 months for early post-operative complications, persistence of symptoms and late post postoperative complication including recurrence.
Results: All patients in both groups were pain free and no bleeding in 1st post-operative week. Urinary retention was noted in five patients, four in group (F) 4(9.30%) and one patient in group (LIS) 1(2.12%). Incontinence to flatus was noted in 3 patients 3(6.97 %) in F group and no patient in (LIS) group n= 0. Incontinence to faeces (faecal soiling) in 2 patient 2(4.65%) in group F, but no incontinence to faeces noted in LIS group n = 0. No patient in either group was afflicted with anal stenosis or perianal infections. There were 3 patients 3(6.97%) developed recurrence of fissure in F group while non in the LIS group (n=0). Almost all wounds healed within 10 weeks. 46 patient 46(97.87%) in LIS group and 40 patients in group (F) 40(93.02%) were satisfied with the treatment.
Conclusion: Lateral internal sphincterotomy is the treatment of choice for the chronic anal fissure, recurrent fissure and cases which are resistant to the medical treatment.
Keywords: Chronic Anal fissure, Fissurectomy, Lateral internal sphincterotomy

INTRODUCTION

An anal fissure is a small tear in the distal anoderm[1]. It is common anal condition affecting all age groups but more commonly seen in young healthy adults with equal incidence in male and female[2]. It causes severe sharp anal pain on daefecation[3]. Occasionally accompanied by streak of blood alongside of stool or blood on toilet paper[4]. In anal fissure pain may persist for many hours after defecation that is much distressing to the patient and it causes proportionate worsening of quality of life[5]. It most commonly occurs in the posterior midline a longitudinal split in the distal anoderm extending from anal verge proximally towards the dentate line. Anterior and lateral anal fissures are also sometimes present[6]. Anal fissures are classified as acute and chronic anal fissures. Acute anal fissures having short duration of history causing severe pain and is usually occurs after the passage of hard stool through less elastic anoderm and heals spontaneously over a variable period of time that is more or less 6 weeks[7]. On the other hand chronic anal fissure has longer history and do not heal without intervention. Morphologically chronic anal fissures are wider, deep, edges are indurated with skin tag distally and a hypertrophied papilla proximally[8]. There are some atypical anal fissures occur anywhere in the anal canal and are associated with other diseases like Crohn's disease, tuberculosis, cancer, HIV infections and syphilis[9].

There are different nonsurgical and surgical treatments for acute and chronic anal fissures the objective of each therapy is to break the cycle of pain, spasm, and ischemia which is responsible for the development of anal fissure[10]. Medical therapy is an effective therapy in the acute cases but surgical intervention has been recommended for chronic anal fissures that have failed medical therapy[11].

Surgical treatment including fissurectomy and lateral internal sphincterotomy are the effective treatment modalities. The aim of all treatment modalities is to reduce the spasm of the internal sphincter[11,12]. Now the lateral internal sphincterotomy has become the standard treatment for chronic anal fissure[13].

The most distressing post-operative complications are incontinence to flatus and faecal soiling[14]. In fissurectomy the longer period of wound healing and higher incidence of disturbed continence secondary to keyhole deformity has been observed[15]. There is risk of disturbance in anal incontinence for flatus and solid stool but the incidence is quite low[16].

The aim of study was to assess the efficacy of fissurectomy with lateral internal sphincterotomy in patients with chronic anal fissure in terms of symptomatic relief, complications, and recurrence.

METHODOLOGY

This was prospective, randomized study conducted at Department of Surgery, Amna Inayat Medical College and Kishwar Fazal teaching hospital Shaikhupura Pakistan from May 2011 to April 2016. A total of 90 patients of chronic anal fissure with h/o pain and bleeding per rectum more

than 6 weeks and who were not responding to the medical treatment were included in the study. The mean age of the patients was 39± 4.74 years ranging from 20 to 64 years. In all patients the fissure was in the posterior midline. Patients with multiple fissures, fissures with co-morbid diseases and local anorectal pathologies like haemorrhoids, fistula in ano, inflammatory anorectal diseases and carcinomas were excluded from the study.

All patients were randomly divided into two groups Fissurectomy (F) group and lateral internal sphincterotomy (LIS) group.43 patients underwent fissurectomy (F) and 47 patients underwent open lateral internal sphincterotomy (LIS). All patients had classical symptoms of chronic anal fissure, which was situated in the posterior midline with sentinel pile. In all patients there was h/o failure of conservative /medical treatment. All patients were operated on the elective list under spinal anaesthesia in lithotomy position. Stool bulking agents started to all patients 48 hours before surgery and liquid diet started 24 hours before surgery. A kleen enema was given 6:00 pm a day before surgery and a second enema was given 6:00 am on the day of surgery. Intravenous antibiotics were given at the time of induction to cover the gram positive, gram negative and anaerobic organisms.

In fissurectomy (F) group the fissure was excised down to the internal sphincter with normal healthy mucosal margins, haemostasis secured and xylocaine lubricated gauze placed in the anal canal and pad was applied.

In lateral internal sphincterotomy (LIS) group the intersphincteric groove was identified after inserting the bivalved anal speculum and a small vertical incision was made at the mucocutaneous junction at left lateral position, internal sphincter identified and divided under direct vision upto the height of fissure. Haemostasis secured and xylocaine lubricated gauze placed in the anal canal and pad was applied. The pad was removed in both groups after 12 hours or when patient passed stool. Most of the patients in both groups discharged home within 48 hours after surgery with advice of warm sitzs bath, analgesics, antibiotic (metronidazole for 7 days) and stool bulking agents for 1 week. Patients were followed up for 3 months to 36 months with median follow up of 18 months. For the 1st 3 months patients were followed fortnightly for post-operative pain, and bleeding per rectum and perianal infection then monthly for five months and then 3 monthly for the remaining 12 months for late complications like pain, bleeding per rectum, incontinence of faeces, anal stenosis and recurrence of anal fissure

RESULTS

A total of 90 patients were entered in the study. We divided the patients randomly in two groups, fissurectomy group (F) and lateral internal sphincterotomy group (LIS). We kept 43 patients in (F) group and 47 patients in (LIS) group. Clinical examination revealed posterior midline anal fissure in all patients of both groups. Lateral anal fissures and anal fissures with association of other anorectal and gastrointestinal pathologies excluded from the study. In group (F) we performed fissurectomy and in group (LIS) we performed lateral internal spincterotomy.

Fissurectomy Group (F)	**Lateral internal sphincterotomy (LIS)**
n= 43(100%)	n=47(100%)
Male 32(74.41%)	Male33(70.21%)
Female 11(25.58%)	Female 14(29.78%)
Male to female ratio in (fissurectomy group) Group F	
Male (n= 32): Female (n= 11)	
Male: Female ratio = 2.9:1	
Male to female ratio (Group LIS)	
Male (n= 33): Female (n= 14)	
Male: Female ratio = 2.3:1	

The mean age of the patients in this study was 39± 4.74 years ranging from 20 to 64 years. The chief complaints i.e., pain on daefecation, bleeding per rectum and constipations were same in both groups.

Pain on daefecation in group (F)	43(100%)
Pain on daefecation in group (LIS)	47(100%)
Bleeding per rectum in group (F)	43(100%)
Bleeding per rectum in group (LIS)	47(100%)
Constipation in group (F)	43(100%)
Constipation in group (LIS)	47(100%)

In group (F) fissurectomy was performedin all patients under spinal anaesthesia and in group (LIS) lateral internal spincterotomy was performed under spinal anaesthesia.
In group (F) fissurectomy was performed in all patients 43(100%)

In group (LIS) lateral internal sphincterotomy was performed in all patients 47(100%). Post operatively the pain on daefecation, bleeding per rectum and constipation vanished within 5 to 7 days in all patients of both group

In the immediate post-operative period patients developed

1. Urinary retention in group (F) Urinary retention in group (LIS)	4(9.30%) 1(2.12%)
2. Flatus incontinence in group (F) Flatus incontinence in group (LIS)	3(6.97%) 0%
3. Faecal incontinence in group (F) Faecal incontinence in group (LIS)	2(4.65%) 00%

Later on other post-operative complications assessed

1. Perianal infection in group (F) Perianal infection in group (LIS)	0 0
2. Anal stenosis in group (F) Anal stenosis in group (LIS)	0 0
3. Recurrence of fissure in group (F) Recurrence of fissure in group (LIS)	3(6.97%) 0

In the immediate post-operative period 5 patients developed urinary retention, 4 patients in group (F) 4(9.30%) and 1 patient in group (LIS) 1(2.12%). All patients required indwelling foley's catheter for 24 hours. This urinary retention was transient and all were male patients of above 50 years of age and responded to adequate analgesia. The incontinence to flatus and feces, which was also transient observed in this series. Flatus incontinence in group (F) was seen in three patients 3(6.97%) while it was not observed in group (LIS) (n=o).

Fecal incontinence was seen in 2 patients 2(4.65%) in group (F) and it was not observed in group (LIS).The flatus and fecal incontinence were transient and responded to perineal exercises within 6 weeks.

Postoperatively no patients developed perianal infection and anal stenosis in either group.

The 3 patients 3(6.97%) presented with recurrent anal fissure within 18 months duration in group (F) but none was reported from group (LIS). One out of three patients responded to conservative treatment and fissure was healed within 6 weeks. The other two underwent lateral internal sphincterotomy and responded to the procedure.
In the study the duration of hospital stay was varied from patient to patient. The mean hospital stay in group (F) was 2.34±0.36 days and it was 1.19±0.64 in group (LIS). The maximum number of patients was discharged on the 3rdpost-operative day in (F) group whereas most of the patients were discharged on the 1stpost-operative day after the removal of anal packs in (LIS) group.

Hospital stay	Group (F)	Group (LIS)
Day 1	9(20.93%)	38(80.85%)
Day 2	10(23.25%)	9(19.14%)
Day 3	24(55.81%)	0
Total patients	43(100 %)	47(100%)
Mean stay + - SD	2.34 ± 0.36	1.19 ± 0.64
Mean hospital stay in group (F) = 2.34 ± 0.36		
Mean hospital stay in group (LIS) = 1.19 ± 0.64		

The mean age of the patients in this study was 39± 4.74 years ranging from 20 to 64 years. The chief complaints i.e., pain on daefecation, bleeding per rectum and constipations were same in both groups.
Pain on daefecation in group (F) 43(100%)
Pain on daefecation in group (LIS) 47(100%)
Bleeding per rectum in group (F) 43(100%)
Bleeding per rectum in group (LIS) 47(100%)
Constipation in group (F) 43(100%)
Constipation in group (LIS) 47(100%)

DISCUSSION

Anal fissure is a small tear in the anoderm extending from the anal verge to the dentate line. It has an equal incidence in both gender[17].

The age of patients ranged from 20 to 64 years with mean age of 39±4.74 years in our study which is comparable with other studies that reported mean age range from 30 – 45 years[18]. The presenting complaint was pain before, during and after daefecation, bleeding per rectum and constipation in all our patients 100%. But Al-Raymoonny AE reported variable incidence of presenting complaint about 90% of cases reported with bleeding per rectum and perianal swelling[19]. Now a days it is established that most anal fissures have a high resting anal canal pressure due to hypertonia of the internal sphincter[20,21]. This increased pressure may be due to pain and this high pressure reduces the vascular perfusion of internal sphincter at the site of fissure which effects the healing of the fissure[22]. We did fissurectomy in 43 patients and lateral internal sphincterotomy was performed in 47 patients. The surgical methods most commonly practiced in the past were forceful manual (four finger) sphincter dilatation[6]. Now a day the lateral internal sphincterotomy is the most common and regarded as the gold standard treatment for chronic anal fissure and can be effective in more than 90% of cases[23]. Other surgical methods are fissurectomy and fissurotomy[24]. In addition to these procedures Singh M et al. discussed the results of rotational flaps for chronic anal fissures which is 86% in his study[25] and same results mentioned by Giordano P et al. for local flaps and v-y advancement flaps[26]. The result of sphincterolysis mentioned by Gupta PJ. are good but study was very short[27]. Lateral internal sphincterotomy to relieve the spasm of the internal sphincter is considered the treatment of choice for chronic, recurrent and non-healing anal fissures[28]. Post operatively 5 patients 5(5.55%) developed urinary retention 4 patients in group (F) 4(9.30%) and 1 patient in group (LIS) 1(2.12%) which is comparable with other local series that is 7.4%[28]. This retention was due to pain and was transient and patients got relief after adequate analgesia, indwelling catheter and warm sitz bath. Flatus incontinence was seen in 3 patients 3(6.97%) in group (F) and no patient (n=0) developed this complication in group (LIS).Flatus incontinence in group (F) was transient and patient got control over flatus in a period of 6 weeks and responded to perineal exercises. Shaikh RA et al. reported 2.06% flatus incontinence in group (F) and 1.28% in group (LIS) in local series[7]. In our study 2 patients 2(4.65%) developed fecal incontinence in group (F) and no patient developed fecal incontinence in (LIS) group. Local series mention 1 patient in group (F) and no patient in group (LIS)[7]. Mousavi et al reported no incidence of incontinence either flatus or fecal in their series (18).But Garcia et al mentioned a high incidence of incontinence which is varying from 16.1% to 26.7% in patients undergoing lateralsphincterotomy[29]. The incidence of incontinence is directly related to the length of sphincterotomy but Mousavi*et al.* reported that the surgical estimates of the length of sphincterotomy in lateral sphincterotomy are not always accurate[18].

Later on in the follow up period no patient presented with perianal infection and anal stenosis. In the period of follow up of 18 months 03 patients 3(6.97%) presented with recurrence of anal fissure in group (F) and none was presented in group (LIS).One out of three patients responded to conservative treatment and fissure was healed within six weeks. The other two underwent lateral internal sphincterotomy and responded to the procedure. In one international study the recurrence rate of anal fissure after fissurectomy was 11.6%[30]. Abdul Wahid M Salih in his study in a follow up of 24 months reported that 2.5% patients developed recurrent disease after open lateral internal sphincterotomy[31], however in our study no patient presented with recurrent anal fissure in group (LIS) in a follow up period of 18 months. In our study 46 patients 97.87% in group (LIS) and 41 patients 93.34% in group (F) were satisfied with the procedures for their problems.

CONCLUSION

In the treatment of chronic anal fissure the lateral internal sphincterotomy is the gold standard treatment with its simplicity, better healing rates, almost negligible rate of recurrence, greater satisfaction of patients, minimal morbidity and lower rates of embracing complication like incontinence to flatus and faeces. It is the best treatment for chronic anal fissure resistant to medical treatment as well.

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