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Original article

Fissurectomy with posterior midline internal sphincterotomy and anoplasty in the management of chronic posterior anal fissures

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ABSTRACT

Objective: The objective of this study was to evaluate the efficacy and safety of fissurectomy with posterior midline internal sphincterotomy and mucosal anoplasty in the management of chronic posterior anal fissures in terms of symptomatic relief and complications.

Methods: 160 patients (male 74, female 86) aged 23–75 years (mean age, 38 years) were diagnosed having chronic anal fissures. Eighty patients from among them were randomly chosen for fissurectomy with posterior midline internal sphincterotomy and anoplasty (FPMISA), and the other 80 patients were chosen for lateral internal sphincterotomy (LIS). However, patients with acute anal fissures, fissures due to Crohn's disease, ulcerative colitis, tuberculosis, anterior fissures and hypotonic sphincter were excluded from this study. Symptomatic relief, postoperative healing and complications such as incontinence, keyhole deformity and recurrence were studied for a follow-up period of 18–24 months between September 2016 and December 2018.

Results: None of the patients had bleeding per anum, except minor postoperative pain. In the FPMISA group, wound healed in 74 patients (92.5%) in 2–4weeks. However, 6 patients (7.5%) developed a keyhole deformity with a serosanguinous discharge duo to bacterial infection, which ultimately healed taking further 2 weeks. Transient incontinence to flatus (6.25%) and faeces (3.75%) were seen. None of the treated patients reported recurrence. On the other hand, in the LIS group of patients, wound healed in 90%, taking about 4–6 weeks. There was no significant difference in incontinence.

Conclusion: Fissurectomy with posterior midline internal sphincterotomy and mucosal anoplasty is safe with minimal complications. It is still a dependable alternative treatment for chronic posterior anal fissures. The fear of keyhole deformity can be well addressed with the added anoplasty.

1. Introduction

Anal fissure is a tear in the anal canal distal to dentate line. Approximately 90% of anal fissures are seen posteriorly in the midline. Recent studies showed poor blood flow of the inferior rectal artery at posterior commissure of the anal canal which might be aggravated by hypertonicity of the internal sphincter, leading to ischaemic ulceration.[1,2] Pathophysiology of anterior fissures may be different from that of posterior fissures. Jenkin et al. opined that occult external sphincter injury with impaired function results in anterior fissures.[3] Hence, acute fissures and anterior fissures can be cured conservatively by nonoperative management, but posterior anal fissures do not heal, persist beyond 6 weeks and become chronic with raised edges, exposed internal sphincter and distal sentinel tag. Fissurectomy with lateral internal sphincterotomy (LIS) is widely accepted as the procedure of choice.[4–6] Various studies have compared open versus closed LIS and showed least difference in healing rates and incontinence.[8]

Anal dilation (AD) was most common in earlier days, but study showed more incontinence with high recurrence of 11% in AD versus 2% in LIS.[7] Hence, this procedure is abandoned.

Posterior internal sphincterotomy was described in earlier days[9] but became unpopular because of longer period of wound healing and incontinence due to a keyhole deformity. However, we successfully treated chronic anal fissures in 80 patients by performing fissurectomy with posterior midline internal sphincterotomy and anoplasty (FPMISA) to overcome the keyhole deformity. Its advantage is that another wound is avoided at the lateral anal verge

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as in LIS. This article intends to describe the technique and efficacy of the said procedure with a comparison with LIS.

2. Materials and methods

A total of 160 patients (male 76, female 84) aged 23 to 75 years (mean age, 38 years) were diagnosed having chronic anal fissures and were treated between September 2016 and December 2018. Patients with acute anal fissures, chronic fissures associated with tuberculosis, ulcerative colitis, Crohn's disease and hypotonic anal sphincter were excluded from this study. Eighty patients with chronic posterior anal fissures were chosen randomly for FPMISA. Another group of 80 patients with similar complaints were treated with LIS only. Pain and bleeding per anum were the main complaints with duration of symptoms varied from 4 weeks to 1.5 years. Eighteen patients had undergone haemorrhoidectomy previously and reported recurrence in association with anal fissure. Of all these 160 patients, 16.25% had diabetes and 22.5% had hypertension. Both groups of patients were prepared preoperatively with control of diabetes, hypertension and correction of anaemia. Sphincter tonicity was ascertained by digital rectal examination. After proper preanaesthetic check-up, patients were randomly chosen for surgery. Postoperative wound healing, symptomatic relief and complications such as incontinence to flatus and faeces, keyhole deformity and recurrence were studied in both groups with a follow-up of 18 months by contacting the patients physically and by phone interviews.

2.1. Surgical technique

The procedures were carried out under spinal anaesthesia or a short general anaesthesia. Entire length of fissure (Fig. 1) was excised at its raged margin and scared base up to the dentate line. The exposed internal sphincter (Fig. 2) was divided posteriorly at the midline using an electrocoagulator up to the dentate line (Fig. 3). The cut edge of rectal mucosa was mobilised and drawn down for suturing with the anoderm using a 3-0 chromic catgut (Figs. 4 and 5). Thus, an anoplasty was achieved covering the trimmed fissure and sphincterotomy wound which healed rapidly without any keyhole deformity. In the other group of patients with chronic posterior anal fissure, only LIS was performed. All the patients were hospitalised for 3–7 days and discharged with regular follow-up advises until the wound healed.

Fig. 1. Posterior anal fissure.

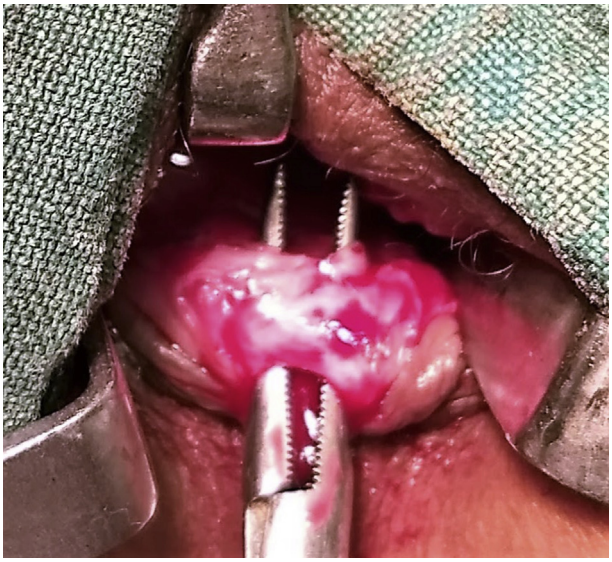

Fig. 2. Posterior anal sphincter.

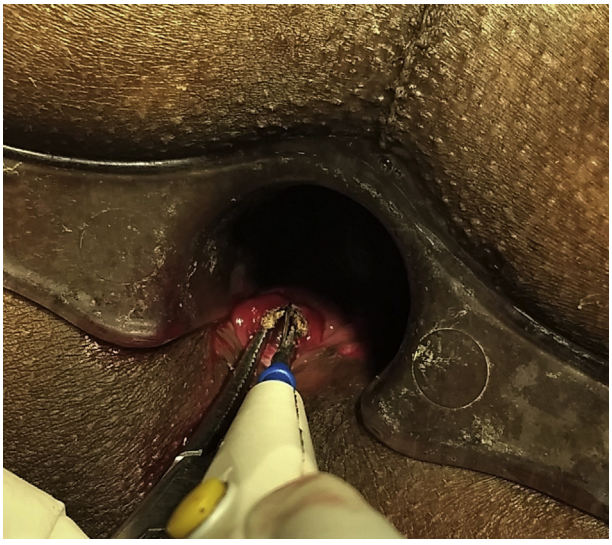

Fig. 3. Posterior anal sphincterotomy.

3. Results

Postoperative pain was present in all cases for 48 h, but none of them had bleeding per anum. Fifteen percent of patients required catheterisation for retention of urine. In the FPMISA group, wound was healed in 92.5% taking about 2–4weeks. However, 6 patients (7.5%) developed a keyhole deformity with a serosanguinous discharge duo to bacterial infection, which ultimately healed taking further 2 weeks. Transient incontinence to flatus (6.25%) and faeces (3.75%) were seen. None of the treated patients had reported recurrence. On the other hand, in the LIS group of patients, wound healed in 90% of patients taking about 4–6 weeks. There was no significant difference in incontinence (Tables 1 and 2).

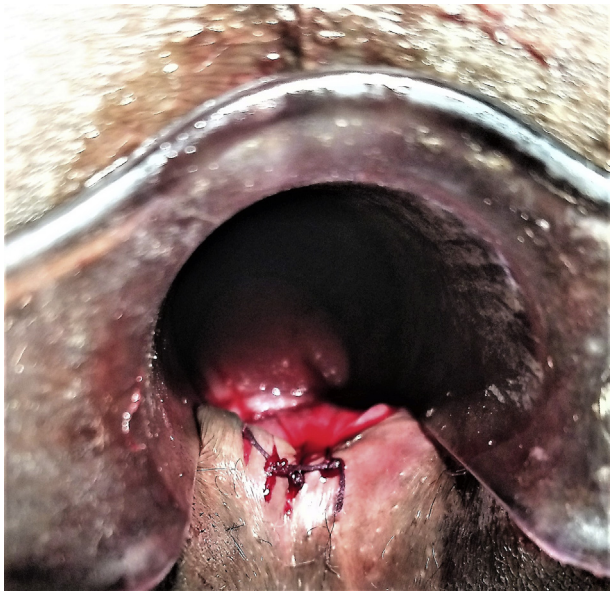

Fig. 4. Mucosal anoplasty.

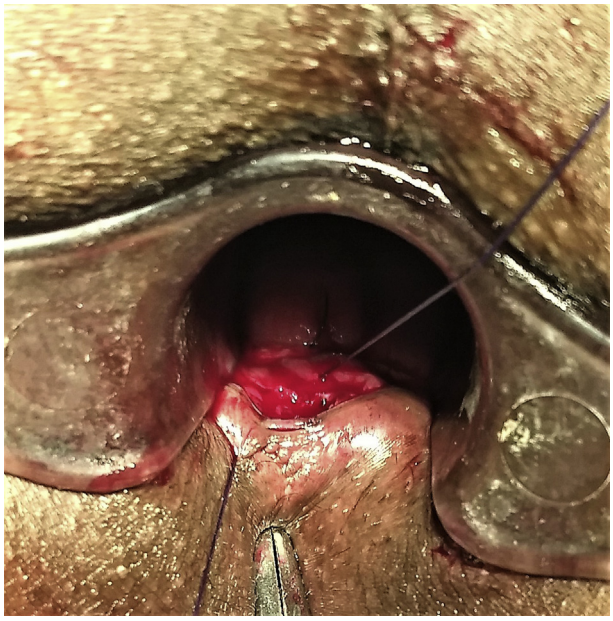

Fig. 5. Anal mucosa brought down over the sphincterotomy wound and sutured to the skin.

Table 1
Baseline characteristics of enrolled subjects.

Characteristics	FPMISA (n=80)	LIS (n=80)	p value
Age, years*	38 (25–75)	38 (23–72)	0.98
Gender			
Male	38 (47.5)	38 (47.5)	1.0
Female	42 (52.5)	42 (52.5)	1.0
Symptoms			
Pain	56 (70)	54 (67.5)	0.864
Bleeding per anum	72 (90)	70 (87.5)	0.803
Duration of symptoms #	4 weeks to 1 year	4 weeks to 1 year	–
Previous haemorrhoidectomy	10 (12.5)	8 (10)	0.617

Data expressed as n (%) unless specified. * mean (range), # range.

Table 2
Outcomes of patients with chronic anal fissures.

Characteristics	FPMISA (n=80)	LIS (n=80)	p value
Postoperative pain			
At 48 hours	76 (95)	72 (90)	0.368
By 7 days	4 (5)	8 (10)	0.368
Bleeding per anum	0	6 (7.5)	0.283
Wound healing			
By 2 weeks	66 (82.5)	60 (75)	0.333
By 4 weeks	74 (92.5)	72 (90)	0.780
Duration of wound healing days*	18 (10)	24 (6)	<0.001
Complications			
Transient incontinence			
Flatus	5 (6.25)	6 (7.5)	0.999
Faeces	3 (3.75)	4 (5)	0.999
Keyhole deformity	6 (7.5)	0	0.283
Bacterial infections	6 (7.5)	8 (10)	0.780

Data expressed as n (%) unless specified. * mean (SD).

4. Discussion

Fissurectomy with posterior midline internal sphincterotomy (PMIS) for chronic anal fissure has been reported by Nahas et al.[10] and Memon et al.[11] as having a low rate of complications and negligible rate of recurrence.[10,11] Angelo Di Castro et al.[12] have published fissurectomy with posterior midline sphincterotomy and anoplasty reported negligible faecal or flatus incontinence. A keyhole deformity was seen in 11.3%, but wound healed taking a mean time of 4 weeks. Abcarian[13] while comparing both procedures had reserved fissurectomy with PMIS for complicated chronic anal fissures preferring LIS for uncomplicated cases.

Two meta-analyses of retrospective studies showed no significant difference in persistence of symptoms or incontinence when compared with LIS with PMIS.[14] In 2011, Nelson et al. [15] analysing 27 studies and 13 different operative procedures for chronic anal fissures concluded that manual anal stretching should be abandoned and open and closed LIS appears equally effective, but more data were needed to assess the effectiveness of PMIS. Dermal flap coverage for chronic anal fissures has shown to have a lower incidence of anal incontinence than LIS.[16] In our study, adding anoplasty to the fissurectomy with posterior midline sphincterotomy had shown a quicker wound healing with minimal anal incontinence to faeces and flatus than LIS.

5. Conclusion

Fissurectomy with posterior midline internal sphincterotomy and mucosal anoplasty is safe and effective with minimal complications. It is still a dependable alternative treatment for chronic posterior anal fissures. It avoids another additional wound as in LIS. The fear of keyhole deformity can be well addressed with the added anoplasty.

Funding

Nil.

Declaration of competing interest

None.

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