

Full Length Research Paper

The technique of combined fissurectomy and posterior internal sphincterotomy for chronic anal fissure

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Lateral internal sphincterotomy is a more commonly performed procedure for chronic anal fissure than posterior internal sphincterotomy with claims of better outcome with the former. In this report, we looked at the outcome of combined fissurectomy and posterior internal sphincterotomy over a 5-year period. The aim of the study was to assess the efficacy and safety of combination of fissurectomy with posterior internal sphincterotomy in the management of chronic anal fissure. A five-year prospective study was carried out between 2014 and 2018, where consecutive patients aged between 20 and 70 years that presented to a surgical clinic with chronic anal fissure were recruited and administered questionnaires for demographic information. They all had fissurectomy combined with posterior internal sphincterotomy under spinal anaesthesia. They were then assessed postoperatively for pain, bleeding, anal incontinence, wound healing and recurrence during the immediate and late postoperative period and values entered into the pro forma. A total of 64 patients were seen, out of which 78.1% (50) were males while 21.9% (14) were females, giving a male to female ratio of 3.6:1. The mean age was 37.1 (\pm 8.757) years, median age was 35.0 years and modal age was 30.0 years. Pain was the most frequently reported complication at 78.1% (50), followed by wound infection, 7.8% (5) and bleeding, 3.1% (2). 3% (2) had flatus incontinence and 8% (5) had no reportable complication. No case of fissure recurrence or fecal incontinence was seen. Seventy eight percent (50) achieved wound healing in 4 weeks, 20.3% (13) healed in 6 weeks while 1.6% (1) healed in 8 weeks. The mean healing period was 4.2 weeks. Results were analyzed using the SPSS version 23.0. Therefore, combined fissurectomy and posterior internal sphincterotomy is a safe and effective management option for chronic anal fissure.

Key words: Fissurectomy, posterior, internal, sphincterotomy.

INTRODUCTION

Anal fissures are tears of the anal mucosa distal to dentate line. Severe pain following defecation is a constant feature with or without associated bleeding, and such pain may last a few minutes to hours (Hananel and Gordon, 1997; Lund, 2006). Anal fissures that heal spontaneously within 6 weeks are termed acute fissures while those lasting more than 6 weeks are classified as chronic fissures, which may require intervention to achieve healing (Wald, 2014; AGA, 2003). Posterior fissures are more common than anterior fissures (Steele, 2006). Rarely, atypical anal fissures other than posterior and anterior may occur in association with tuberculosis, syphilis, HIV infection, anal cancer, Crohn's disease and ulcerative colitis. Surgery for chronic anal fissure aims to

reduce anal resting tone occasioned by internal anal sphincter spasm. This increases blood supply to the anoderm, thereby promoting healing. Several operative techniques (fissurectomy, anal dilation, internal sphincterotomy and advanced flap) have been developed for the management of chronic anal fissure with conflicting results (Nelson, 1999). The operation of internal sphincterotomy was originally performed posteriorly as first reported by Miles in 1939 (Brodie, 1835). Bennett and Goligher (1962) reported a cure rate of 93% associated with posterior internal sphincterotomy, but also noted a high incidence of impairment for flatus (34%) and fecal incontinence (15%) in their work published in 1962. Another troublesome complication of

Table 1. Age distribution of patients with anal fissure.

Age	Frequency	Percentage (%)
20 - 29	10	15.7
30 - 39	32	50.0
40 - 49	13	20.3
50 - 59	9	14.0
60 - 69	0	-
Total	64	100.0

posterior internal sphincterotomy often reported in literature is the creation of a persistent large wound in the posterior midline with “key-hole deformity”, which may lead to constant seepage and soiling. Lateral internal sphincterotomy popularized by Eisenhammer was originally performed as an open procedure in which one-half of the internal anal sphincter was divided (Eisenhammer, 1959). Notaras (1969) later described a closed modification of this procedure which he called lateral subcutaneous sphincterotomy in 1969 with claim of better outcome. McNamara et al. (1990) also reported a significant fall in anal resting pressure with complete healing and resolution of all symptoms following lateral subcutaneous sphincterotomy prospectively performed on 13 patients with chronic anal fissure. However, in a meta-analysis of operative techniques for fissure-in-ano, Nelson reported that posterior midline sphincterotomy was not significantly different from lateral sphincterotomy in terms of persistence of symptoms or incontinence (Nelson, 1999).

This study therefore was conducted to assess the efficacy and safety of combination of fissurectomy with posterior internal sphincterotomy in the management of chronic anal fissure.

METHODOLOGY

This was a five-year prospective longitudinal study in which consecutive patients aged between 20 and 70 years with chronic anal fissure presenting to the surgical clinic of Usmanu Danfodiyo University Teaching Hospital, Sokoto between 2014 and 2018 were recruited and administered questionnaires for demographic information. Face validity test with a Cohen's kappa index of 0.70 validated the semi structured questionnaires, while the internal consistency measure (reliability) using the Cronbach alpha coefficient was greater than 0.70. All the sixty-four patients seen during the study period had chronic posterior anal fissure (Chronicity here is defined as fissures lasting 6 weeks or more). The patients were counseled and prepared for operation. They all had fissurectomy combined with posterior internal sphincterotomy under spinal anaesthesia. In lithotomy position, a bivalve anal speculum was inserted into the

anal canal to stretch the internal sphincter. The boat-shaped fissure with its sentinel skin tag was excised to expose the stretched circular fibers of the internal sphincter, which was then divided along the entire length of the fissure (‘tailored’ sphincterotomy). A temporary hemostatic pad was finally applied, and all patients were routinely catheterized for 24 h postoperatively and placed on analgesics and prophylactic antibiotics. They were then assessed postoperatively for pain, bleeding, anal incontinence, wound healing and recurrence during the immediate and late postoperative period, and values entered were into the pro forma. The follow-up period lasted for 18 months. Both quantitative and qualitative variables were presented as frequencies and percentages. The mean \pm standard deviation and median values were calculated for all continuous variables. Results were analyzed using the IBM SPSS version 23.0

Inclusion/exclusion criteria

All consenting patients with clinical diagnosis of chronic anal fissure aged between 20 and 70 years were included, while all non-consenting patients and patients with multiple fissures were excluded from the study. All patients on steroids, diabetic patients and patients with other debilitating comorbid conditions were also excluded.

Ethical consideration

Ethical clearance was obtained from the institution's ethical committee before commencing this study.

RESULTS

A total of 64 patients were seen. Out of this, 78.1% (50) were males while 21.9% (14) were females giving a male to female ratio of 3.6:1. The mean age was 37.1 (\pm 8.757) years, median age was 35.0 years and modal age was 30.0 years. Table 1 shows the age distribution of respondents. Pain was the most frequently reported

Table 2. Post-operative complications of patients with anal fissure.

Complications	Frequency	Percentage (%)
Pain	50	78.1
Wound infection	5	7.8
Bleeding	2	3.1
Flatus incontinence	2	3.1
Total	59	92.2

Table 3. Post-operative wound healing in weeks.

Post-operative wound healing (Weeks)	Frequency	Percentage (%)
4	50	78.1
6	13	20.3
8	1	1.6
Total	64	100

complication at 78.1% (50), followed by wound infection, 7.8% (5) and bleeding, 3.1% (2). No bleeding was however significant enough to require blood transfusion. 3% (2) had flatus incontinence, which resolved within 4 weeks post-operative period, while 8% (5) had no reportable complication. No case of fecal incontinence or recurrence was seen during the study period (Table 2). 78% (50) achieved wound healing in 4 weeks, 20.3% (13) healed in 6 weeks, while 1.6% (1) healed in 8 weeks. The mean healing period was 4.2 weeks (Table 3).

DISCUSSION

The mean age of 37.1 years in this study showed that anal fissure occurred predominantly in young adult age than in the extremes of life. There was a male preponderance in a ratio of 3.6:1. Our figure agreed with most published works from Nigeria and the rest of the world (Ajayi et al., 1974; Badejo, 1984; Memon et al., 2010; Hananel and Gordon, 1997). Ajayi et al. (1974) in a retrospective analysis of anal fissures, fistulas, abscesses, and hemorrhoids in a tropical population (Ibadan, Nigeria) found that more than 70% of the patients were between the ages of 21 and 40 years with a male to female ratio of 2:1. Memon et al. (2010) prospectively operated on 136 patients with chronic anal fissure over a three-year period and concluded that males predominated in a ratio of 2.6:1 with the mean age being 38 years. Acute urine retention was reported to be the most common complication in that study at 7.4%, followed by pain at 4.4%. Pain was however the commonest post-operative complication in our study at 78.1%, followed by wound infection at 7.8%.

Two of our patients (3%) had impairment of flatus, which resolved few weeks post-operatively. Mausavi et al. (2009), while comparing results of fissurectomy with

lateral internal sphincterotomy among patients with chronic anal fissure, also reported 2(6.2%) cases of flatus incontinence and one (3.1%) case of fissure recurrence in the fissurectomy group, but none in the lateral internal sphincterotomy group (Mousavi et al., 2009). Both groups were healed satisfactorily within 8 weeks without wound infection or anal stenosis (Mousavi et al., 2009). Almost all our patients were healed satisfactorily within 6 weeks with 78% (50) of the healing occurring in 4 weeks. There was no report of fecal incontinence, anal stenosis or fissure recurrence in our study. Some authors have however reported a high incidence of fecal incontinence and recurrence following lateral internal sphincterotomy (Garcia-Aguilar et al., 1996; Amanulla, 2006; Farouk et al., 1997). Garcia-Aguilar et al. (1996), in a retrospective review, compared long-term results of open versus closed internal sphincterotomy for chronic anal fissure and also reported a fissure recurrent rate of 10.9% and 11.7% (Open versus closed); and soiling underclothing of 26.7% and 16.1% (Open versus closed). The fecal soiling was reported to be significantly higher among the open lateral sphincterotomy group than the closed group in that study. Farouk et al. (1997) also in a study using endo-anal ultrasonography to evaluate technical failure of lateral sphincterotomy were able demonstrate that the chief cause of persistence of fissures following sphincterotomy was due to failure in division of the internal sphincter itself in almost 70% of the patients. By contrast, a posterior midline sphincterotomy is easily performed following fissurectomy because the sphincter fibers are readily visualized and can be tackled directly.

Conclusion

In conclusion, fissurectomy combined with posterior internal sphincterotomy can be considered safe and

effective in the management of chronic anal fissure with 78.1% (50) wound healing in 4 weeks and 20.3% (13) healing in 6 weeks.

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