



Comparison of Postoperative Complications Associated with Closed Lateral Sphincterotomy and Fissurectomy with Dorsal Sphincterotomy in Chronic Anal Fissure

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Authors' contributions

This work was carried out in collaboration among all authors. Authors ZB and KMS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors ZHB and AGB managed the analyses of the study. Author SSAN managed the literature searches. Author ZAS critically reviewed and approved the final manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Background: Chronic anal fissure is clinical entity associated with significant pain and discomfort with bleeding. Different surgical options are being used nowadays to treat the ailment. Closed lateral sphincterotomy is being considered as gold standard treatment however, dorsal sphincterotomy with removal of chronic fissure is also used as treatment.

Objectives: To compare effectiveness and patient satisfactions after both surgical procedures. To identify the common complications associated both surgical procedures.

Methodology: The cross sectional conducted at Ghulam Muhammad Maher Medical College Sukkur from January 2016 to December 2019. Total 300 male patients with history of Chronic Anal Fissure for more than 6 months were included in the study. The patients were divided into two groups Group-A (150 patients) underwent lateral sphinterotomy whereas in Group-B (150 Patients)

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dorsal sphincterotomy with fissurectomy was performed. Randomization for grouping was performed by single blind sealed envelope technique. Patients with additional anorectal disease, haemorrhoids, HIV, HBV, HCV, and female patients were excluded from study. After performing surgery in both the groups follow-up was performed for 2 years and data was analyzed.

Results: Mean age was 30.5 4±12.3 years, most common site of fissure among our study population was 6 O' Clock (p-value=0.003), pain was seemed to be significant post-operative completion in both the groups however, both the treatment strategies appeared to be equally effective though patients in group B were more satisfied than group A.

Conclusion: Both methods of surgeries seemed to be equally effective in treating the ailment. Recurrence after both surgeries was uncommon though pain was common postoperative complication.

Keywords: Chronic anal fissure; closed lateral sphinterotomy; fissurectomy with dorsal sphinterotomy.

1. INTRODUCTION

Anal fissure is benign disease affecting anoderm, clinically presenting with pain and discomfort characterized by rise of resting internal anal sphincter pressure [1,2]. Anal fissure mostly cited at posterior midline in 90% of cases while anterior fissures are usually found in females in 25% and in males 8% of cases [3]. Anterior and posterior fissures can occur simultaneously in 3% of cases. It commonly affects posterior commissure at 6 O'clock and less likely at 12 O'clock. It is longitudinal split or tears extending from anal verge to dentate line, when present for more than 6 weeks it is considered as chronic fissure. Chronic fissure is characterized by ulcer at 6 or 12 O'clock with fibrotic base, sentinel skin tag and hypertrophied anal papilla [4-6]. Reason of involving posterior commissural site is due to its poor blood supply leads to delay in healing. Hard fecal matter causing repeated injury leading to its chronicity and recurrence [7].

Patients having ulcers other than these sites needs evaluations to exclude crohn's disease, anal carcinoma, tuberculosis, retroviral illness, sexually transmitted disease etc [8]. Anal ulcer is presented with pain and discomfort during defecation pain is burning or tearing in nature associated with rectal bleeding with variable amount of itching and discharge [9,10]. Acute fissure is usually managed conservatively by giving symptomatic treatment along with laxatives and sitz bath. Sitz bath leads to healing via somatoanal reflex that result in relaxation of internal anal sphincter [11]. Hypertonia in Internal anal sphincter is considered as cause of anal fissure. Relative ischemia of posterior anal canal has been implicated in chronic non healing anal fissure [12].

Different pharmacological drugs have been used topically to treat anal ulcers by reducing anal

tone and increasing its vascularity [13]. These topical drugs include glyceryl trinitrate, calcium channel blockers, botulinum toxins, alpha adrenergic receptor antagonists, beta adrenoreceptor agonists, muscarinic agonists. These drugs are used along with laxatives to avoid constipation which is one of the factors of anal fissure. Currently, lateral sphinterotomy or dorsal sphinterotomy with removal of sentinel pile, fibrotic base and anal papilla are gold standard procedures with promising outcome. The aims of current study were: to compare effectiveness and patients satisfactions after both surgical procedures and to identify the common complications associated both surgical procedures.

2. METHODOLOGY

It was a cross sectional study conducted at Ghulam Muhammad Maher Medical College Sukkur from January 2016 to December 2019. Total 300 male patients with history of Chronic Anal Fissure for more than 6 months were included in the study. The patients were divided into two groups Group-A (150 patients) underwent lateral sphinterotomy whereas in Group-B (150 Patients) dorsal sphincterotomy with fissurectomy was performed. Randomization for grouping was performed by single blind sealed envelope technique. Patients with additional anorectal disease, haemorrhoids, HIV, HBV, HCV, and female patients were excluded from study. All patients were admitted in day care unit, after performing all routine investigations. Surgical procedure was carried out in lithotomy position under spinal/regional anesthesia. Close lateral sphinterotomy was carried out with scalpel by dividing lower half of anal sphincter followed by 3-minute pressure over wound site to avoid hematoma and bleeding. While dorsal sphinterotomy was combined with removal of

sentinel pile, fissure base and anal papilla. All patients were discharged after 8 hours of surgery with antibiotic cover and analgesics with follow-up instructions in OPD after one week. All patients were advised for having sitz bath and stool softeners. All patients were followed for 2 years postoperatively for any sort of complications and results were analyzed by SPSS version 20. Chi-square test was applied to check the association of complication with surgical procedure, p-value < 0.05 was considered as significant at 95% confidence interval.

3. RESULTS

The common encountered age group was 22 to 55 years and mean age was 30.5 4±12.3 years. Most common site of fissure among our study population was 6 O' Clock (p-value=0.003) followed by 12 O' Clock as shown in Table 1. Presenting complaints of patients are depicted in Table 2. Pain was most common statistically significant postoperative complication in both the

groups however remaining complications associated with the conditions are mentioned in Tables 3 and 4 respectively. There was no any statistical significant difference in both the groups nevertheless when asked about satisfaction, patients who selected dorsal sphincterotomy with removal of sentinel pile, fissure base and anal papilla (Group B) were found to be more satisfied according to received response shown in Table 5.

4. DISCUSSION

Anal fissure is clinical entity associated with significant pain and discharge, bleeding per rectum and most commonly affecting the middle age group ranging from 22 years to 55years with mean age of 30.5year same age group was reported in a cohort with the complaints of this ailment by Saleh AM, et al. in 2017 [14]. Posterior midline fissure was the most prevalent type of anal fissures (93.3%) in our study population the same was observed by Beaty JS et al. [15]. Though the recurrence after surgical

Table 1. Site of anal fissure among study population

Total no. of patients	Site of fissure	Frequency	p-value
300	At 6 O' Clock	280 (93.33%)	0.003
	At 12 O' Clock	18 (6%)	0.143
	At 6 & 12 O' Clock	2(0.66)	0.203

Table 2. Presenting complaints of patients

Sr. no.	Symptoms	Total no. of patients	Frequency of presenting complaint	p-value
1.	Pain & Discomfort	300	300 (100%)	0.001
2.	Itching	300	200 (66.66%)	0.032
3.	Bleeding	300	220(73.33%)	0.022
4.	Discharge	300	90 (30%)	0.102
5.	Constipation	300	280 (93.33%)	0.007

Table 3. Post-operative complications in Group A (n=150)

Sr. no.	Complication	No. of patients with complaints	p-value
1.	Pain	40 (26.66%)	0.047
2.	Bleeding	8 (5.3%)	0.134
3.	Bruising	12 (8%)	0.111
4.	Gas Incontinence	15 (10%)	0.146
5.	Fecal Incontinence (Temporary)	3 (2%)	0.230
6.	Temporary Infection	15 (10%)	0.146
7.	Recurrence in 2 Years	5 (3.33)	0.195

Table 4. Post-operative complications in Group B (n=150)

Sr. no.	Complication	No. of patients	p-value
1.	Pain	55 (36.66%)	0.013
2.	Bleeding	12 (8%)	0.124
3.	Bruising	1 (0.66%)	0.234
4.	Gas Incontinence	16 (10.66%)	0.195
5.	Fecal Incontinence (Temporary)	8 (5.33%)	0.153
6.	Infection	15 (10%)	0.146
7.	Recurrence in 2 Years	2 (1.33%)	0.220

Table 5. Patient satisfaction response

Group (n=150/group)	Are you satisfied by the treatment provided to you?		p-value
	Yes	NO	
Group A	56 (37.3%)	94 (62.6%)	0.129
Group B	106 (70.66%)	44 (29.33%)	0.011

intervention is not common however in our study recurrence rate of disease was found to be more in Group-A (3.33%) i.e. patients who underwent lateral sphincterotomy then in Group-B (1.3%) who chose dorsal sphincterotomy with fissurectomy during randomization. Contrary to our result, it was documented by Mahendran R. A et al. that fissures occurring in midline have more recurrence rate however there is no association of surgical intervention with recurrence rate [16]. The complaint of gas and fecal incontinence were temporary and relieved in few weeks postoperatively though it is mentioned that due to lateral sphincterotomy patient may develop these complications for life time [17]. It should be identified in future that, is there any underlying risk factor i.e. genetic or environmental due to which these complications are seemed to be temporary in few individuals after surgery and in some these are developing for rest of their lives. Pain seemed to be less in group A as shown in Table 3. The most common complaint reported by patients in both the groups was pain similar to our study Manoharan et al. also documented identical results [18,19]. Overall complication occurrence rate was comparable in both groups. Patients were found to be more satisfactory in Group-B the reason of satisfaction was supposed to be low rate of recurrence and following post-operative instructions on routine bases. It was a single centered study conducted at government sector hospital. Other comorbidities were not excluded in study so study cannot make inference on relation of recurrence with chronic diseases.

5. CONCLUSION

Both methods of surgeries seemed to be equally effective in treating ailment however patients in

Group-B were more satisfied. Posterior midline fissure is more common and pain with discomfort was major presenting complaints among all study participants. Recurrence after both surgeries was uncommon though pain was common postoperative complication.

CONSENT

Consent was taken prior to participation.

ETHICAL APPROVAL

ERC approval was taken from Khairpur Medical College and ethics reference code 2405720AAPHA was issued.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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