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Original Research Article

FREQUENCY OF POSTOPERATIVE FECAL INCONTINENCE IN PATIENTS UNDERGOING OPEN ANAL INTERNAL SPHINCTEROTOMY FOR CHRONIC ANAL FISSURE

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ABSTRACT

Background: *Chronic anal fissure is a common proctologic condition characterized by pain and bleeding during defecation. Open anal internal sphincterotomy is considered the gold standard surgical treatment, though postoperative fecal incontinence remains a concerning complication that can affect quality of life.* ***Objective:*** *To determine the frequency of postoperative fecal incontinence in patients undergoing open anal internal sphincterotomy for chronic anal fissure.* ***Study Design:*** *Descriptive study.* ***Setting:*** *The Department of General Surgery at Lady Reading Hospital, Peshawar, Pakistan.* ***Duration of Study:*** *01-12-2024 to 01-05-2025.* ***Methods:*** *A total of 101 patients with chronic anal fissure were enrolled. Chronic fissure was defined as painful defecation with bleeding per rectum persisting for more than six weeks, with clinical findings of an anal mucosal tear or sentinel pile. All patients underwent open anal internal sphincterotomy under general anesthesia. Postoperative fecal incontinence was defined as uncontrolled passage of feces for ≥15 days after surgery. Data were analyzed using descriptive statistics.* ***Results:*** *The mean age of participants was 40.54 ± 14.85 years. There were 63 males (62.4%) and 38 females (37.6%). Postoperative fecal incontinence occurred in 15 patients, representing a frequency of 14.9%.* ***Conclusion:*** *Open anal internal sphincterotomy is an effective treatment for chronic anal fissure; however, postoperative fecal incontinence occurred in 14.9% of cases. Careful patient selection, preoperative counseling, and long-term follow-up are recommended to minimize and monitor this complication.*

Keywords: Fecal Incontinence, Anal Fissure, Internal Sphincterotomy

INTRODUCTION

An anal fissure represents a superficial tear in skin located distal to dentate line, commonly leading to frequent visits to emergency department. Chronic anal fissures (CAF) usually arise from hard stools, and constipation. It tends to happen in adults as well as children, particularly among individuals with previous instances of constipation, who encounter more recurrent episodes of the disorder. It may be categorised as acute, with a duration of less than six weeks, or chronic. Most AF are categorised as primary and usually manifest at the posterior midline. A minor proportion of these can be seen at anterior midline. Atypical or secondary fissures may arise from additional underlying factors that necessitate further investigation. The diagnosis of CAF is mainly clinical (1-3).

Faecal incontinence refers to involuntary expulsion of faecal material through anus or inability to regulate stool production. The severity of this condition can vary from involuntary transition of flatus to total faecal evacuation. The severity of disease greatly impacts a patient's quality of life (4, 5). Individuals going through faecal incontinence exhibit an involuntary release of liquid or solid faeces. True anal incontinence is marked by a loss of control over the anal sphincter, resulting in involuntary expulsion of faeces. Faecal incontinence can additionally arise from enlarged skin tags, haemorrhoids, and anal fistula (6-9).

Currently, various techniques are recognised in management of CAF. Among these methods, anal dilatation is most prevalent, with the most recent addition of lateral sphincterotomy for internal anal sphincter (IAS) (10). The latter includes a broad as well as generous division of lateral aspect of IAS muscles (11). Numerous studies have examined the combination of anal dilatation as well as lateral sphincterotomy; however, there is a shortage of research focused solely on lateral sphincterotomy for the treatment of CAF. A study reported a 96% cure rate in 585 patients, with 45% going through a form of incontinence following lateral sphincterotomy. Incontinence was short-term in majority of cases (12). A study observed the frequency of postoperative fecal incontinence (21.3%) in open anal internal sphincterotomy for CAF (13).

Research efforts must focus on unraveling the intricacies of this condition, fostering improved treatment modalities, and ultimately enhancing the quality of life for those living with postoperative incontinence. As there is no such work done on this subject on local level. Therefore, the goal of this study is to determine the frequency of postoperative incontinence in patients undergoing open anal internal sphincterotomy for chronic anal fissure in our health setup. The study will serve as a launching pad for a thorough exploration of postoperative incontinence in open anal internal sphincterotomy for chronic anal fissure. It underscores the gravity of the issue, emphasizing the urgent need for continued research, improved clinical practices, and enhanced patient support.

METHODOLOGY

Our study employed a descriptive design which was conducted in the Department of General Surgery at Lady Reading Hospital, Peshawar. The duration was from 01-12-2024 to 01-05-2025. We obtained ethical clearance prior starting the study from our hospital.

The sample size in our study was 101 which was determined using prior reported frequency of postoperative fecal incontinence of 21.3% (13) in similar procedure, 8% margin of error and 95% confidence level. Consecutive non-probability sampling was utilized.

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Patients included male and female patients aged between 18 and 70 years who were scheduled for open anal internal sphincterotomy to treat chronic anal fissures which were defined by a history of painful defecation with bleeding per rectum lasting more than six weeks along with clinical findings such as an anal mucosal tear or sentinel pile. Patients with concurrent conditions such as perianal abscesses or ulcerative colitis were not included.Each participant was provided with a detailed explanation of the study and consent was secured. Demographic information such as age, gender, weight, height, BMI and residence were recorded. We also recorded hypertension and diabetes status in the patients.The surgical procedure was performed under general anesthesia with the patient in the lithotomy position. The anal canal was visualized using an anoscope and a longitudinal incision was made in the anoderm to divide the distal half of the internal anal sphincter under direct vision which was followed by mucosal closure. Postoperative fecal incontinence was assessed and defined as the uncontrolled passage of feces persisting for at least 15 days in individuals who previously had control. All evaluations were conducted under the supervision of a consultant with over five years of post-fellowship experience. A proforma was allocated to record all the details.For data analysis we utilized SPSS 23. Mean and standard deviation was calculated for age, height, weight and BMI. Frequency and percentages were evaluated for gender, fecal incontinence, hypertension, residence and diabetes. Chi Square test was used for checking the association of fecal incontinence with demographics and comorbidities. P value was considered notable at ≤ 0.05.

RESULTS

The study included 101 patients with mean age 40.54±14.85 years. The average BMI of the patinets was 24.32±0.97 (Table 1). Among the cohort we observed that 63 (62.4%) were male while 38 (37.6%) were female. A slight majority of the participants 57 (56.4%) resided in rural areas compared to 44 (43.6%) from urban settings. Comorbidities were also documented with 24 (23.8%) patients having hypertension and 16 (15.8%) diagnosed with diabetes (Table 2). Postoperative outcomes revealed that 15 (14.9%) of the patients experienced fecal incontinence following the procedure while the remaining 86 (85.1%) reported no such complications (Table 3). Table 4 presents the association of fecal incontinence with demographics and comorbidities.

Table 1: Descriptive statistics

Variables	N	Mean	Std. Deviation
Age (Years)	101	40.54	14.85
BMI	101	24.32	.97

Table 2: Demographics and comorbidities

Demographics and comorbidities		n	%
Gender	Male	63	62.4%
	Female	38	37.6%
Place of living	Rural	57	56.4%
	Urban	44	43.6%
Hypertension	Yes	24	23.8%
	No	77	76.2%
Diabetes	Yes	16	15.8%
	No	85	84.2%

Table 3: Postop fecal incontinence

Postop fecal incontinence	n	%
Yes	15	14.9%
No	86	85.1%

Table 4: Association of fecal incontinence with demographics and comorbidities

Demographics and comorbidities		Postop fecal incontinence				P value
		Yes		No		
		n	%	n	%	
Age distribution (Years)	18 to 35	5	33.3%	38	44.2%	P > 0.05
	36 to 50	6	40.0%	28	32.6%	
	> 50	4	26.7%	20	23.3%	
BMI (kg/m^2)	18 to 24.9	11	73.3%	64	74.4%	P > 0.05
	> 24,9	4	26.7%	22	25.6%	
Gender	Male	11	73.3%	52	60.5%	P > 0.05
	Female	4	26.7%	34	39.5%	
Place of living	Rural	9	60.0%	48	55.8%	P > 0.05
	Urban	6	40.0%	38	44.2%	
Hypertension	Yes	3	20.0%	21	24.4%	P > 0.05
	No	12	80.0%	65	75.6%	
Diabetes	Yes	2	13.3%	14	16.3%	P > 0.05
	No	13	86.7%	72	83.7%	

DISCUSSION

The current study evaluated postoperative fecal incontinence in 101 patients undergoing open anal internal sphincterotomy for chronic anal fissures. Our cohort had a mean age 40.54±14.85 years with a balanced gender distribution (62.4% male, 37.6% female) and a predominance of rural residents (56.4%).

Comorbidities such as hypertension (23.8%) and diabetes (15.8%) were present in a subset of patients while the mean BMI (24.32±0.97) suggested a generally healthy weight profile. Postoperatively 14.9% of patients reported fecal incontinence with the majority (85.1%) experiencing no such complications. These findings highlight the demographic and clinical characteristics of the study population while underscoring incontinence as a notable albeit relatively infrequent adverse outcome.

The results align with the existing literature on open anal internal sphincterotomy which reports fecal incontinence rates ranging from 0% to 12%. Ghayas et al documented a slightly higher incidence of fecal incontinence which was 21.3% with open procedure while 4.3% with closed procedure (13). Chaudhary et al. observed transient fecal incontinence in 12% of patients which resolved within a month, they also reported that flatulence incontinence was observed in around 16% patients who had open anal internal sphincterotomy procedure. They

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documented lower rates of fecal and flatus incontinence in patients undergoing closed procedure (14). The 14.9% incidence in our study falls within this spectrum but leans toward the higher end possibly due to differences in surgical technique or patient selection.

Notably our cohort included a higher proportion of rural patients (56.4%) who may have delayed seeking care which could have potentially influenced postoperative recovery. The low BMI (24.32±0.97) and moderate comorbidity rates (hypertension: 23.8%; diabetes: 15.8%) did not appear to have notably elevated incontinence risk though larger studies are needed to confirm this observation.

Comparatively the meta-analysis by Tanveer et al. demonstrated that open anal internal sphincterotomy carries a higher incontinence risk than closed LIS (CLIS), in their analysis they concluded that CLIS patients had lower stay at the hospital, lower pain scores and also lower complications frequency when compared to open anal internal sphincterotomy (15). Our results (14.9%) further support this trend reinforcing open anal internal sphincterotomy as effective but marginally riskier for continence, since our study was conducted on a single cohort of patients who underwent open anal internal sphincterotomy procedure, the frequency of fecal incontinence was still not very high.

In contrast Sabuncuoglu et al. reported 0% incontinence after open anal internal sphincterotomy while our higher rate (14.9%) may reflect differences in follow-up duration, we monitored the outcome for 15 days while Sabuncuoglu et al had a follow up duration of six months, which clearly explain the disparity in the outcome (16).

CONCLUSION

In conclusion, we found that the frequency of postoperative fecal incontinence in patients undergoing open anal internal sphincterotomy for chronic anal fissure in our study was 14.9%. Open anal internal sphincterotomy is an effective procedure with lower rates of fecal incontinence.

DECLARATIONS

Data Availability Statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned. (IRB-954/LRH/ MTI)

Consent for publication

Approved

Funding

Not applicable

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTION

MUHAMMAD ABBAS (POSTGRADUATE RESIDENT)
Conceived the study, collected data, performed analysis and prepared the draft of the manuscript
ABDUL WAHAB (ASSOCIATE PROFESSOR)
Supervised the research, provided expert guidance, critically reviewed the manuscript and approved the final version
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Contributed to literature review, and Critical Input
SADAF SAID (POSTGRADUATE RESIDENT)
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All authors read and approved the final version of the manuscript.

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