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Frequency of Anal Fissure in Patients Presenting with Anorectal Symptoms in Surgical OPD

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ABSTRACT

Background: Anal fissure is one of the common anorectal disease causing pain and bleeding in patients with anorectal complaints. Early identification is important for proper management and to avoid complications. **Objective:** To determine the frequency of anal fissure in patients presenting with anorectal symptoms and its association with clinical factors. **Study Design:** Cross sectional study. **Duration and Place of Study:** This study was conducted from 4 March 2025 to 4 June 2025 in Surgical outpatient department of Ayub Teaching Hospital Abbottabad. **Methodology:** Total 225 patients with anorectal symptoms aged 18 to 70 years were included. Patients with other anorectal diseases and serious comorbid conditions were excluded. Detailed history and clinical examination including digital rectal examination was done. Anal fissure was diagnosed on identification of longitudinal tear in anal canal. Data was analyzed using statistical package for social sciences version 27. **Results:** Mean age was 45.04 ± 14.95 years and male patients was 62.2%. Anal fissure was found in 45 patients (20.00%). Pain on defecation was most common symptom 155 (68.90%). Significant association was seen with pain on defecation (p<0.001), rectal bleeding (p<0.001), difficulty in passing stools (p=0.018) and swelling (p=0.027). **Conclusion:** Anal fissure is common in patients with anorectal symptoms. Pain on defecation and rectal bleeding are strong indicators and help in early diagnosis.

INTRODUCTION

Anal fissure is one of the most common anorectal diseases presenting in patients with symptoms of anorectal disease.[1] It is described as a tear in the anoderm, and the tear is most commonly posteriorly placed in the midline. The most common cause of anal fissure is the passage of hard stools, which leads to trauma to the mucosal membrane of the anal canal.[2] The clinical presentation of anal fissure includes severe pain during and after defecation, which may last for several hours, and bright red bleeding in small quantities.[3] The presentation may be acute or chronic, and the chronic form of the disease is distinguished by the presence of the sentinel pile, hypertrophic anal papilla, and the presence of internal sphincter fibers.[4] The increase in resting anal pressure reduces the blood supply and slows the healing of the fissure.

In cases where anorectal symptoms are present, the differentiation between an anal fissure and other aetiologies, e.g., haemorrhoids, fistula-in-ano, and anorectal malignancy is necessary.[5] A detailed history and thorough clinical examination are essential in this regard, as the digital examination may be limited by the painful condition.[6] Many cases can be diagnosed by inspection only, which can be done by gently spreading the buttocks apart. The risk factors for an anal fissure include a low-fibre diet, dehydration, a sedentary lifestyle, and the postpartum state in females.[7] A long history of constipation is one of the main contributing factors; however, diarrhoea can also cause the onset of an anal fissure due to the constant irritation to the mucosa.[8] In addition, a fear of defecation may also develop in the patient, which may cause a vicious cycle.

Management of anal fissure depends on the duration and severity of the condition. In the beginning, the management is usually conservative. This includes a high-fibre diet, increased fluid intake, the use of stool softeners, and sitz baths.[9] This approach is collectively helpful for the relief of pain and healing. Topical preparations are also used for the relief of symptoms by reducing the spasms of the muscle using glyceryl trinitrate or calcium channel blockers. In cases where the condition does not improve, surgery is usually recommended. This includes a lateral internal sphincterotomy, which is usually effective but may cause complications such as incontinence.[10]

There is a scarcity of information about anal fissure in the population with anorectal symptoms in Swat, which makes the prevalence of anal fissure in the region unclear.

In Swat, a large proportion of the population consumes a low-fibre diet, does not drink sufficient water, and lacks knowledge about bowel habits, which are thought to increase the risk of anal fissure; however, these risk factors are not well researched. In Swat, healthcare facilities are scarce, and a large proportion of the population presents with chronic symptoms of anal disease, which makes the management of anal fissure difficult.

METHODOLOGY

This cross-sectional study was carried out in Surgical OPD of Ayub Teaching Hospital Abbottabad from 4 March 2025 to 4 June 2025. Approval was taken from hospital ethical committee before start of study and all procedures were done according to institutional guidelines. Total sample size was 225 patients which was calculated by using WHO sample size software with confidence level of 95%, margin of error 5%, and expected frequency of anal fissure 17.81% in patients attending surgical OPD with anorectal complaints.[11]

Inclusion Criteria

Patients were included who presented in surgical OPD with anorectal symptoms, of both genders, and age between 18 to 70 years. Anorectal symptoms were taken as presence of sharp pain during or after defecation with value ≥7 on visual analogue scale, or history of itching in anal area, or complaint of bleeding per rectum during or after defecation.

Exclusion Criteria

Patients were excluded who had history of any anorectal surgery in last 6 months. Patients having other anal diseases like anal carcinoma, anal abscess, fistula in ano, or inflammatory bowel disease involving anal region were also excluded. Patients with serious comorbid conditions including severe cardiac disease, chronic renal failure, immunocompromised state, coagulation disorders, or mental impairment were not included. Pregnant and breastfeeding females were also excluded from study.

Subsequent to approval from the ethics committee, patients were recruited for this study, and informed consent was obtained after explaining to them the purpose of the study, risks, and benefits. Demographic data collected at baseline included age, gender, body mass index (BMI), socioeconomic status, education level, and duration and type of presenting symptoms. A detailed history was taken for each patient, and a thorough clinical examination was performed. Local anorectal examination, including digital rectal examination, was performed for all patients, and proctoscopy was performed when needed to confirm the diagnosis. Standard practice management was performed at this visit. After completion of the clinical assessment, a diagnosis of anal fissures was made if a longitudinal tear in the tissue lining the anal canal is identified on digital rectal examination.

All collected data was entered and analyzed using IBM SPSS version 27. Quantitative variables like age were presented as mean ± standard deviation. Qualitative variables such as gender and presence of anal fissure were expressed as frequencies and percentages. Stratification was done with respect to age, gender, duration and type of symptoms. Post stratification chi square test or Fisher exact test was applied and p value ≤0.05 was taken as statistically significant.

RESULTS

The study was included total of 225 patients. The mean age of the participants was found to be 45.04 ± 14.95 years, and the mean body mass index was recorded as 28.41 ± 2.92 kg/m^2, showing that the patients were on average overweight category (Table-I). In terms of gender distribution, majority of the patients were male, that were 140 in number which make 62.2% of the total sample, while female patients were 85 in number accounting for 37.8% (Table-I). Regarding educational background, most of the patients were uneducated which were 64 (28.4%), followed by secondary education group having 56 (24.9%), primary education group were 46 (20.4%), intermediate was 32 (14.2%), and higher educated patients was only 27 (12.0%) in number (Table-I). In marital status, married patients were largely dominant at 210 (93.3%), whereas unmarried patients were only 15 (6.7%) (Table-I). Majority of the patients were belonging to rural areas with 139 (61.8%) and urban residents were 86 (38.2%) (Table-I). Socioeconomically, poor patients were the largest group comprising 105 (46.7%), followed by middle class that was 82 (36.4%), and rich patients were only 38 (16.9%) (Table-I). With respect to duration of symptoms, slightly higher proportion of patients had symptoms for more than 6 weeks with 119 (52.9%), while 106 (47.1%) patients had symptoms of 6 weeks or less duration (Table-I).

Table I

Patient Demographics

Demographics	Mean ± SD
Age (years)	45.04 ± 14.95
BMI (Kg/m^2)	28.41 ± 2.92
Gender	
Male n (%)	140 (62.2%)
Female n (%)	85 (37.8%)
Education	
Uneducated n (%)	64 (28.4%)
Primary n (%)	46 (20.4%)
Secondary n (%)	56 (24.9%)
Intermediate n (%)	32 (14.2%)
Higher n (%)	27 (12.0%)
Marital Status	
Married n (%)	210 (93.3%)
Unmarried n (%)	15 (6.7%)
Residence	
Rural n (%)	139 (61.8%)
Urban n (%)	86 (38.2%)
Socioeconomic Status	
Poor n (%)	105 (46.7%)
Middle n (%)	82 (36.4%)
Rich n (%)	38 (16.9%)
Duration of Symptoms	
≤ 6 weeks n (%)	106 (47.1%)
> 6 weeks n (%)	119 (52.9%)

Among all anorectal symptoms, pain on defecation was the most frequently reported symptom which was present in 155 patients with percentage of 68.90%, followed by difficulty in passing stools that was observed in 146 patients (64.90%), itching was reported by 104 patients (46.20%), and swelling was seen in 65 patients (28.90%) (Table-II).

Table II
Frequency of Anorectal Symptoms Among Patients Presenting with Anorectal Complaints

Symptoms	Frequency	% age
Pain on Defecation	155	68.90%
Itching	104	46.20%
Swelling	65	28.90%
Difficulty in Passing Stools	146	64.90%
Total	225	100%

Anal fissure was diagnosed in 45 patients that represent 20.00% of the total study population (Table-III).

Table III
Frequency of Anal Fissure Among Patients Presenting with Anorectal Symptoms

Anal Fissure	Frequency	% age
Yes	45	20.00%
No	180	80.00%
Total	225	100%

In the stratified analysis, the association of anal fissure with various demographic and clinical factors was examined among only those subgroups who had the respective characteristic present. Anal fissure was found in 19 patients (21.1%) among those who was aged 40 years or less, and this was not statistically significant with p-value of 0.734 (Table-IV). Among male patients, anal fissure was present in 32 cases (22.9%), however the association was not significant as p-value was 0.169 (Table-IV). Among patients with symptom duration of 6 weeks or less, anal fissure was found in 22 patients (20.8%), and the p-value of 0.789 indicate no significant association (Table-IV). Among patients who had rectal bleeding, 41 (35.0%) was diagnosed with anal fissure, and this association was found to be highly statistically significant with p-value less than 0.001 (Table-IV). Pain on defecation showed very strong association, where all the 45 anal fissure cases that were 29.0% was exclusively found among patients who had pain on defecation, and p-value was less than 0.001 (Table-IV). Among patients who had itching, anal fissure was present in 21 cases (20.2%), however the p-value was 0.947 which indicate no significant association was found (Table-IV). Among patients who had swelling, anal fissure was observed in only 7 patients (10.8%), and this association was statistically significant with p-value of 0.027 (Table-IV). Among patients who was having difficulty in passing stools, 36 (24.7%) was found to had anal fissure, and this was also statistically significant with p-value of 0.018 (Table-IV).

Table IV
Association of Anal Fissure with Demographic and Clinical Factors

Factors	Subgroups	Anal Fissure		p-value
		Yes n (%)	No n (%)	
Age (years)	≤40	19 (21.1%)	71 (78.9%)	0.734
	>40	26 (19.3%)	109 (80.7%)	
Gender	Male	32 (22.9%)	108 (77.1%)	0.169
	Female	13 (15.3%)	72 (84.7%)	
Duration of Symptoms	≤6 weeks	22 (20.8%)	84 (79.2%)	0.789
	>6 weeks	23 (19.3%)	96 (80.7%)	
Rectal Bleeding	Yes	41 (35.0%)	76 (65.0%)	<0.001*
	No	4 (3.7%)	104 (96.3%)	
Pain on Defecation	Yes	45 (29.0%)	110 (71.0%)	<0.001*
	No	0 (0.0%)	70 (100.0%)	
Itching	Yes	21 (20.2%)	83 (79.8%)	0.947
	No	24 (19.8%)	97 (80.2%)	
Swelling	Yes	7 (10.8%)	58 (89.2%)	0.027
	No	38 (23.8%)	122 (76.3%)	
Difficulty in Passing Stools	Yes	36 (24.7%)	110 (75.3%)	0.018
	No	9 (11.4%)	70 (88.6%)	

*Fischer Exact Test

DISCUSSION

The aim and objective of this study were to find out the prevalence of anal fissures among patients presenting with various kinds of anorectal symptoms and to find out whether it is associated with various presenting symptoms. Out of 225 patients, the results showed that anal fissures are not rare and that they are more associated with presenting symptoms. The age range for patients in this study was 45.04 ± 14.95 years, and most patients were males, totaling 140 (62.2%). Most patients were from rural areas, totaling 139 (61.8%), and most patients belonged to the low socioeconomic class, totaling 105 (46.7%). The prevalence of anal fissures among patients was 45 (20.0%), showing that anal fissures are not rare. The symptom most commonly associated with anal fissures was pain during defecation, which occurred in 155 patients (68.9%). This symptom showed a strong association ($p < 0.001$). Another symptom that showed a strong association ($p < 0.001$) and occurred in 41 patients with anal fissures (35.0%) was rectal bleeding. Difficulty in stool passage showed a strong association ($p = 0.018$). Swelling showed a significant relationship ($p = 0.027$) but occurred in fewer patients with anal fissures, totaling 7 (10.8%). Age, gender, and duration of illness were not associated with anal fissures.

The frequency of anal fissure in present study was found to be 45 (20.00%) among patients presenting with anorectal symptoms. This finding was somewhat comparable to Menyangbo *et al.* [12] who reported anal fissure frequency of 23.47% in anorectal patients, and also to Prince *et al.* [13] who found anal fissure in 27.3% of anorectal cases. However, Alomair *et al.* [14] reported a higher prevalence of 31.9%, while Lyle *et al.* [15] stated that general population frequency ranges from 10–15%. These differences may be because of variation in study settings, population characteristics, and method of patient selection, as hospital based studies tend to capture more symptomatic and advanced cases while community based studies may include milder or unreported cases.

In present study, male patients was 140 (62.2%) and mean age was 45.04 ± 14.95 years. This was in agreement with Iqbal *et al.* [16] who also reported mean age of 45.11 ±

13.26 years and male predominance with ratio of 1.25:1, and with Prince *et al.* [13] where majority of patients was males (86.9%) and aged 35 years or above. Similarly, Alomair *et al.* [14] also found higher frequency in males (54.6%). However, Menyangbo *et al.* [12] reported female predominance (57.6%) with younger mean age of 29.02 ± 13.58 years, which was quite different from present study findings. This difference may be explained by geographic and cultural differences, as in South Asian settings males are more likely to seek medical care and present to hospitals, while females may delay consultation due to social and cultural barriers. The younger age in Menyangbo *et al.* [12] study may reflect different dietary patterns and higher physical activity in that population.

Pain on defecation was the most frequently reported symptom in present study, observed in 155 (68.90%) patients, and it was significantly associated with anal fissure ($p<0.001$). This finding was strongly supported by Rahman *et al.* [17] who reported anal pain in 100% of their chronic fissure patients, and by Gawale *et al.* [18] who found anal pain in 85% of anorectal patients. The scientific basis for this is that anal fissure expose the internal sphincter which has rich nerve supply, and passage of stool over the raw fissure surface cause intense reflex sphincter spasm and pain. Rectal bleeding was present in 41 (35.0%) of fissure positive patients and also showed highly significant association ($p<0.001$), which was comparable to Rahman *et al.* [17] who found bleeding in 89.6% of chronic fissure cases. The relatively lower proportion in present study may be because not all included patients had confirmed chronic fissure, as the sample also included patients with other anorectal conditions.

Difficulty in passing stools was significantly associated with anal fissure in present study ($p=0.018$), and was observed in 36 (24.7%) of fissure cases. This was consistent with Rahman *et al.* [17] who reported constipation in 74.6% and with Alomair *et al.* [14] where constipation was identified as leading causative factor (32.8%). Hard stool and repeated straining cause mechanical trauma to the poorly vascularized posterior midline of anal canal, which make it most susceptible site for fissure development, as was also highlighted by Lyle *et al.* [15] who noted that 90% of fissures occur in posterior midline due to reduced perfusion. Most of the patients in present study was from rural areas 139 (61.8%) and belong to poor socioeconomic class 105 (46.7%), which may contribute to low dietary fiber intake and delayed health seeking behavior, a pattern also observed by Perveen *et al.* [19] who emphasized role of social factors and underreporting in anorectal diseases.

The limitations of the present study should also be considered. The present study was performed in one institution, and the data may not reflect the wider population groups. The number of patients included in the present study was 225, which may not be sufficient for the reliability of the associations found in the present research. The present study may also suffer from the problem of selection bias, as only patients who visited the hospital were included, whereas a significant number of patients with anorectal symptoms do not seek medical care.

CONCLUSION

It is concluded that anal fissure is a relatively common condition among patients presenting with anorectal symptoms, and its frequency is particularly high within this patient population. Pain during defecation and rectal bleeding have been identified as the clinical symptoms that are most associated with anal fissure and should be considered to be of major significance for its early suspicion and diagnosis.

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