



Prevalence and Seasonal Pattern of Anal Fissure in Rural Hospital of Nepal

Suryaman Menyangbo¹, Gakul Bhatta², Kripa subedi³

¹Department of General Surgery, Karnali Academy of Health Sciences

²International Training Fellow, GI surgery, UK.

³School of Nursing, Karnali Academy of Health Sciences

ABSTRACT

Introduction: Anal Fissure (AF) is a longitudinal tear in the epithelium of the anoderm within the anal canal. It is associated with symptoms of severe anal pain and rectal bleeding. While searching for literatures on AF prevalence in Nepal, there were hardly any systematic published studies except a few studies that mostly focused in the treatment and outcome of the disease. The objective of the present study is to report on AF prevalence with its seasonal pattern among anorectal disorder patients from this rural part of Nepal.

Methods: This was a retrospective cross-sectional study from June 2015 to March 2020 at the Karnali Academy of Health Sciences. The demographic characteristics features of anal fissure were recorded. Cases included all hemorrhoids, perianal abscess and fistula in Ano with a bleeding history. Previous fistulectomy, biopsy-proven tuberculosis and malignancy were excluded. Statistical analysis was performed using SPSS 16.

Results: A total of 1768 patients with ano-rectal disorders visited surgical outpatient department (OPD) during the study period. Of 1768 patients, 415 patients (23.47%) had anal fissures. The mean age of patients was 29.02±13.58 years. There were 176 male patients (42.4%) and 239 (57.6%) patients were female. The majority (n=148; 35.7%) of patients were in the group 20 to 29 years. Most of the patients with anal fissure visited during winter time (42.7%).

Conclusion: Anal fissure is common anorectal problem, with slight female predominance. The majority was found to affect the adolescent group.

Key words: Anal Fissures; Seasons; Prevalence, Anorectal disorders

Citation: Menyangbo S, Bhatta G, Subedi K. Prevalence and Seasonal Pattern of Anal Fissure in rural hospital of Nepal. JKISTMC 2020;2(2)4: 36- 41.

Correspondence

Dr. Suryaman Menyangbo

Assistant professor, department of General Surgery
Karnali Academy of Health Sciences

Email: Suryaman77@gmail.com, Mobile: 9779852662277

Conflict of interest: None

Source of support: None

Article info

Received: 15 June, 2020.

Accepted: 7 July, 2020.

Published: 31 July, 2020.

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INTRODUCTION

Anal Fissure (AF) is a longitudinal break or tear in the squamous epithelium of the anoderm within the anal canal that typically extend from the dentate line to the anal verge.¹ The primary symptom associated with anal fissure is severe anal pain which is often provoked by hard stool defecation and may last for several hours following defecation.² Anorectal bleeding may be associated with fissures, and it may sometimes contribute to a misdiagnosis of symptomatic hemorrhoids.³ Anal fissure with symptoms less than 6-8 weeks are considered minor or acute fissure, which heal spontaneously; but those with clinical symptoms persist for longer periods of time manifest more stigmata of chronicity including a sentinel tag, hypertrophied internal sphincters and considered as chronic anal fissure.^{3,4}

Anal fissure affects both males and females and is common in all age groups, especially young people.⁵ Despite advancements and extensive investigations; the exact etiology of anal fissure is still unknown. However, a possible cause of fissure could be either direct trauma from passage of hard stool or diarrhea or the spasm of internal sphincter muscle leading ischemia to the affected area.⁶ In up to 90% of cases, the anal fissure is found within the posterior midline of the canal. However, in 25% of females and 8% of males, the fissure is found at the anterior midline.^{7,8} In 3% of the patients, fissure can be found at the posterior and anterior position simultaneously.⁷ Fissure at the lateral and multiple fissures are often considered atypical, as these findings can be associated with HIV infection, ulcerative colitis, Crohn's disease, neoplasm and tuberculosis.^{9,9,10}

An anal fissure is a common disorder in this region; however, it lacks scientific documentation. In the US only, there are approximately 342000 new AF cases diagnosed in US each year.¹⁰ One prospective study, though a regional based in India, showed that the prevalence of anal fissure among patients with anorectal complaint is around 18%.¹¹ However, in the Nepal, there are a few studies regarding AF prevalence in general population. Study showed that delay in seeking treatment for anorectal disorder is negatively impacting the "quality of life" of patients and they are suffering from stress, psychological trauma and huge financial burden.¹² The prevalence of anal fissures in the general population is probably

higher than what is seen in clinical practice. Possibly that most of the patients hesitate to seek medical care unless the symptoms become too problematic.

In literature search, there are a few studies focused on the treatment and outcome of the disease in Nepal.¹³ The objective of the present study was to find the prevalence of anal fissures (AF) who visited surgery out patients department in this rural part of Nepal.

METHODS

This was a cross-sectional retrospective study, from June 2015 to March 2020, at Karnali Academy of Health Sciences (KAHS), Jumla, Nepal. Approval was taken from Institutional Review Committee (IRC) of KAHS. All patients visiting surgery outpatient department with anorectal disorders were recorded. The demographic characteristics of diagnosed anal fissure (AF) were performed. Months were recorded at which the diagnosis of AF was made for the entire five years period. Anorectal mass with bleeding history, previous fistulectomy, biopsy proven tuberculosis and malignancy were excluded.

Data was collected in the Microsoft Excel software record sheet which included demographic details, the months they visited OPD with final diagnosis. Statistical analysis was performed using SPSS software (version 16.0). The data obtained was analyzed, and presented in table using descriptive statistic such as mean, frequency and percentages.

RESULTS

A total of 1768 patients with anorectal disorder visited OPD during the study period. Of 1768 patients, four hundreds fifteen patients (23.47%) were diagnosed with anal fissure. The mean (SD) age of patients was 29.02±13.58 years. A total of 176 (42.4%) patients were males and 239 (57.6%) patients were females (Table 1). The majority (n=148; 35.7%) of patients were aged between 20 to 29 years and 25.1% of patients were between 30 to 39 years. The distribution between female and male patients were statistically significance found in two group 10-19 years and 20-29 years with P=0.003 and P=0.020 respectively (Table 2). Most of patients with anal fissure happened during pre-winter (21%) and winter (21.7%) seasons. For sex distribution, the highest number of AF was found in female gender (p <0.05(0.0001) (Table 3).

Table.1 Demographic features of patients

Age (years)	Frequency,(%)
<10	18(4.3)
10-19	66(15.9)
20-29	148(35.7)
30-39	104(25.1)
40-49	47(11.3)
50-59	14(3.4)
>60	18(4.3)
Mean	29.02±13.58 years
Male	176(42.4)
Female	239(57.6)

Table.2 Distribution of anal fissure in different age group in male and female.

Age(year)	Frequency/percentage	Gender Male	Female	Total	P-value
< 10	N	10	8	18	0.637
	%	2.4%	1.9%	4.3%	
10-19	N	21	45	66	0.003
	%	5.1%	10.8%	15.9%	
20-29	N	55	93	148	0.020
	%	13.3%	22.4%	35.7%	
30-39	N	49	55	104	0.556
	%	11.8%	13.3%	25.1%	
40-49	N	22	25	47	0.662
	%	5.3%	6.0%	11.3%	
50-59	N	7	7	14	1.000
	%	1.7%	1.7%	3.4%	
>60	N	12	6	18	0.157
	%	2.9%	1.4%	4.3%	
Total	N	176	239	415	
	%	42.4%	57.6%	100.0%	

Table 3. Distribution of anal fissure patients in various seasons.

Seasons	Frequency/ Percentage	Gender		Total	P value
		Male	Female		
Spring	N	19	51	70	*0.001
	%	4.6%	12.3%	16.9%	
Summer	N	15	23	38	0.194
	%	3.6%	5.5%	9.2%	
Rainy	N	32	44	76	0.169
	%	7.7%	10.6%	18.3%	
Autumn	n	25	29	54	0.586
	%	6.0%	7.0%	13.0%	
Pre winter	N	41	46	87	0.592
	%	9.9%	11.1%	21.0%	
Winter	N	44	46	90	0.883
	%	10.6%	11.1%	21.7%	
	N(Total)	176	239	415	
	%	42.4%	57.6%	100.0%	

DISCUSSION

Anal fissure is a small tear in the anoderm of the anal canal, usually at the posterior midline.^{1,2,3} The common symptoms of the fissure are anorectal pain and anorectal bleeding.^{6,7}

The etiopathogenesis of the fissure is not well known yet. However, the direct trauma of the passage of hard stool and the severe spasm of the internal sphincter that lead to ischemia to the affected area are contemplated to be causes of fissure.^{8,9} Fissure with a short period of symptoms such as anorectal pain and bleeding are considered acute fissure, while symptoms with longer duration with chronicity signs such as sentinel tag, hypertrophied base fiber and exposure of the internal sphincter and external sphincter muscle are considered to be chronic fissure.^{14,15,16}

Most surgeons and published expert opinion describe

AF as a common disease, but systematically collected data on AF are not available. In our study, AF was for 23.7% of the anorectal disorders, which is obviously high; however, this study covers only a particular region of Nepal. Evidence from several studies indicated that the burden of these diseases varied with the region.¹⁰⁻¹⁸ Since, only few studies have undertaken in Nepal regarding the prevalence of AF; it is mandatory need of more study and result from various region of Nepal to infer the concept of common diseases in general population. But the result is promising presented as one of the main achievement of this work in digging out its burden in regional society of Nepal who are suffering from.

Our analysis uncovered some important details about the variation of AF by age and gender. Women had a higher overall incidence (57.6%) among the AF patients. The prevalence of AF in female was highest in this group 20-29 with 22.4% of total.

Interestingly, prevalence in males was also the highest in the same age group. Available studies also support higher prevalence of AF in the adolescent group. Study by Giridhar et al.¹⁹ reported the highest prevalence of AF in this group 21-30 years, with male preponderance. Conceptually similar work has been carried out by another author in which the mean age of AF is 40.13 years.²⁰ The reason is not well defined. However, muscle tone in the middle age persons are comparatively a higher in tonicity which may oppose the passage of hard stool and will result in the formation of fissure.²¹

The predominance of AF in the female population in our study is not well understood, however, higher number of their visit to the hospital and low number of males in society may have manipulated outcome. Male patients are often out of the place for seeking jobs from this area. Systematic review of the available data revealed that pregnancy in the early trimester and post trimester with postpartum have a higher incidence of AF (anal Fissure) and other anorectal disorders.²² We anticipated that women of these population group would have a higher prevalence of AF, basically because women from this region have high reproductive rate.

In our study, an interesting pattern emerged when examining the result of AF distribution in various seasons. The highest number of AF was found in 21.7% and 21% of patients during winter and pre-winter simultaneously, contributing around 42.7% in total. Besides winter, AF in rainy season was found significant. Previous studies do not provide a direct evidence of support for winter and rainy seasons being a cause for AF. However, constipation and diarrheal episode may have been the main indirect factor linked. As studies showed that constipation which prevailed during winter, contributes 25% for AF;² and diarrhea episode which increased during rainy season is considered as predisposing factor for AF.²³

Our most intriguing finding in sex distribution is that AF was found significant during spring ($P < 0.05$), with female high proportion. The surge of female patients during spring with AF disorder cannot be justified; but, likely free time off from work might have a role in efflux their number in hospital. However, more detail analysis with other parameters is required to determine the effect of spring season in increasing AF in female.

Despite its success, some limitation to this study exists. This is a retrospective study, we can only speculate about disease and the reason for fluctuation in prevalence by age and sex. Information collected from outpatient department record book have deficiencies in records such as position of anal fissure, treatment given, follow up and other basic investigations, which could limit the full information to the article. However, this work is useful to give us an idea to know the burden of anal fissure among anorectal disorder complaints in this area of society and opening up its bulk in female population especially during winter season. Thus help in planning in management in outpatient department.

CONCLUSION

The result from this study supports that the prevalence of anal fissure was highest in patients with anorectal complaints, with slight female predominance. The majority was found to affect the adolescent group. The female gender should always be considered carefully not to misguide the diagnosis of anal fissure who come with anorectal complaints in the outpatient department especially during winter season.

ACKNOWLEDGMENT

I would like to extend my sincere gratitude to all the staff of surgery department for their immense support for providing information and records of the patients. Special thank to our OPD clerk Mr. Dhaniram Mahatara for the immense help in collecting data from the record book.

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