

Prevalence of Anal Fissure in Patients with Anorectal Disorders: A Single-centre Experience

RANJIT CHAUDHARY¹, CHIRAG SHANTI DAUSAGE²

ABSTRACT

Introduction: Anorectal disorders including fissure and hemorrhoids are among the most common digestive complications. To our knowledge there is no literature available on the prevalence of anal fissure from our region of study (Bhopal, Madhya Pradesh, Central India).

Aim: To estimate the prevalence of anal fissure among the patients of anorectal complaints.

Materials and Methods: This was a cross-sectional observational study conducted from January 2014 to December 2015. All the patients visiting the Department of Surgery with anorectal complaints were screened. Patients of either sex, more than 18 years of age, with complaints of anorectal pain/bleeding/discharge or prolapse of rectum were included in the study. The diagnosis of enrolled patients was based on clinical findings of anorectal evaluation by digital examination and proctoscopy.

Results: Overall, 629 patients were enrolled in the study. The mean (SD) age of patients was 38.27 (9.25) years and a total of 438 (69.63%) of patients were males. Around half of the patients (n=308; 48.97%) had normal BMI. A total of 112 (17.81%) of patients were diagnosed to have an anal fissure. Mixed dietary habits and history of constipation were found to be associated with the prevalence of fissure. Similarly, patients with no exercise or physical activity had more prevalence of fissure than patients who exercised on a regular basis (19.87% versus 11.54%). The majority of patients had bleeding and pain (n=326); out of these patients, 89 (27.30%) had an anal fissure.

Conclusion: The prevalence of anal fissure among patients with anorectal complaint was found to be around 18%. Mixed dietary habits and constipation could be considered as risk factors for the anal fissure.

Keywords: Constipation, Epidemiology, Fissure-in-ano, Risk factors

INTRODUCTION

Anorectal disorders including fissure and hemorrhoids are among the most common afflictions of this region. These disorders negatively impact the 'quality of life' of the patient and incur a massive financial burden on both the patient and the healthcare system [1]. The prevalence of anorectal disorders in general population is probably much higher than what is seen in clinical practice. Possibly (based on our clinical experience), most of the patients hesitate to seek medical care unless the symptoms become too bothersome.

Anal fissure affects both men and women and is common in all age groups especially young people [2]. Despite advancement and extensive research, the exact aetiology of anal fissures is still unknown. The possible reasons include trauma to the anus caused during defecation of hard stools. Among food habits, low fibre diet is also considered to be a contributory factor for the development of anal fissure [3-5].

Several studies conducted in India have demonstrated that the prevalence of anal fissure has a regional variation [6-9]. Hence, there is a continual need to study the pattern of anorectal disorders. The aim of the present study was to estimate the prevalence of anal fissure among patients of anorectal complaints visiting a tertiary care centre located in Bhopal, Madhya Pradesh, India.

MATERIALS AND METHODS

This was a cross-sectional observational study conducted from January 2014 to December 2015 at a tertiary care centre (People's College of Medical Science and Research Centre, Bhopal, India). Study participants were of either sex and aged more than 18 years. All the patients visiting the Department of Surgery with anorectal complaints were screened and enrolled if eligible. The eligibility

criteria included patients complaining of anorectal pain, bleeding, discharge or prolapse of rectum. The exclusion criteria were patients who underwent major anorectal surgery, patients diagnosed with rectal cancer and pregnant women.

All the patients provided written informed consent to participate in the study. Enrolled patients were examined and the diagnosis was based on clinical findings of anorectal evaluation by digital examination and proctoscopy. Data was collected in the approved case record form which included demographic details, medical history, signs/symptoms and final diagnosis.

STATISTICAL ANALYSIS

Statistical analysis was performed using SPSS software (version 17.0). The data obtained was tabulated, analysed and presented using descriptive statistics-mean (standard deviations) or as number (percentages).

RESULTS

Overall 629 patients were enrolled in the study. The mean (SD) age of enrolled patients was 38.27 (9.25) years. A total of 438 (69.63%) of patients were males and 191 (30.37%) patients were females [Table/Fig-1]. The majority (n=413; 65.66%) of patients were aged between 18 to 40 years and 33.70% of patients were between 41 to 60 years. In about half of the patients (48.97%) BMI was normal and around 45% of patients were over weight or obese. The dietary habits of majority (78.06%) of the patients were mixed and around 75% of patients had no history of exercise or any physical activity (excluding day-to-day activities). Of the total 629 patients, 12.24% patients were hypertensive and 10.33% patients had diabetes mellitus medical records [Table/Fig-1].

Parameter	Total N=629	Patients with fissure	p-value
Age (years), mean (SD)	38.27 (9.25)	-	-
Sex			
Males	438 (69.63)	85 (19.41)	<0.05
Females	191 (30.37)	27 (14.14)	
Age group (years)			
18-40	413 (65.66)	77 (18.64)	0.0914
41 to 60	212 (33.70)	35 (16.51)	
≥61	4 (0.64)	0	
BMI			
Underweight	37 (5.88)	4 (10.81)	<0.05
Normal	308 (48.97)	65 (21.10)	
Overweight/Obese	284 (45.15)	43 (15.14)	
Dietary habits			
Vegetarian	138 (21.94)	22 (15.94)	0.081
Mixed	491 (78.06)	90 (18.33)	
History of constipation			
Yes	389 (61.84)	88 (22.62)	<0.05
No	240 (38.16)	24 (10.00)	
Medical history			
Hypertension	77 (12.24)	12 (15.58)	-
Diabetes mellitus	65 (10.33)	8 (12.31)	
History of exercise or physical activity			
Yes	156 (24.80)	18 (11.54)	<0.05
No	473 (75.20)	94 (19.87)	
Data presented as n (%), unless otherwise specified.			

[Table/Fig-1]: Summary of demographics and prevalence of fissure.

The clinical examination revealed that a total of 112 (17.81%) of patients had a fissure; however, 517 (82.19%) of patients had no evidence of fissure. The prevalence of fissure was slightly higher in males than females (19.41% versus 14.14%; $p < 0.05$) and was higher in patients aged between 18 to 40 years than 41 to 60 years group (18.64% versus 16.51%; $p = 0.0914$) [Table/Fig-1]. When the prevalence of fissure was compared based on BMI; patients with normal BMI had a higher prevalence than underweight and overweight patients. Mixed dietary habits and history of constipation were found to be associated with the prevalence of fissure. Similarly, patients with no exercise or physical activity had more prevalence of fissure than patients who exercised on a regular basis (19.87% versus 11.54%; $p < 0.05$) [Table/Fig-1].

[Table/Fig-2] summarises the signs and symptoms of patients who sought consultation for anorectal complaints and prevalence of fissure. The majority of patients had bleeding and pain ($n = 326$), of which 89 (27.30%) had anal fissure. A total of 28 patients had only pain, of which 14 (50%) patients had anal fissure, and 156 patients

Author	Location	N	Patients with fissure	Age group with highest number	Males	Major symptom/sign	Position of fissure
Varadarajan MS et al., [6]	Tirunelveli (Tamil Nadu)	325	100	31-40: 42%	54%	Pain during defecation (86%) Bleeding (62%) Constipation (56%)	Posterior midline (98%)
Khan RM et al., [7]	Bangalore (Karnataka)	416	65	15-40: 64.62%	73.85%	Bleeding+pain (57%) Pain (24%)	-
Alam AA et al., [8]	Bangalore (Karnataka)	221	80	-	-	-	Posterior (85)
Varsha SB et al., [9]	Nagpur (Maharashtra)	90	90	21-30: 48.90%	1.57:1	Pain, Bleeding PR and Constipation	Posterior (96.7%)
Sharma R et al., [10]	Amritsar (Punjab)	200	22	-	-	-	-
Gupta PJ et al., [11]	Nagpur (Maharashtra)	1000	540	-	-	-	-
Current study	Bhopal (Madhya Pradesh)	629	112	18-40: 68.75%	75.89%	Bleeding+pain (79.46%) Pain (12.5%)	-

[Table/Fig-3]: Summary of previous reports [6-11].

Parameter	Total N=629	Patients with fissure
Bleeding	32 (5.09)	0
Pain	28 (4.45)	14 (50.00)
Prolapse	2 (0.32)	0
Bleeding+Anaemia	26 (4.13)	0
Bleeding+Discharge	4 (0.64)	0
Bleeding+Pain	326 (51.83)	89 (27.30)
Bleeding+Prolapse	2 (0.32)	0
Pain+Prolapse	21 (3.34)	2 (9.52)
Pain+Discharge	8 (1.27)	0
Bleeding+Pain+Prolapse	156 (24.80)	4 (2.26)
Bleeding+Pain+Anaemia	10 (1.59)	1 (10.00)
Bleeding+Pain+Discharge	6 (0.95)	2 (33.33)
Pain+Prolapse+Discharge	3 (0.48)	0
Bleeding+Pain+Prolapse+Anaemia	2 (0.32)	0
Bleeding+Pain+Prolapse+Discharge	3 (0.48)	0
Data presented as n (%).		

[Table/Fig-2]: Summary of patient symptoms.

had bleeding, pain, and prolapse, of which only 4 (2.26%) patients had anal fissure. In total, 32 patients had only bleeding and 26 had bleeding and were anaemic.

DISCUSSION

This cross-sectional observational study was conducted to evaluate the prevalence of anal fissure in patients who consulted for anorectal symptoms. Overall, the results showed that the prevalence of anal fissure in our study population was 17.81%. These results add data to the literature and contribute to study the trend of prevalence and disease symptoms in Indian patients with anorectal disorders. Our observations were consistent with previous reports [6-9].

In the present study, overall there was a predominance of male patients (69.63% versus 30.37%) and almost half of the patients were aged between 18 to 40 years. The difference could be possibly due to hesitance of female patients in seeking treatment. A total of 112 (17.81%) of patients were diagnosed to have anal fissure. Mixed dietary habits and history of constipation were found to be associated with the prevalence of fissure. Similarly, patients with no exercise or physical activity had more prevalence of fissure than patients who exercise on a regular basis (19.87% versus 11.54%). This observation corroborates the fact that diet and exercise or physical activity has significant impact on the occurrence of anal disorders. The majority of patients had bleeding and pain ($n = 326$), out of these patients 89 (27.30%) had an anal fissure. This could be possibly due to the fact that, patients tend to seek medical advice only if the symptoms are unbearable or have symptoms like bleeding etc., [Table/Fig-3] summarises previous reports from India where anal fissure was studied [6-11].

In a previous study by Varadarajan MS et al., among 325 patients from Tamil Nadu (India) with anorectal ailments, 100 patients (30.7%) had anal fissures [6]. Of these 100 patients, 54 patients were males and 46 were females, and the majority was under 40 years of age. The majority of patients presented with pain during defecation (86%) followed by bleeding (62%), constipation, pruritus, and discharge [6].

Another study by Khan RM et al., which included 416 patients with anorectal ailments, showed that 65 (15.62%) patients were found to be suffering from anal fissure, out of these 48 were males and 17 were females [7]. Khan RM et al., also reported that constipation, low-fibre diet, and less physical activities were significantly associated with anal fissures. Overall, these observations were consistent with our results, except for slight variation in the prevalence of anal fissure.

LIMITATION

The author also acknowledges following limitations of the study. This study was conducted at a single site and the findings may not be generalised. This study aimed to study the prevalence of anal fissure and did not collect information on other anorectal disorders.

CONCLUSION

The prevalence of anal fissure among patients with anorectal complaints is around 18%. Mixed dietary habits and constipation could be considered as risk factors for the anal fissure. These

results add data to the literature and contribute to study the trend of prevalence and disease symptoms in Indian patients with anorectal disorders.

REFERENCES

- [1] Yu SW, Rao SS. Anorectal physiology and pathophysiology in the elderly. *Clin Geriatr Med.* 2014;30(1):95-106.
- [2] Popat A, Pandey CP, Agarwal K, Srivastava VP, Sharma SM, Dixit A. A comparative study of role of topical diltiazem 2% organo gel and lateral internal sphincterotomy for the management of chronic fissure in ano. *Int J Contemporary Med Res.* 2016;3(5):1363-65.
- [3] Russell RCG, Norman SW, Christopher JKB. Bailey and Love's Short Practice of Surgery (25th edn) London: Arnold Publication, 2008;1251-52.
- [4] Mapel DW, Schum M, Worley AV. The epidemiology and treatment of anal fissures in a population-based cohort. *BMC Gastroenterol.* 2014;14:129.
- [5] Sagap I, Remzi FH. Controversies in the treatment of common anal problems. *World J Gastroenterol.* 2006;12(20):3146-54.
- [6] Varadarajan MS, Sony PS, Anandan H. Prevalence and clinical presentation of fissure-in-ANO in a tertiary care centre. *Int J Sci Stud.* 2018;5(12):70-72.
- [7] Khan RM, Itrat M, Ansari AH, Ahmer SM, Zulkifle. Prevalence of Fissure-In-Ano among the Patients of anorectal complaints visiting Nium hospital. *J Community Med Health Educ.* 2015;5(2):344.
- [8] Alam AA, Dandroo JN, Fatimah M, Ansari MS. Prevalence and risk factors of different ano rectal disorders among indoor patients having ano rectal complaints: An observational retrospective study. *J Biol Sci Opin.* 2018;6(1):9-12.
- [9] Varsha SB, Jagadish H. Nitroglycerine: A paradigm in treatment of chronic anal fissure. *Med J Clin Trials Case Stud.* 2017;1(1):000102.
- [10] Sharma R, Kaur A, Mittal S, Goyal R, Neki NS. Clinical study of perianal disorders and their management: A study of 200 cases. *Int J Med Health Res.* 2017;3(3):3-5.
- [11] Gupta PJ. Proctology in the family practice. *Revista Mexicana de Coloproctología.* 2004;10(3):21-31.

PARTICULARS OF CONTRIBUTORS:

1. Senior Urologist, Department of General Surgery, People's College of Medical Sciences and Research, Bhopal, Madhya Pradesh, India.
2. Senior Resident, Department of General Surgery, People's College of Medical Sciences and Research, Bhopal, Madhya Pradesh, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Chirag Shanti Dausage,
34, Naya Gaon, PO Vidyut Nagar, Rampur, Jabalpur-482008, Madhya Pradesh, India.
E-mail: chiragdausage@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Aug 30, 2018**

Date of Peer Review: **Oct 12, 2018**

Date of Acceptance: **Dec 06, 2018**

Date of Publishing: **Feb 01, 2019**