



Clinical Profile of AnoRectal Bleeding in Patients Attending a Tertiary Care Surgical Unit – A cross-sectional study from Northeast India

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ABSTRACT

Background: Anorectal bleeding is a common surgical presentation, often linked to benign conditions such as haemorrhoids and fissures, but occasionally indicative of malignancy. Regional data from Northeast India remains limited.

Objective: To evaluate the sociodemographic profile, clinical presentation, and etiological spectrum of patients presenting with anorectal bleeding at a tertiary care surgical unit.

Methods: A cross-sectional study was conducted at AGMC & GBP Hospital, Agartala, enrolling 629 consecutive patients with rectal bleeding between June 2024 and December 2025. Data on demographics, clinical features, comorbidities, digital rectal examination findings, haemoglobin levels, and complications were collected using a structured proforma and analysed descriptively.

Results: The majority of patients were aged 40–60 years (37.2%) and male (69.8%). Urban residents comprised 59.9% of the cohort. Pain (42.9%), constipation (32.8%), and rectal mass (24.3%) were the leading symptoms. Digital rectal examination revealed anal fissure (47.7%) and haemorrhoids (46.3%) as the predominant causes, while malignancy was detected in 1.9%. Anaemia was the most frequent complication (13.5%). Most patients had haemoglobin > 10 g/dl (71.4%).

Conclusion: Anorectal bleeding in this region is primarily attributable to benign anorectal disorders, though malignancy, though infrequent, remains a critical differential diagnosis. Early evaluation and lifestyle modification are essential to reduce morbidity and improve outcomes.

Keywords: Anorectal bleeding, Haemorrhoids, Anal fissure, Colorectal malignancy, Northeast India

INTRODUCTION

Anorectal bleeding, clinically referred to as haematochezia, is a common manifestation of lower gastrointestinal (GI) bleeding and accounts for nearly 20–30% of such cases worldwide.¹ It is characterised by the passage of fresh red blood per rectum, often mixed with stool or clots, and represents a frequent indication for surgical consultation in both outpatient and emergency settings.² While benign anorectal disorders such as haemorrhoids and fissures constitute the majority of cases, the symptom often provokes anxiety due to its potential association with colorectal malignancy. This duality underscores the importance of careful evaluation, timely diagnosis, and appropriate management strategies.³

In surgical practice, patients presenting with anorectal bleeding exhibit a distinct profile compared to those managed in medical gastroenterology. Structural pathologies such as prolapsing haemorrhoids, complex fistulas, and obstructive rectal masses frequently necessitate procedural intervention.⁴ The principal diagnostic challenge lies in differentiating outlet bleeding from

proximal colonic sources. Although bright red blood usually indicates a distal origin, rapid transit from proximal lesions may mimic this presentation, thereby complicating clinical assessment.¹

Epidemiological Profile

Population-based studies report prevalence rates of rectal bleeding ranging from 13% to 34%, with variations across age groups and gender.⁵ Eslick et al. observed no overall disparity between men and women, though women showed higher prevalence in the 18–39 and > 60-year age groups, while men had increased rates in the 40–49-year age group.⁶ Notably, only about 40% of individuals with rectal bleeding seek medical attention, with older patients most likely to perceive the condition as nonserious.⁷ Such delays in presentation often result in advanced disease stages, altering both the etiological spectrum and treatment outcomes.

Etiological Spectrum

Haemorrhoids remain the most frequent global cause of anorectal bleeding, typically producing painless, bright red bleeding at the

end of defecation due to venous dilation and mucosal fragility.⁸ Anal fissures, in contrast, are the leading source of painful rectal bleeding, presenting with sharp pain during defecation and streaks of fresh blood.⁹ Fistulainano, though classically associated with purulent discharge, may also bleed from granulation tissue within the tract, particularly in recurrent or complex cases.¹⁰ Rectal prolapse and solitary rectal ulcer syndrome (SRUS) contribute through mechanical trauma, with SRUS frequently misdiagnosed due to overlapping symptoms such as mucus discharge and straining.¹¹

Malignant and premalignant lesions represent a critical subset of cases. Rectal bleeding remains the cardinal warning sign of colorectal carcinoma, with its predictive value markedly enhanced when associated with altered bowel habits or unexplained weight loss.¹² Adenomatous polyps of the rectum and sigmoid colon, prone to bleeding from surface erosion, are important premalignant lesions whose timely detection and removal through polypectomy constitute a cornerstone of colorectal cancer prevention.¹³

Diagnostic Approach

The diagnostic evaluation of anorectal bleeding is guided by the principle that malignancy must be excluded before treating benign disease. Digital rectal examination (DRE) remains a valuable clinical manoeuvre, capable of detecting low rectal cancers, polyps, altered anal tone, and complex fistulas.¹² Endoscopic assessment complements clinical evaluation, with proctoscopy or anoscopy essential for visualising internal haemorrhoids and distal proctitis. Colonoscopy is increasingly favoured over sigmoidoscopy, even in younger patients, due to the rising incidence of proximal neoplasms.¹⁴

Outcomes and Management

The outcomes of anorectal bleeding depend on the underlying etiology and chosen intervention. Excisional hemorrhoidectomy remains the gold standard for advanced haemorrhoids, though it is associated with postoperative morbidity such as pain and secondary haemorrhage.¹⁵ Lateral internal sphincterotomy is highly successful for chronic fissures, though minor incontinence remains a recognised tradeoff.¹⁶ For malignant lesions, oncological resections are evaluated by margin clearance, lymph node harvest, and longterm survival. Conservative management, including dietary fibre supplementation and topical therapies, plays a central role in earlystage disease, though poor adherence to lifestyle modification remains a leading factor in recurrence.¹⁷

Regional Relevance

In NorthEast India, unique dietary practices, socioeconomic factors, and rural distribution of the population influence healthseeking behaviour and outcomes. Delayed presentation is common, and there is a paucity of published data from this region, with most Indian studies originating from metropolitan centres. Generating local epidemiological and outcome data is therefore essential for understanding the true burden of disease, facilitating early diagnosis, guiding appropriate management strategies, and improving patient counselling and prognosis. The present study aimed to evaluate the sociodemographic profile, clinical presentation, and etiological spectrum of patients presenting with anorectal bleeding at a tertiary care surgical unit.

MATERIALS AND METHODS

Study Type

This investigation was conducted as an observational study.

Study Design

A cross-sectional design was employed to capture the clinical and demographic profile of patients presenting with anorectal bleeding during the study period.

Study Setting

The study was conducted in the Department of General Surgery at AGMC & GBP Hospital, Agartala, Tripura.

Study Population

The study population comprised all patients presenting to the Department of General Surgery at AGMC & GBPH with complaints of bleeding per rectum during the defined study period.

Study Duration

The study was conducted over one and a half years, from June 2024 to December 2025.

Sampling Method

A census sampling technique was adopted. All eligible patients presenting with rectal bleeding during the study period were enrolled consecutively until the study period ended.

Sample Size

A total of 629 patients were enrolled in the study, comprising all individuals who presented with rectal bleeding to the Department of General Surgery at AGMC & GB Pant Hospital during the study period.

Inclusion Criteria

- Patients presenting with a complaint of bleeding per rectum.

Exclusion Criteria

- Patients who declined to provide consent for participation in the study.

Study Tool

Data were collected using a pretested, structured case record proforma, designed to capture demographic details, clinical presentation, and examination findings.

Methods of Data Collection

After obtaining informed consent, patients underwent a detailed clinical evaluation followed by a proctoscopic examination. Information regarding demographic characteristics, aetiology of bleeding, and digital rectal examination findings was recorded. Patients were subsequently followed up to assess outcomes.

Analysis of Data

Collected data were compiled and analysed using SPSS version 26.0. Results were expressed as frequencies and percentages. Appropriate statistical tests were applied based on the nature of the variables and the study's objectives. Tables and graphs were used to present findings clearly.

Ethical Consideration

Ethical approval was obtained from the Institutional Ethical Committee of AGMC prior to commencement of the study (Ref. No. F.4(6-13)/AGMC/Medical Education/IEC Approval/2022/5801). The purpose of the study was explained to all participants, and verbal and written informed consent was obtained. Strict measures were taken to ensure the privacy and confidentiality of patient information throughout the study.

RESULTS

A total of 629 patients were included in the study. The largest proportion was between 40 and 60 years of age (37.2%), followed closely by those aged 20 to 40 years (36.4%). Patients below 20 years accounted for 5.4% of the study population, while only a very small proportion (1.9%) were aged over 80 years (Figure 1).

Of the study population, males comprised 69.8%, while females made up 30.2%, yielding a maletofemale ratio of roughly 2.3:1 (Figure 2). The majority of participants were urban residents (59.9%), while 40.1% came from rural areas (Figure 3).

Figure 4 shows that in terms of occupation, nearly half of the participants (304; 48.3%) were engaged in active work, while 166 (26.4%) reported moderate activity. Sedentary behaviour was noted

in 159 individuals (25.3%).

Figure 5 illustrates that, regarding clinical presentation, pain was the most frequent symptom associated with bleeding per rectum (42.9%), followed by constipation (32.8%) and the presence of a rectal mass (24.3%).

Table 1 summarises the sociodemographic and clinical parameters of the 629 study participants presenting with anorectal bleeding.

Age distribution

The largest group was between 40–60 years (37.2%), followed by 20–40 years (36.4%). Younger patients (<20 years) comprised 5.4%, while only 1.9% were aged 80 years or older.

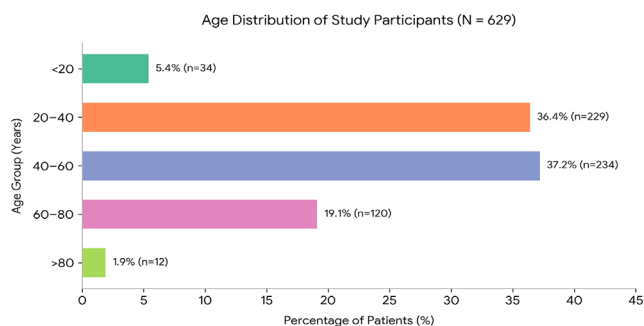


Figure 1: Age distributions of the study participants

Gender Distribution of Study Participants (N = 629)

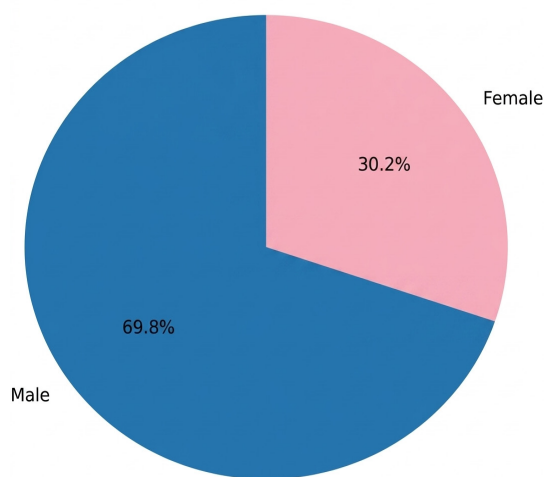


Figure 2: Gender distribution of the study participants

Place of Residence Distribution of Study Participants

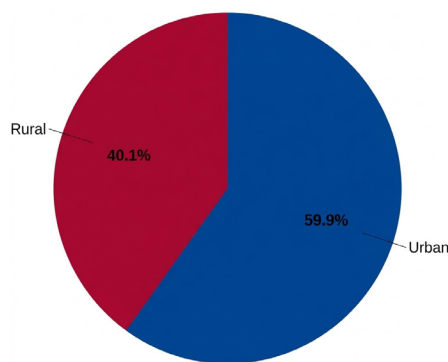


Figure 3: Place of residence distribution of study participants

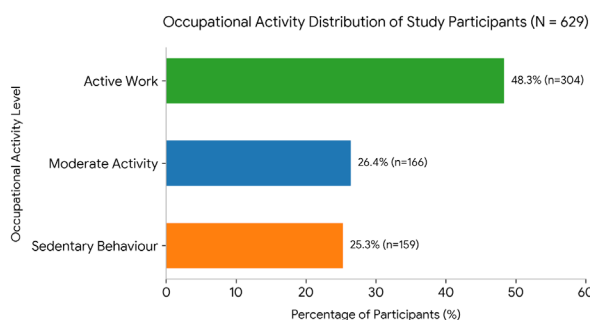


Figure 4: Occupational activity distribution of the study participants

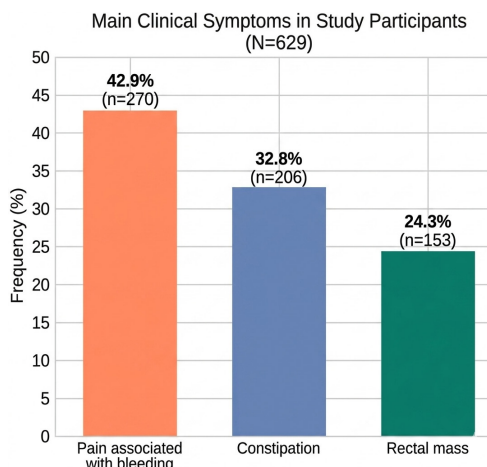


Figure 5: Main clinical symptoms in the study participants

Table 1: Socio-demographic and clinical parameters of study participants

Variables	Characteristics	n (%)
Age (Years)	<20	34 (5.4)
	20-40	229 (36.4)
	40-60	234 (37.2)
	60-80	120 (19.1)
	>80	12 (1.9)
Gender	Male	439 (69.8)
	Female	190 (30.2)
Place of residence	Rural	252 (40.1)
	Urban	377 (59.9)
Occupation	Sedentary	159 (25.3)
	Active	304 (48.3)
	Moderate	166 (26.4)
Clinical Presentation	Pain	270
	Constipation	260
	Mass Per Rectum	153
	Mucus in Stool	11
	Tenesmus	8
	Loss of Appetite	4
Co-morbidity	Nil	409 (65.0)
	HTN	172 (27.3)
	T2DM	44 (7.0)
	Heart Disease	15 (2.4)
	TB	2 (0.3)
High Risk Behaviour	Present	5 (0.7)
	Absent	624 (99.3)
Diet	Veg	71 (11.3)
	Non-Veg	558 (88.7)
Addiction	Tobacco	108 (17.2)
	Alcohol	117 (18.6)
	Both Tobacco and Alcohol	108 (17.2)
	Others	2 (0.3)
	Nil	294 (46.7)
Family history	Present	65(10.3)
	Absent	564(89.70)
Vitals	Stable	620 (98.6)
	Unstable	9 (1.4)
Pallor	Present	84 (13.3)
	Absent	545 (86.7)
Digital Rectal Examination	Anal Fissure	300 (47.7)
	Hemorrhoids	291(46.3)
	Anorectal Malignancy	12 (1.9)
	Ulcer	2 (0.3)
	Rectal Prolapse	11 (1.7)

Trauma	4 (0.6)	
Polyp	4 (0.6)	
Normal	5 (0.8)	
Hemoglobin	<7 gm/dl	36(5.7)
	7-10 gm/dl	144(22.9)
	>10 gm/dl	449(71.4)
Complication	Anaemia	85(13.5)
	Shock	11(1.8)
	NIL	533(84.7)

Gender

Males predominated (69.8%) compared to females (30.2%), giving a maletofemale ratio of approximately 2.3:1.

Residence

Most participants were urban residents (59.9%), while 40.1% came from rural areas.

Occupation

Nearly half (48.3%) were engaged in active occupations, 26.4% reported moderate activity, and 25.3% had sedentary lifestyles.

Clinical presentation

Pain was the most common symptom (42.9%), followed by constipation (32.8%) and mass per rectum (24.3%). Less frequent complaints included mucus in stool, tenesmus, and loss of appetite.

Comorbidities

A majority (65%) had no comorbidities. Hypertension (27.3%) and type 2 diabetes mellitus (7%) were the most common, with smaller proportions reporting heart disease (2.4%) and tuberculosis (0.3%).

Risk behaviours and diet

Highrisk behaviours were rare (0.7%). Most patients (88.7%) were non-vegetarians.

Addiction profile

Alcohol use (18.6%) and tobacco use (17.2%) were common, with 17.2% reporting both. Nearly half (46.7%) reported no addictions.

Family history

Only 10.3% reported a positive family history of anorectal or colorectal disease.

Vitals and pallor

The majority were clinically stable (98.6%). Pallor was present in 13.3%, indicating anaemia.

Digital rectal examination

Anal fissure (47.7%) and haemorrhoids (46.3%) were the leading findings. Malignancy was detected in 1.9%, while other conditions, such as rectal prolapse, trauma, and polyps, were less frequent.

Haemoglobin levels

Most patients had haemoglobin >10 g/dl (71.4%). Moderate anaemia (7–10 g/dl) was seen in 22.9%, and severe anaemia (<7 g/dl) in 5.7%.

Cont...

Complications

Anaemia was the most common complication (13.5%), followed by shock (1.8%). The majority (84.7%) had no complications.

DISCUSSION

This cross-sectional study evaluated the clinical profile of 629 patients presenting with anorectal bleeding at a tertiary care surgical unit in Northeast India. The findings provide important insights into demographic distribution, clinical presentation, and etiological spectrum, while also highlighting regional variations in health-seeking behaviour.

Demographic Profile

The majority of patients were middle-aged adults, with 37.2% between 40–60 years and 36.4% between 20–40 years. Only 5.4% were below 20 years, and 1.9% were above 80 years. These results are consistent with earlier reports that rectal bleeding is most common in adults, particularly in the middle decades of life when benign anorectal disorders predominate.¹⁸ Male predominance was observed (69.8%), yielding a male:female ratio of 2.3:1. Similar gender trends have been reported in population-based studies, where men in the 40–49 age group and women in younger and older age groups show higher prevalence.⁶ The majority of participants were urban residents (59.9%), which may reflect easier access to tertiary care facilities compared to rural populations.

Lifestyle and Risk Factors

Nearly half of the study population (48.3%) were engaged in active occupations, while 25.3% reported sedentary behaviour. Sedentary lifestyle and chronic straining are recognised contributors to haemorrhoids and fissures.¹⁹ Dietary habits revealed that most patients (88.7%) were non-vegetarian, a pattern often associated with low fibre intake and constipation. Addiction profiles showed alcohol use in 18.6% and tobacco use in 17.2%, with 17.2% reporting both. These behaviours are known to exacerbate mucosal fragility and impair healing, thereby increasing the risk of recurrent bleeding.¹⁷ Only 10.3% reported a positive family history, suggesting that most cases were sporadic.

Clinical Presentation

Pain was the most frequent symptom (42.9%), followed by constipation (32.8%) and mass per rectum (24.3%). Painful bleeding is typically associated with anal fissures, while painless, bright red bleeding is more characteristic of haemorrhoids.²⁰ The presence of a rectal mass in nearly one-quarter of patients underscores the importance of excluding malignancy, as rectal bleeding remains the cardinal warning sign of colorectal carcinoma.¹² Less frequent symptoms, such as mucus in the stool, tenesmus, and loss of appetite, were also observed, which may indicate underlying inflammatory or malignant pathology.

Etiological Profile of Anorectal Bleeding

Digital rectal examination revealed anal fissure (47.7%) and haemorrhoids (46.3%) as the leading causes of bleeding. Malignancy was detected in 1.9% of patients, while other conditions, such as rectal prolapse, trauma, and polyps, were less frequent. Globally,

haemorrhoids remain the most common cause of anorectal bleeding, while fissures are the predominant source of painful bleeding.²¹ The detection of malignancy, though relatively low, reinforces the principle that all rectal bleeding must be investigated thoroughly to exclude cancer.²²

Haemoglobin and Complications

Most patients had haemoglobin levels >10 g/dl (71.4%), but moderate (22.9%) and severe (5.7%) anaemia were also documented. Anaemia was the most common complication (13.5%), followed by shock (1.8%). These findings highlight the clinical burden of delayed presentation and poor adherence to lifestyle modification, which remain major contributors to morbidity.²³

CONCLUSION

This study demonstrates that anorectal bleeding in Northeast India is predominantly caused by benign conditions such as fissures and haemorrhoids, with malignancy accounting for a small but clinically significant proportion. The demographic profile highlights middle-aged males as the most affected group, and lifestyle factors such as sedentary behaviour, low fibre diet, and addictions contribute to disease burden. Anaemia emerged as the most common complication, underscoring the impact of delayed presentation. Comprehensive evaluation of all patients with rectal bleeding is essential to exclude malignancy, and emphasis on preventive strategies—including dietary modification, physical activity, and early medical consultation—can substantially reduce morbidity.

Limitations

- The study was conducted at a single tertiary care centre, which may limit generalisability to the wider population.
- As a cross-sectional design, causal relationships between lifestyle factors and anorectal bleeding could not be established.
- Endoscopic confirmation was not performed for all patients, which may have underestimated proximal colonic causes of bleeding.
- Long-term outcomes and recurrence rates were not assessed, restricting evaluation of disease progression and treatment effectiveness.

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