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Prevalence and Characteristics of Anorectal Diseases in a Tertiary Care Setting

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Abstract: ***Background: Anorectal diseases encompass a range of conditions affecting the rectum and anus ranging from benign to potentially serious pathologies. Understanding their prevalence, clinical presentation, and management is crucial for improving patient outcomes. Methods: This study investigates the prevalence, characteristics, and clinical presentations of anorectal diseases in Central India. A descriptive observational study was conducted at a tertiary care hospital involving 236 patients. Data collection included demographic details, clinical history, and diagnostic findings. Hemorrhoids (35.59%) and fissure in ano (33.05%) were most common conditions. Constipation was reported in 59.3% of participants, suggesting its role as a contributing factor. The findings underscore the need for targeted management strategies for anorectal diseases, particularly in older age groups and males. Results: The mean age of participants was 47.38 years, with the majority falling in the age group of ≥56 years (29.24%). The gender distribution was 65.68% male and 34.32% female. Hemorrhoids were the most common diagnosis (35.59%), followed by Fissure in Ano (33.05%). Nearly 60% of participants had a history of constipation. Conclusion: Hemorrhoids and fissure in Ano were the most prevalent anorectal diseases in this study with constipation being a common contributing factor.***

Keywords: Anorectal diseases, Haemorrhoids, Anal Fissure, Perianal Abscess, Constipation

1. Introduction

Human digestive system is a complex network of organs responsible for the breakdown and absorption of nutrients from the food we consume (1) . At the end of this intricate system lies the anorectal region encompassing the anus and the rectum. The rectum and anus play vital roles in the human body contributing to essential physiological functions that are critical for digestion, waste elimination, and overall health (2) . The primary function of the rectum and anus is to facilitate the elimination of waste products from the digestive process (2) . As the final parts of the gastrointestinal tract they help remove indigestible materials and waste products that the body no longer needs (2) . Efficient elimination of waste materials prevents the buildup of toxins and supports the balanced absorption of nutrients in the earlier stages of digestion (2) . The anus with its complex muscular sphincters, plays a crucial role in maintaining fecal continence (3) . The involuntary and voluntary control of the internal and external anal sphincters prevents unwanted leakage of stool between bowel movements, contributing to personal hygiene and preventing social discomfort (3) . The coordinated action of the rectum and anal sphincters ensures controlled and timely defecation.

Anorectal diseases are a group of medical conditions that affect the anus and rectum (4) . These conditions can vary widely in terms of their causes, symptoms, and severity. These conditions encompass a wide spectrum of disorders, ranging from relatively benign issues to more serious and potentially life - altering ailments (5) . Anorectal diseases encompass a multitude of conditions each with their unique characteristics and clinical presentations. Proper diagnosis and treatment of these conditions often require a thorough medical evaluation by a healthcare professional (5, 6) . The diagnosis of anorectal diseases involves a combination of clinical evaluation, medical history, physical examination and in some cases diagnostic tests (5, 6) . Proctoscopy, Flexible sigmoidoscopy, anoscopy, and colonoscopy are common procedures used to visualize the rectal and anal areas, allowing healthcare professionals to identify abnormalities such as hemorrhoids, polyps or tumors (5, 6) . The prevalence and distribution of anorectal diseases have gained significant clinical and public health importance due to their impact on patient well - being, healthcare resource utilization, and the overall burden on healthcare systems (7) . While anorectal diseases are prevalent worldwide, there is a dearth of comprehensive studies focusing on their prevalence and distribution within the specific setting of tertiary care hospitals. Understanding the patterns and characteristics of anorectal diseases in this clinical context is essential for several reasons. The study aims to evaluate the prevalence, demographic distribution, and clinical presentations of anorectal diseases in a tertiary care hospital setting to inform better management strategies. It also highlights the impact of delayed diagnosis on patient outcomes and the necessity of public health initiatives to promote early intervention and lifestyle modifications.

2. Material and Methods

Study Design: A single - center, hospital - based, descriptive, observational study.

Study Settings: Study was conducted in a tertiary care institute located in central India. **Ethical Considerations:** The study protocol was approved by the Institutional Ethics Committee. Patient privacy and confidentiality were maintained throughout the study.

Study Duration: The total duration of the study was 24 months.

Study Universe: All patients coming to the outpatient, inpatient, emergency and referred to the department of surgery.

Sample Size Calculation: All participants who fulfilled the selection criteria enrolled for this study. Thus 236 participants were included in the study.

Inclusion Criteria:
- Patient presenting with sign and symptoms pertaining/originating/localised to the anorectal region.
- Patients of all genders.
- Patient aged >= 18 years of age.
- Patients who consented to participate in the study.

Exclusion Criteria:
- Pregnant Women
- Terminally ill cancer patients
- Below 18 years of age group
- Participants refused to participate in the study.

Sampling Methodology: Non - probability, purposive, convenience sampling methodology was employed to recruit participants for the present study. Consent form were filled and the purpose of the study was explained along with benefits and risks.

Source of Data: In - person interviews and the compilation of clinical records along with laboratory and radiological findings. The data pertaining to the demographic, socioeconomic and clinical history of the participants were collected during the in - person interview. The details of the clinical examination, laboratory findings, and radiological findings were collected from the medical records of the participants.

Statistical Analysis Plan: The primary dependent variable was the clinical diagnosis received by the participants presenting with signs and symptoms localized to anorectal region. The secondary aim of the study was to describe the various clinical, demographic, and surgical variables associated with the patient diagnosed with anorectal disease. The prevalence of different anorectal diseases was calculated as a proportion of the total study population. For continuous data, the author calculated the mean, median, mode, and standard deviation. Quantitative data confirming the properties of the normal distribution are presented as means ± standard deviation. The data showing the properties of the non - normal distribution are presented as the median and the interquartile range. For discrete data, the author calculated and reported frequency, proportion, and percentage. The comparison of continuous variables was done using a student's t - test. Categorical variables were analysed using chi - square (χ^2) tests. A P - value < 0.05 was considered statistically significant.

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3. Results

A total of 236 participants were included in the study. The average age of the participants was 47.38 years, with a range from 29 to 68 years. The majority of the participants were in the age group of 56 years and above (29.24%), followed by 36 - 45 years (25.00%) and 46 - 55 years (24.58%). The 26 - 35 age group comprised 21.19% of the participants. Regarding gender distribution, 65.68% of the participants were male, while 34.32% were female. In terms of dietary habits, 57.6% of participants were non - vegetarian, and 42.4% followed a vegetarian diet. A similar past medical history of anorectal diseases was reported by 47.46% of the participants, while 52.54% had no such history. Additionally, 59.3% of the participants reported a history of constipation, whereas 40.7% did not have this condition.

Table 1: Distribution of Participants by Age (n = 236)

Age Group	Frequency	Percent
18 - 25	0	0
26 - 35	50	21.19
36 - 45	59	25
46 - 55	58	24.58
>=56	69	29.24
Mean, Range	47.38 (12.02)	29 68

Table 2: Gender

Female	81	34.32
Male	155	65.68

Table 3: Dietary Habit

Diet	Frequency	Percent
Vegetarian	100	42.4
Non - vegetarian	136	57.6

Table 4: Similar Past History

No	124	52.54
Yes	112	47.46

Table 5: H/O Constipation

Yes	140	59.3
No	96	40.7

Table 6: Duration of Symptoms

0 - 3 Months	79	33.47
4 - 6 Months	65	27.54
7 - 9 Months	48	20.34
9 - 12 Months	44	18.64

Table 7: Chief Symptoms

Diagnosis	Frequency	Percent
Painless bleeding PR only	18	7.63
Painless bleeding PR with mass coming out of anal opening	66	27.97
Painful Bleeding Per rectum	40	16.95
Painful defecation	38	16.1
Itching	30	12.71

Pain perianal region with swelling	26	11.02
Pus discharge	16	6.78
Prolapse	2	0.85

Table 8: Type of Anorectal Diseases (n = 236)

Sr No Diagnosis	Frequency	Percent
1. Hemorrhoid	84	35.59
- Grade I	18	21.43
- Grade II	25	29.76
- Grade III	19	22.62
- Grade IV	22	26.19
2. Fissure in Ano	78	33.05
3. Anterior Fissure	37	47.44
4. Posterior Fissure	41	52.56
5. Fistula in Ano	16	6.78
• Primary Fistula	7	
• Recurrence Fistula	9	56.25
6. Perianal abscess	26	11.02
7. Pruritis Ani	30	12.71
8. Partial Rectal prolapsed	2	0.85
9. Complete Thickness	0	0

The study participants presented with varying durations of symptoms. A significant proportion (33.47%) had symptoms for 0 - 3 months, while 27.54% had symptoms for 4 - 6 months. Symptoms lasting 7 - 9 months were reported by 20.34% of participants, and 18.64% had symptoms for 9 - 12 months. The most common presenting complaint was painless bleeding per rectum (PR) with a mass coming out of the anal opening, reported by 27.97% of participants. Painful bleeding per rectum was experienced by 16.95%, while 16.10% of participants complained of painful defecation. Other symptoms included itching (12.71%), pain in the perianal region with swelling (11.02%), painless bleeding PR without a mass (7.63%), pus discharge (6.78%), and prolapse (0.85%).

The most common anorectal disease diagnosed among the participants was hemorrhoids, affecting 35.59% of the study population. Among these, 26.19% had Grade IV hemorrhoids, 29.76% had Grade II, 22.62% had Grades III, and 21.43% had Grade I hemorrhoids. Fissure in Ano was the second most common condition, affecting 33.05% of the participants. Of these, 52.56% had posterior fissure, while 47.44% had an anterior fissure. Fistula in Anowas diagnosedwith 6.78% of the participants, with 43.75% presenting with a primary fistula and 56.25% with a recurrent fistula. Perianal abscess was observed in 11.02% of participants, while pruritis ani affected 12.71%. Partial rectal prolapse was seen in 0.85% of the participants, and no cases of complete thickness rectal prolapse were reported.

4. Discussion

The objective of this study was to evaluate the prevalence and clinical presentation of anorectal diseases in Central India. By analyzing data from 236 participants, this research aimed to identify common anorectal conditions and provide insights into improving patient care and management strategies in this region. Despite the prevalence of these conditions, there is limited comprehensive data on their epidemiology and management outcomes, particularly in the Central Indian population. This study addresses this gap by providing valuable epidemiological data, thereby contributing to the existing body of knowledge and informing clinical practice.

The study found that haemorrhoids were the most prevalent condition among 236 participants, with 84 diagnosed (35.59%). Haemorrhoids often present with symptoms like bleeding, pain, and prolapse, which can significantly impact a patient's quality of life. The distribution of haemorrhoid grades among the 84 participants indicated a predominance of advanced hemorrhoidal disease, with Grades III and IV accounting for 48.81% of cases. Early - stage haemorrhoids are more amenable to conservative treatments, while advanced haemorrhoids often require more invasive surgical treatments.

Fissure in Ano was the second most common condition, affecting 78 participants (33.55%). Anal fissures are characterized by severe pain during defecation and bleeding, leading to discomfort. Perianal abscesses were diagnosed in 26 participants (11.02%), and fistula in Ano was identified in 16 participants (6.78%). Pruritis ani was reported by 30 participants (12.71%), indicating the need for better diagnostic and management approaches. Rectal prolapse was diagnosed in 2 participants (0.85%), a serious condition that typically requires surgical intervention. The chief presenting symptoms provided significant insights into clinical presentations and associated anorectal conditions. Painless bleeding per rectum (PR) with a mass coming out of the anal opening was the most common symptom, closely linked to fissure in Ano. Pus discharge was most commonly associated with fistula in Ano and perianal abscess, characterized by chronic infection and abscess formation. Prolapse was the least common symptom, exclusively associated with rectal prolapse, requiring surgical intervention to prevent further complications.

This study reveals a significant male predominance in anorectal diseases, with 155 males (65.68%) and 81 females (34.32%). This gender disparity is consistent with other studies on anorectal diseases, which often report a higher incidence in males. Understanding the gender - specific prevalence and presentation of anorectal diseases can aid in developing targeted public health interventions and education campaigns to address these conditions more effectively in both men and women. Tailoring patient education and intervention strategies to address the specific needs and behaviours of each gender can improve compliance with treatment and overall outcomes. The study also reveals the demographic profile of patients with anorectal diseases, with the majority falling into the older age categories. The duration of symptoms varied, providing valuable insights into the chronicity and progression of anorectal diseases. The data suggest that many patients may delay seeking medical care for anorectal symptoms, leading to prolonged discomfort and complicated disease course. The study also highlights the need for public health initiatives aimed at educating the community about anorectal diseases, promoting healthy lifestyle practices and early detection and intervention to improve overall patient outcomes.

Gawale et al. reported that the most common anorectal diseases in their study were anal fissure (40%), hemorrhoids

(25%), and fistula in Ano (10%) (8) . In contrast, our study found that hemorrhoids were the most prevalent condition (35.59%), followed by fissure in Ano (33.05%), and fistula in Ano (6.78%). This difference could be attributed to variations in regional dietary habits, healthcare - seeking behavior, and study of population characteristics. Both studies highlight the significant burden of hemorrhoids and anal fissures, although our study indicates a higher prevalence of hemorrhoids.

Marquez et al. emphasized the impact of anal fistulas on quality of life, noting significant differences between primary and recurrent fistulas same as seen in our study (9) . The findings from both studies underscore the need for comprehensive management strategies for fittings to mitigate their impact on patients' daily lives. Kumar et al. focused on the quality of life in patients with anorectal diseases and found significant improvements post - counseling (10) . Our study identified hemorrhoids as the most common condition (35.59%), aligning with Kumar's observation of the prevalence of hemorrhoids. The improvement in quality of life reported by Kumar et al. suggests that incorporating structured educational programs in clinical practice could benefit our patient population as well.

Tournu et al. found that 85% of patients with anal symptoms did not spontaneously report them to their doctors (11) . This aligns with our finding that a significant portion of patients delayed seeking medical attention. Tournu et al. emphasized the importance of proactive questioning and anal examinations to improve diagnosis rates. Similarly, our study suggests that increased awareness and training for healthcare providers are essential for early detection and intervention and improved outcome.

Kuehn et al. reported that hemorrhoids and pruritis ani were the most common benign anal diseases (BAD), with symptoms including itching, bleeding, and pain (12) . Our study similarly found hemorrhoids to be the most prevalent condition (35.59%). Both studies underscore the need for thorough symptom assessment to predict anal lesions accurately. Our findings suggest that specific symptoms like anal bleeding and pain are crucial indicators for diagnosing hemorrhoids and fissures, aligning with Kuehn et al. 's conclusions.

Pigot et al. found that symptoms such as pain, bleeding, and pruritis were common among patients consulting for proctological complaints (13) . Our study similarly identified pus discharge, itching, and painful bleeding as prevalent symptoms. Both studies highlight the importance of addressing acute symptoms promptly to prevent chronic conditions. Pigot's findings on the correlation between symptoms and factors like stress and dietary habits also suggest potential areas for patient education and lifestyle interventions in our population.

Boreham et al. found a high prevalence of anal incontinence among women and its significant impact on quality of life (14) . Our study's focus on the prevalence of hemorrhoids and anal fissures among a predominantly male population suggests the need for further research on gender - specific differences in anorectal disease prevalence and management. Boreham's findings on the impact of symptoms on quality of life reinforce the importance of early diagnosis and intervention in our patient population.

Tade et al. reported a prevalence of anal complaints among Nigerians, with hemorrhoids and anal fissures being common (15) . Our study found similar prevalence rates for hemorrhoids and fissures, indicating consistent trends across different populations. Tade's findings on the barriers to seeking medical advice, such as fear of surgery and reliance on herbal remedies, highlight the importance of patient education and culturally sensitive healthcare interventions in our population.

Faltin et al. reported a high prevalence of anal incontinence among women attending outpatient clinics, with many not disclosing their symptoms (16) . Our study's findings on the prevalence of hemorrhoids and other anorectal conditions suggest the need for routine screening and proactive symptom inquiry, especially in female patients. Faltin's emphasis on the importance of systematic questioning by gynecologists and obstetricians aligns with our recommendations for improving communication between patients and healthcare providers.

5. Conclusion

This study reveals the high prevalence of hemorrhoids and fissures in Central India, emphasizing the need for public health initiatives and patient education to promote early diagnosis and effective management. Further research with larger sample sizes and diverse settings is recommended.

Disclaimer: None.

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