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Etiological spectrum of Anorectal Bleeding in the Kashmiri Population: A retrospective and prospective analysis of 4 years in a tertiary care center

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ABSTRACT

Background: Anorectal bleeding is a frequent clinical presentation with a wide range of underlying causes. This study aims to analyze the etiological profile of anorectal bleeding in the Kashmiri population to identify trends, risk factors, and management strategies.

Methods: A hospital-based retrospective and prospective observational study was conducted for a period of four years in Department of Gastroenterology, GMC, Srinagar,Kashmir, India. Data was collected from patients presenting with anorectal bleeding, and evaluated using clinical history, colonoscopy, and histo-pathological findings.

Results: A total of 800 patients were included, comprising 200 pediatric and 600 adult cases. Among pediatric cases most common causes of ano-rectal bleeding were recto-sigmoid polyps 80/200(40%) and anal fissures 68/200 (34%). In adults, hemorrhoids 250/600 (41.6%) and colorectal malignancies 130/600 (21.6%) were the predominant causes. Colonoscopy played a crucial role in confirming diagnosis, early detection of malignancies and better outcomes.

Conclusion: Benign conditions are the most common causes of anorectal bleeding in children, whereas colorectal malignancies are a significant concern in adults. Early diagnosis via colonoscopy is essential for better outcomes.

Keywords: *Ano-rectal bleeding, Kashmir, recto-sigmoid polyps, colorectal cancer, colonoscopy, pediatric rectal bleeding.*

1. INTRODUCTION

Ano-rectal bleeding is a common clinical complaint encountered in both outpatient and inpatient settings. It can range from minor self-limiting conditions, such as hemorrhoids, to serious pathologies like colorectal cancer. The etiology of anorectal bleeding varies significantly depending on age, dietary habits, genetic predisposition, and regional factors. Globally, colorectal cancer is a major cause of morbidity and mortality, with an increasing incidence in younger populations. Studies suggest that early screening and timely intervention can significantly improve prognosis. In contrast, benign conditions such as hemorrhoids and fissures remain the leading causes in younger age groups and are often managed conservatively. In the Kashmiri population, where dietary patterns and genetic predispositions may influence gastrointestinal diseases, understanding the etiological profile of ano-rectal bleeding is crucial for timely diagnosis and management. In pediatric patients, common causes include recto-sigmoid polyps, anal fissures, Solitary rectal ulcer syndrome (SRUS) AND infective proctitis while in adults, the condition is often attributed to hemorrhoids, colorectal malignancies, and inflammatory bowel disease [1,2]. Studies suggest that in children, benign conditions dominate, whereas in adults, the possibility of malignancy must be carefully evaluated. The role of colonoscopy in identifying the cause of ano-rectal bleeding is well-established, making it an essential diagnostic tool in clinical practice [3]. This study aims to analyze the etiological spectrum of ano-rectal bleeding in the Kashmiri population, providing insights into age-specific patterns and highlighting the importance of early detection and appropriate management strategies.

2. AIMS AND OBJECTIVES

Aim: -

To analyze the etiological profile of anorectal bleeding in the Kashmiri population.

Objectives: -

- To determine the most prevalent causes of anorectal bleeding in different age groups.
- To assess the frequency of benign versus malignant conditions.
- To evaluate the role of colonoscopy and histopathology in diagnosis.
- To compare with Global trends

3. MATERIALS AND METHODS

Study Design: A hospital-based, retrospective and prospective observational study.

Study Population: Patients presenting with ano-rectal bleeding in to Gastroenterology department, GMC, Srinagar.

Inclusion Criteria:

Patients of all age groups presenting with ano-rectal bleeding.

Those who underwent colonoscopy and/or histopathological examination.

Exclusion Criteria:

Patients with incomplete medical records.

Those with a known history of bleeding disorders.

Data Collection: Clinical history, Colonoscopic findings, histopathology, and laboratory investigations were analyzed.

**Statistical Analysis: ** Data were analyzed using SPSS software, with chi-square tests applied to compare differences. A p-value <0.05 was considered statistically significant.

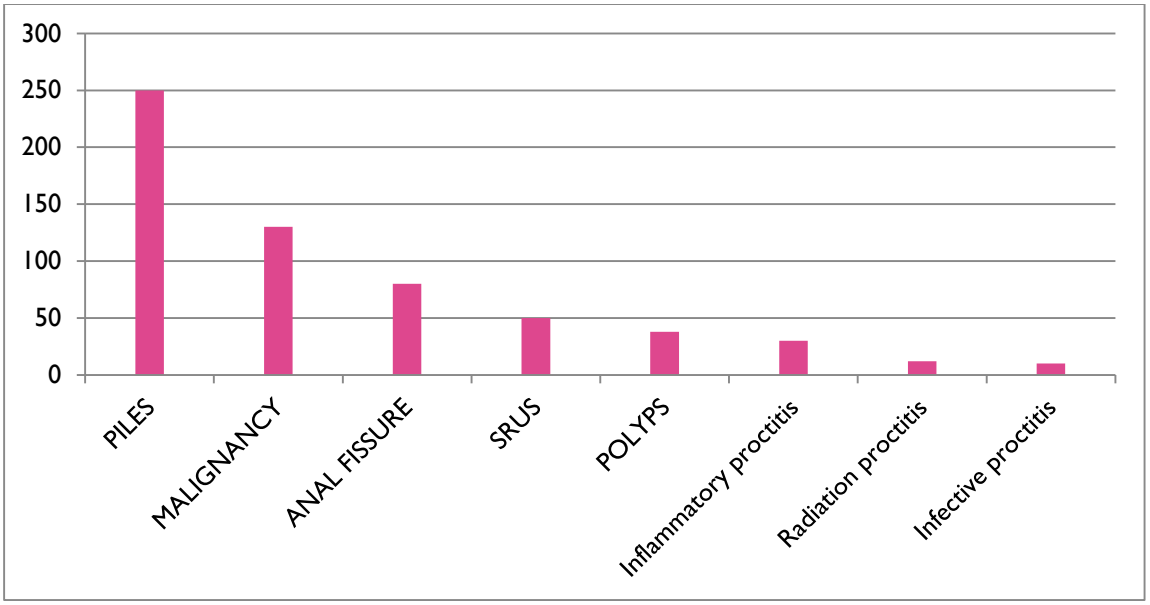
4. RESULTS

A. Etiological Distribution of Ano-rectal Bleeding Adults

In our study 600 adults presented with ano-rectal bleeding-diagnosed after thorough history and colonoscopic examination. The most common cause was Hemorrhoids followed by Colo-rectal cancer, anal fissures, SRUS and other causes of proctitis. Our study clearly showed that colorectal cancers are important and common cause of Ano-rectal bleed in Adults.

Table 1 and Graph 1: Etiology of Ano-rectal bleeding in adult (N=600)

S.NO	CAUSE	FREQUENCY	PERCENTAGE
1	Piles	250	41.66
2	Malignancy	130	21.66
3	Anal Fissure	80	13.33
4	SRUS	50	8.33
5	Polyps	38	6.33
6	Inflammatory Proctitis	30	5
7	Radiation Proctitis	12	2
8	Infective Proctitis	10	1.6



B. Etiological Distribution of Ano-rectal Bleeding Children

Among 200 Children, the most common cause was Recto-sigmoid polyps followed by anal fissure, SRUS and other cause of Proctitis. Our study emphasized that benign causes are significant in children.

Table 2: Etiology of Ano-rectal bleeding in children (N=200)

S.NO	Causes	Frequency	Percentage
1	Polyps	70	35
2	Anal fissure	68	34
3	SRUS	22	11
4	Inflammatory proctitis	10	5
5	Infectious proctitis	20	10
6	Polyp Syndrome	10	5

Graph 2: Etiology of Ano-rectal bleeding in children (N=200)

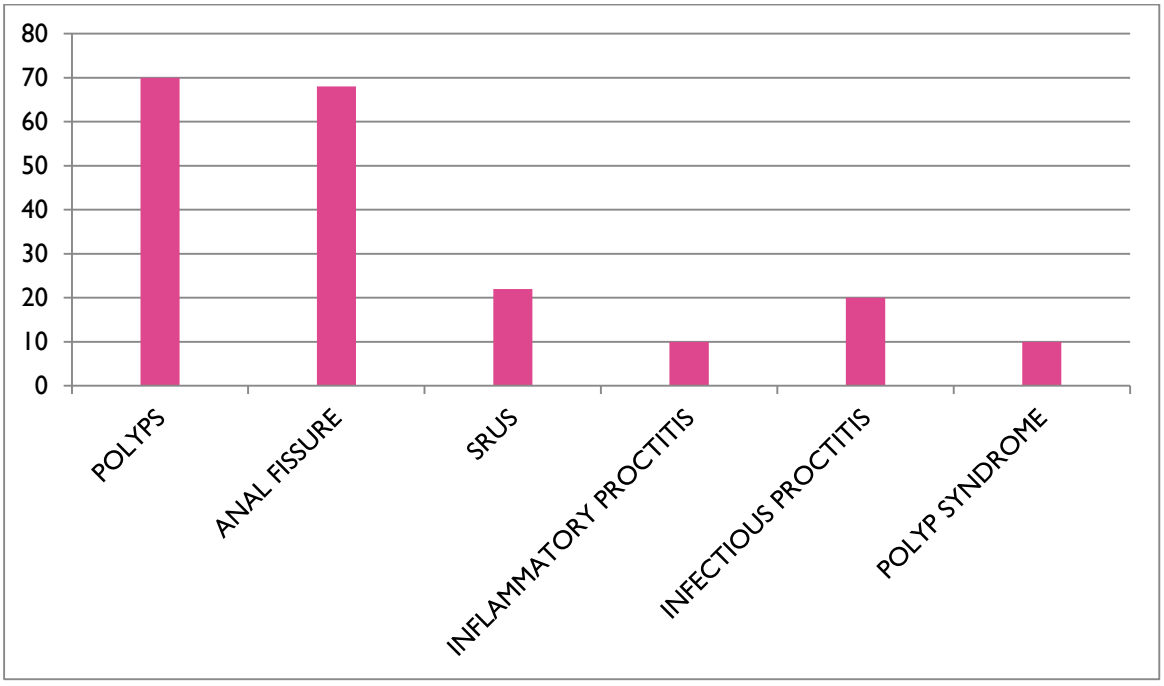


Table 3: Etiology of ano-rectal bleeding in adults versus children

Etiology	Adults (%)	Children (%)	p-value
Hemmorrhoids	41.6	0	<0.001
Anal fissure	13.33	34	0.041
Recto-sigmoid polyps	6.33	35	<0.001
Malignancy	21.66	0	<0.001

Hemorrhoids, recto-sigmoid polyps and colorectal malignancies showed the most significant differences between adults and children.

5. DISCUSSION

Our study found that rectosigmoid polyps were the most common cause of anorectal bleeding in pediatric patients, consistent with findings from previous studies (4,5,6). Among adults, hemorrhoids and colorectal malignancies were the leading causes, emphasizing the importance of early detection and intervention (7,8,9).Colorectal cancer is a growing concern worldwide, with younger individuals increasingly being diagnosed (9,10,11). Lifestyle factors, including diet, obesity, and genetic predisposition, play a key role in the rising incidence. Regular colonoscopy screening has been recommended as an effective tool in early detection and prevention (12,13,14).

Etiological Trends in Pediatric Patients

In this study, recto-sigmoid polyps (35%) emerged as the most common cause of ano-rectal bleeding in children, followed by anal fissures (34%) These findings are consistent with prior studies that report juvenile polyps as the leading cause of lower gastrointestinal bleeding in children [4]. Polyps in children are typically benign, with a low risk of malignant transformation, but colonoscopy remains essential for diagnosis and polypectomy [5]. Additionally, conditions such as infective dysentery syndrome (9.7%), SRUS (11%) were identified, indicating the role of infections and constipation related SRUS in rectal bleeding.

Etiological Trends in Adult Patients

In adults, the most common causes of ano-rectal bleeding were hemorrhoids (41.66%), colorectal cancer (21.66%), and anal fissures (13.33%). The prevalence of hemorrhoids is well-documented as a leading cause of rectal bleeding worldwide, particularly in middle-aged and older adults [15]. However, the significant proportion of colorectal cancer (21.66%) highlights the need for early screening programs in Kashmir. Studies have shown that colorectal cancer is increasingly being diagnosed in younger adults, emphasizing the importance of early colonoscopy in high-risk individuals [16]. Inflammatory bowel disease (IBD) accounted for 5% of adult cases, aligning with global data that report IBD as an emerging cause of rectal bleeding, especially in younger adults [16]. Similarly, conditions such as diverticulosis and other Causes (7%) and solitary rectal ulcer syndrome (11%) were identified, emphasizing the role of chronic inflammation and mucosal damage in ano-rectal pathology (17,18).

Benign vs. Malignant Cases and the Role of Colonoscopy

Our study found that more than 75% of adult cases were due to benign conditions, while 21.66% were attributed to malignancies. These findings are in line with previous research, which estimates that while most ano-rectal bleeding cases are benign, a significant proportion of older adults require further evaluation for malignancies [17-28] Colonoscopy remains the gold standard for diagnosing colorectal pathology, enabling early detection of malignancies and reducing mortality rates [12,13,28-30].

Comparison with Other Populations

Compared to studies from other regions, the Kashmiri population exhibits a similar distribution of benign conditions but a relatively higher proportion of colorectal cancer cases. This may be attributed to genetic predisposition, dietary habits, or delayed healthcare-seeking behavior in the region. Further epidemiological studies are needed to assess risk factors specific to this population (18-22).

Clinical Implications and Recommendations:

Early Screening for High-Risk Groups: Given the significant proportion of colorectal cancer cases, routine colonoscopic screening should be encouraged, particularly for individuals over 50 years of age or those with a family history of malignancy (29,30).

Increased Awareness in Pediatric Cases: Since recto-sigmoid polyps were the most common pediatric cause, pediatricians should have a low threshold for recommending colonoscopy in children with persistent rectal bleeding.

6. CONCLUSION

Our findings align with global data, where benign conditions dominate in younger age groups while malignancies are more prevalent in older adults. However, regional dietary habits and limited screening programs may contribute to variations in incidence.

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