

Original Research Article

An Observational Study on the Epidemiological Features of Colorectal Polyps in Patients at a Tertiary Care Hospital in Bangladesh

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Abstract: Background: Colorectal polyps are a common condition that can lead to colorectal cancer, making early detection and surveillance crucial for effective management. This study aimed to explore the epidemiological and clinical features of colorectal polyps in patients at a tertiary care hospital in Bangladesh. **Subjects and Methods:** An observational cross-sectional study was conducted at a tertiary private hospital in Dhaka, Bangladesh, between January 2023 and October 2023. A total of 30 participants were selected through purposive sampling. Inclusion criteria included patients with polyps willing to participate, and exclusion criteria involved patients with other malignancies or systemic gastrointestinal diseases. Data were collected via clinical examinations, laboratory investigations, and diagnostic imaging. Polyps were classified based on size, morphology, and number. Statistical analysis was performed using SPSS version 22, employing descriptive statistics to summarize the data. **Results:** The age distribution of participants revealed that the majority were aged 51-65 years (30.0%). Males comprised 56.67% of the sample. The most common type of polyp was adenomatous (40.0%), followed by hyperplastic and juvenile polyps (20.0% each). Inflammatory polyps were found in 13.33%, while rare types such as Puetz-Jeghers and Sessile Serrated Lesions (SSL) were present in 3.33% of cases. Regarding polyp size, 56.67% were less than 1 cm, and 70.0% of participants had a single polyp. Morphologically, 60.0% of polyps were pedunculated, followed by irregular (25.0%) and sessile (15.0%) polyps. **Conclusion:** The findings highlight the importance of regular screening, especially in older individuals, as adenomatous polyps are prevalent and have a higher risk of malignancy. This study emphasizes the need for early detection and monitoring of colorectal polyps to reduce the burden of colorectal cancer in Bangladesh. **Keywords:** Colorectal polyps, epidemiology, adenomatous polyps, early detection, Bangladesh.

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INTRODUCTION

Colorectal polyps, particularly adenomatous polyps, are common lesions in the colon and are well-established precursors to colorectal cancer (CRC), one of the leading causes of cancer-related morbidity

and mortality worldwide.[1] CRC ranks as the third most common cancer and the second leading cause of cancer-related deaths, with approximately 1.3 million new cases diagnosed annually.[2] The lifetime risk of developing CRC is estimated at 5%, placing significant strain on healthcare systems globally.[3]

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Colorectal polyps, including adenomatous, hyperplastic, and sessile serrated lesions, represent a crucial area for early detection to prevent progression to CRC. Among these, adenomatous polyps are recognized as primary precursors to colorectal cancer. [1]

The progression from adenomatous polyp to colorectal cancer is well-documented, forming the basis for screening strategies aimed at early detection, typically through colonoscopy.[4] Studies suggest that approximately 85-90% of sporadic colorectal cancers arise from adenomas, while 20-30% of CRC cases may originate from sessile serrated polyps.[5,6] Early identification and removal of these polyps can significantly reduce the risk of CRC. The prevalence of colorectal polyps varies globally, with reports of 10% in sigmoidoscopy studies and over 25% in colonoscopy studies among asymptomatic patients.

In Bangladesh, colorectal cancer is becoming an increasingly significant cause of morbidity and mortality, exacerbated by late-stage diagnoses due to a lack of systematic screening programs and limited awareness.[9] Despite the growing concern, there is a lack of comprehensive studies investigating the epidemiology and clinical characteristics of colorectal polyps in Bangladeshi patients. Most available data are based on studies from neighboring countries, which fail to account for the unique genetic, environmental, and socio-economic factors influencing the development of colorectal lesions in Bangladesh. [10,11]

This observational study aims to bridge this gap by exploring the epidemiological and clinical features of colorectal polyps in patients at a tertiary care hospital in Bangladesh. By examining the prevalence, distribution, and risk factors associated with different types of polyps, this study seeks to provide critical insights into the burden of colorectal lesions in Bangladesh and contribute to the development of strategies for early detection, prevention, and improved management of colorectal cancer.

SUBJECTS AND METHODS

Study Design: This observational cross-sectional study was conducted over a six-month period, from January 2023 to October 2023.

Place of Study: The research was conducted at a tertiary-level private hospital in Dhaka, Bangladesh.

Study Population and Sampling Technique

The study population consisted of 30 patients, selected based on predefined inclusion and exclusion criteria. Purposive sampling was used to select participants. Inclusion criteria included

patients presenting with polyps who were willing to participate in the study. Exclusion criteria included patients with other types of malignancies or systemic diseases affecting the gastrointestinal tract.

Study Procedure

Data collection was conducted through clinical examinations and laboratory investigations. All participants underwent a detailed medical history review, clinical examination, and relevant diagnostic tests, including imaging studies where necessary. Polyps were categorized based on their size and morphology, which included types such as pedunculated, irregular, and sessile.

Statistical Analysis

Data were analyzed using SPSS version 22 (SPSS Inc., Chicago, IL, USA). Descriptive statistics, including frequency and percentage for categorical variables, were used to summarize the data. Results were presented in tabular and graphical formats for clarity.

Ethical Considerations

The study was approved by the Institutional Review Board (IRB). Informed consent was obtained from all participants, ensuring they understood the purpose, procedures, risks, and benefits of the study. Participants were informed of their right to withdraw from the study at any time without affecting their treatment.

RESULTS

Table 1 illustrates the demographic characteristics of the 30 study participants. Most participants were aged 51-65 years (30.0%), followed by 36-50 years (23.33%). Younger participants aged 4-20 years made up 20.0%, while those 21-35 years and over 65 years each constituted 13.33%. In terms of sex, males comprised 56.67% and females 43.33%. Regarding education, 33.33% completed primary education, 20.0% attended secondary school, and 10.0% held a college or university degree; 36.67% had no formal education. Socioeconomically, 50.0% came from a low background, 36.67% were middle income, and 13.33% belonged to a high socioeconomic level.

Table 1: Demographic Characteristics of Study Participants: Age, Sex, Education, and Socioeconomic Status (N=30)

Age (years)	n	%
4-20	6	20.0
21-35	4	13.33
36-50	7	23.33
51-65	9	30.0
>65	4	13.33
Sex		
Male	17	56.67
female	13	43.33
Education		
Primary school	10	33.33
High school	6	20.0
College/University	3	10.0
No formal education	11	36.67
Socioeconomic level		
Low	15	50.0
Medium	11	36.67
High	4	13.33

Table 2 indicates that adenomatous polyps were the most prevalent, accounting for 40.0% of the cases. Hyperplastic and juvenile polyps followed, each representing 20.0%. Inflammatory polyps were noted in 13.33% of participants. Less common variants, including Peutz-Jeghers polyps and Sessile Serrated Lesions (SSL), were identified in 3.33% of participants. This distribution underscores the dominance of adenomatous polyps, with hyperplastic and juvenile polyps also holding significance within the study group.

Table 2: Distribution of Polyps Types (N=30)

Polyps Type	n	Percentage (%)
Adenomatous	12	40.0%
Hyperplastic	6	20.0%
Juvenile	6	20.0%
Inflammatory	4	13.33%
Puetz-Jeghers	1	3.33%
Sessile Serrated Lesions (SSL)	1	3.33%

Table 3 illustrates that the majority of polyps measured less than 1 cm, comprising 56.67% of the cases, whereas 43.33% were equal to or greater than 1 cm. Regarding polyp count, 70.0% of participants presented with a single polyp, while 30.0% exhibited multiple polyps. These findings underscore the predominance of smaller and singular polyps within the study population.

Table 3: Distribution of Polyps by Size and Number (N=30)

Criteria	n	%
Size (in cm)		
<1	17	56.67%
≥1	13	43.33%
Number		
Single	21	70.0%
Multiple	9	30.0%

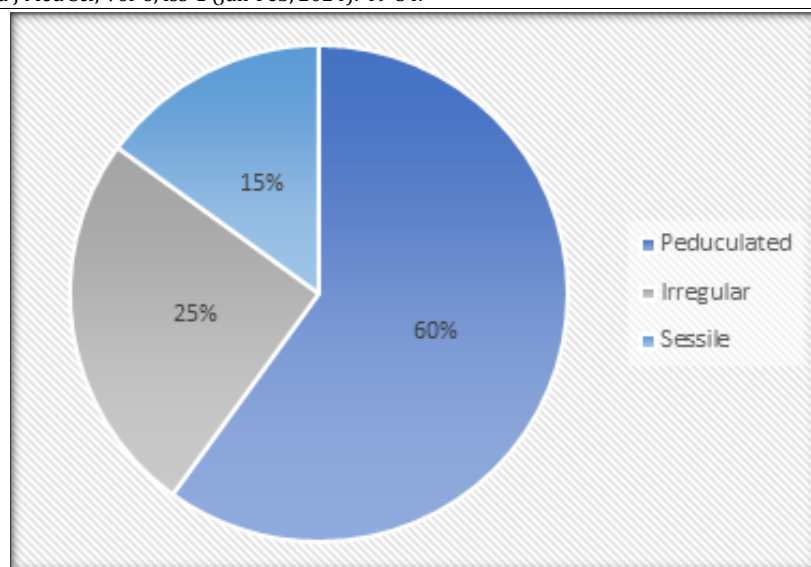


Figure 1: Distribution of Polyps Types by Morphology (N=30)

Figure 1 illustrates the morphological distribution of polyps among thirty participants. The predominant type of polyp identified was the pedunculated variety, which accounted for eighteen cases (60.00% of the sample). Irregular polyps were classified as the second most prevalent, constituting eight cases (25.00%), while sessile polyps were observed as the least frequent, encompassing five cases (15.00%).

DISCUSSION

This observational study aimed to investigate the epidemiological and clinical features of colorectal polyps in a cohort of patients at a tertiary care hospital in Bangladesh. A total of 30 participants were included, and the findings provide insight into the distribution of polyps by age, sex, type, size, number, and morphology, as well as the prevalence of associated diseases. The results align with existing literature on the subject, offering valuable information on the characteristics of colorectal polyps in this population.

The majority of participants in this study were in the 51-65 years age group, accounting for 32.4% of the sample, followed by the 36-50 years group (22.5%). The 4-20 years and 21-35 years groups made up 18.3% and 14.1%, respectively, while the smallest proportion was those aged over 65 years, comprising 12.7%. These results are consistent with several studies, including those by Ferlitsch *et al.* (2011), which reported an increase in the prevalence of colorectal polyps with advancing age, particularly among individuals aged 50 years and older. [11] Our study further supports the findings that the middle-aged and elderly populations are at higher risk for polyp development, underscoring the importance of

regular screening in these age groups. In terms of sex distribution, 58.33% of the participants were male, while 41.67% were female, showing a slightly higher prevalence in males. This finding is in agreement with Giacosa *et al.* (2004), who reported a higher incidence of colorectal polyps in men.[7] However, studies such as those by Ferlitsch *et al.* (2011) suggest that the gender distribution of colorectal polyps may vary depending on the type of polyp and other risk factors.[11]

The most common type of polyp observed in our study was adenomatous polyps, which comprised 43.33% of the cases. This finding is consistent with global studies such as those by Kumar *et al.* (2021) and Giacosa *et al.* (2004), which report adenomatous polyps as the most prevalent type among colorectal polyps.[12,7] Adenomatous polyps are considered precursors to colorectal cancer (CRC), and their frequent presence in our study highlights the potential risk for malignant transformation if left undiagnosed and untreated.[4] (Adelstein *et al.*, 2011)

Hyperplastic polyps were the second most common, representing 21.67% of the sample. Although generally considered benign, hyperplastic polyps are sometimes associated with an increased risk of colorectal cancer, particularly in individuals with multiple or larger polyps.[13] Juvenile polyps, which accounted for 18.33% of the cases, were relatively common in our study. The higher frequency of juvenile polyps may suggest a genetic or familial predisposition, as reported by Williet *et al.* (2017).[14]

The less frequent types of polyps observed

were inflammatory polyps (11.67%) and rare types such as Puetz-Jeghers polyps (1.67%) and Sessile Serrated Lesions (SSL) (3.33%). These findings align with previous reports by Noshio *et al.* (2008) and Cooper (2015), who noted the relative rarity of these polyps compared to adenomatous and hyperplastic polyps.[9,6] The presence of these rare polyps in our study underscores the diverse range of colorectal polyps and the necessity of comprehensive clinical evaluations in patients with gastrointestinal symptoms.

The majority of polyps (55.0%) were smaller than 1 cm, while 45.0% of the polyps were 1 cm or larger. This finding is in line with Giacosa *et al.* (2004), who reported that smaller polyps are more commonly detected in routine screenings, as they are more visible during colonoscopy.[7] In terms of the number of polyps, 70.0% of participants had a single polyp, while 30.0% had multiple polyps. This is consistent with studies by Parkin *et al.* (2005), which found that single polyps are more commonly detected than multiple polyps.[15] However, the presence of multiple polyps increases the risk of malignancy, as seen in studies by Martinez *et al.* (2009).[16]

The majority of polyps in our study were pedunculated, representing 60.00% of the cases, followed by irregular polyps (25.00%) and sessile polyps (15.00%). This is consistent with findings from Kumar *et al.* (2021) and Ferlitsch *et al.* (2011), who reported that pedunculated polyps are more commonly detected compared to sessile polyps due to their easier removal and lower likelihood of malignancy.[12,8] Sessile polyps, although less frequent, pose a greater risk for colorectal cancer and require closer surveillance.[9]

This study provides valuable insights into the clinical and epidemiological features of colorectal polyps in a Bangladeshi population. The predominance of adenomatous polyps highlights the importance of early detection and monitoring, as these polyps are known precursors to colorectal cancer. The findings also suggest that age, sex, and the presence of certain diseases, such as inflammatory bowel diseases and PJS, are significant factors in polyp development. Our results emphasize the need for regular screening, particularly in older individuals and those with a history of gastrointestinal diseases.

CONCLUSION

This observational study offers insights into colorectal polyps at a Bangladesh tertiary care hospital. It finds adenomatous polyps as the most prevalent type, especially smaller, single ones. The

study stresses the importance of early detection and regular screening for older adults and those with gastrointestinal disease history. Given the risk of adenomatous polyps progressing to colorectal cancer, the results underscore the need for targeted screening strategies and thorough clinical monitoring to mitigate malignancy risks in this population.

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