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CaseSeries

Colorectal Adenomas: A Case Series at a Tertiary Care Centre

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ABSTRACT

Background: Colorectal adenomas are benign epithelial neoplasms with well-recognized malignant potential, representing key precursors in the adenoma–carcinoma sequence. Early histopathological identification and risk stratification are essential for timely intervention and cancer prevention.
Objective: To describe the demographic distribution and histopathological characteristics of colorectal adenomas diagnosed in biopsy specimens at a tertiary care centre in eastern India.
Methods: This prospective case series included ten patients who underwent colonoscopic or sigmoidoscopic biopsies for suspected colorectal neoplasms at the Department of Pathology, ICare Institute of Medical Sciences & Research, Haldia, West Bengal. Clinical data such as age, sex, symptoms, and biopsy site were recorded. Histopathological evaluation followed standard H&E staining and WHO classification criteria for colorectal tumors.
Results: The patients ranged from 57 to 75 years (mean: 66 years), with a slight female predominance (60%). The most common presenting symptoms were fecal occult blood positivity (40%) and rectal bleeding (30%). The rectum was the predominant site (70%), followed by the transverse and sigmoid colon. Histologically, six cases were tubular adenomas, two were villous adenomas, and two were tubulovillous adenomas. High-grade dysplasia was observed in five cases—two tubular, two villous, and one tubulovillous adenoma. Lesions were predominantly sessile and measured between 0.1 and 0.6 cm.
Conclusion: This series underscores the predominance of tubular adenomas and highlights the significant proportion exhibiting high-grade dysplasia, emphasizing the importance of routine colorectal screening, precise histopathological diagnosis, and tailored surveillance to prevent malignant transformation.

Keywords:Colorectal adenoma, Tubular adenoma, Villous adenoma, Dysplasia, Colonoscopy, Histopathology

INTRODUCTION:

Colorectal neoplasms encompass a spectrum of lesions ranging from benign polyps to malignant tumors. Early detection and accurate histopathological diagnosis of these lesions are crucial for timely intervention and improved patient outcomes. In this case series, we present a detailed analysis of colorectal adenomas identified in colorectal biopsy specimens, shedding light on their clinical characteristics and histopathological features.

Adenoma is a defined, benign epithelial tumor that has the potential to become malignant. Numerous studies have identified links between adenoma risk and variables such as age, gender, smoking, family history, and other factors. The occurrence of adenomas escalates with age, reaching a 50% incidence among individuals aged 60 to 80 years. [1,2] These growths are frequently located in the ascending colon, transverse colon, sigmoid colon, and rectum.

Adenomas are classified into three primary types: conventional, flat, or serrated, with conventional adenomas being the most prevalent based on their growth patterns. Grossly, adenomas manifest in one of three major growth forms: pedunculated, sessile, or flat/depressed.[3]
Typically, adenomas are smaller than 1 cm and present as sessile polyps.

Adenomatous polyps are divided into three subtypes according to their epithelial structure:

1. Tubular adenomas: composed of tubular glands, these structures generally have a flat appearance.
2. Villous adenomas: characterized by villous projections, which are finger-like and contain small quantities of lamina propria.
3. Tubulovillous adenoma: a combination of the above two types.

Objective:
To characterize the demographic and histopathological profiles of colorectal adenomas in colorectal biopsy specimens of the patients.

Methodology:
This prospective case series was conducted in the Department of Pathology at ICare Institute of Medical Sciences & Research, Haldia, West Bengal.

Ethical Considerations:
The study was conducted in accordance with the principles outlined in the Declaration of Helsinki, and applicable national and institutional guidelines. Patient confidentiality was strictly maintained, and data were anonymized to protect privacy.

Patient Selection: The study included patients who underwent colorectal biopsy procedures for suspected neoplastic lesions during the study period. Biopsy specimens were obtained from patients presenting to the Surgery department with symptoms suggestive of colorectal pathology, such as rectal bleeding, pain abdomen, change in bowel habits, or fecal occult blood test.

Data Collection: Clinical data, including age, gender, presenting symptoms, and relevant medical history, were obtained. Details of the biopsy procedure, including the site of biopsy and indication for the procedure, were also documented.

Histopathological Evaluation: All biopsy specimens were processed and evaluated by experienced pathologists in the Department of Pathology at ICare Institute of Medical Sciences & Research. Standard histopathological techniques, including tissue fixation, processing, embedding, sectioning, and staining with hematoxylin and eosin (H&E), were employed.

Histopathological assessment was conducted based on well-defined diagnostic guidelines for colorectal tumours, which incorporate the World Health Organization (WHO) classification system.

Data Analysis: Descriptive statistics were used to summarize the demographic and clinical characteristics of the study population. The distribution of adenomas across different segments of the colorectal tract was analyzed, and the histopathological subtypes and presence of high-grade dysplasia were documented.
Here we report a case series of ten cases of colorectal adenomas diagnosed in our institute.

Results:
Case 1:

- **Patient Demographics:** A 65-year-old female.
- **Procedure:**Colonoscopic biopsy of polyps in the sigmoid colon and rectum.
- **Histopathological Diagnosis:** Tubular adenoma

Case 2:

- **Patient Demographics:** A 65-year-old female.
- **Procedure:**Colonoscopic biopsy of polyps in the transverse colon.
- **Histopathological Diagnosis:** Tubular adenoma

Case 3:

- **Patient Demographics:** A 75-year-old male.
- **Procedure:**Colonoscopic biopsy of an ulceroproliferative growth in the upper rectum.
- **Histopathological Diagnosis:** Tubular adenoma with high-grade dysplasia.

Case 4:

- **Patient Demographics:** A 59-years-old female.
- **Procedure:**Colonoscopic biopsy of rectal growth.
- **Histopathological Diagnosis:**Tubulovillous adenoma with high-grade dysplasia

Case 5:

- **Patient Demographics:** A 63-year-old female.
- **Procedure:**Colonoscopic biopsy of a rectal polyp.
- **Histopathological Diagnosis:** Tubular adenoma.

Case 6:
- **Patient Demographics:** A 57-year-old male.
- **Procedure:**Sigmoidoscopy biopsy of a rectal growth.
- **Histopathological Diagnosis:**Tubulovillous adenoma

Case 7:
- **Patient Demographics:** A 62-year-old female.
- **Procedure:**Colonoscopic biopsy of polyps in the transverse colon.
- **Histopathological Diagnosis:** Tubular adenoma.

Case 8:
- **Patient Demographics:** A 58-year-old male.
- **Procedure:**Colonoscopic biopsy of a growth in the lower rectum.
- **Histopathological Diagnosis:** Villous adenoma with mild dysplastic change.

Case 9:
- **Patient Demographics:** A 62-year-old male.
- **Procedure:**Colonoscopic biopsy of a small polypoidal growth in the hepatic flexure.
- **Histopathological Diagnosis:** Tubular adenoma with high-grade dysplasia

Case 10:
- **Patient Demographics:** A 64-year-old female.
- **Procedure:**Colonoscopic biopsy of an ulceroproliferative growth in the recto-sigmoid junction.
- **Histopathological Diagnosis:** Villous adenoma with high-grade dysplasia.

Histologically, tubular adenomas showed tubular architecture with back-to-back gland arrangement having stratification of lining epithelium with hyperchromatic nuclei. The villous adenomas showed glands arranged in villous pattern. Tubulovillous adenoma showed glands arranged in tubular as well as finger-like projections formed by fibrovascular cores.

The high grade(severe) dysplastic changes include crowding of glands, nuclear stratification, elongated hyperchromatic nuclei, vesicular chromatin, high N:C ratio, prominent nucleoli and brisk mitosis. However, in mild dysplasia, nucleoli are inconspicuous and mitosis is variable.

These individual case results highlight the diversity of adenomas encountered in colorectal biopsy specimens, encompassing various histopathological subtypes and presenting at different sites within the colorectal tract.
Additionally, the presence of high-grade dysplasia in multiple cases underscores the importance of accurate diagnosis and appropriate management strategies for these lesions.

The study group was between 57 years and 75 years, with a mean age of 66 years.

Table 1: Age/Gender Distribution

Case Number	Age (in years)	Gender
1	65	Female
2	65	Female
3	75	Male
4	59	Female
5	63	Female
6	57	Male
7	62	Female
8	58	Male
9	62	Male
10	64	Female

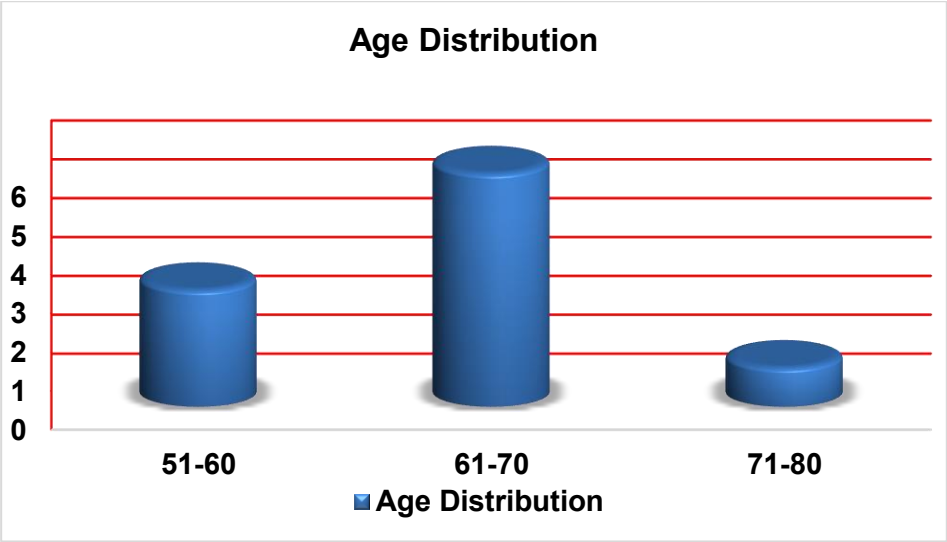


Figure 1: Age distribution

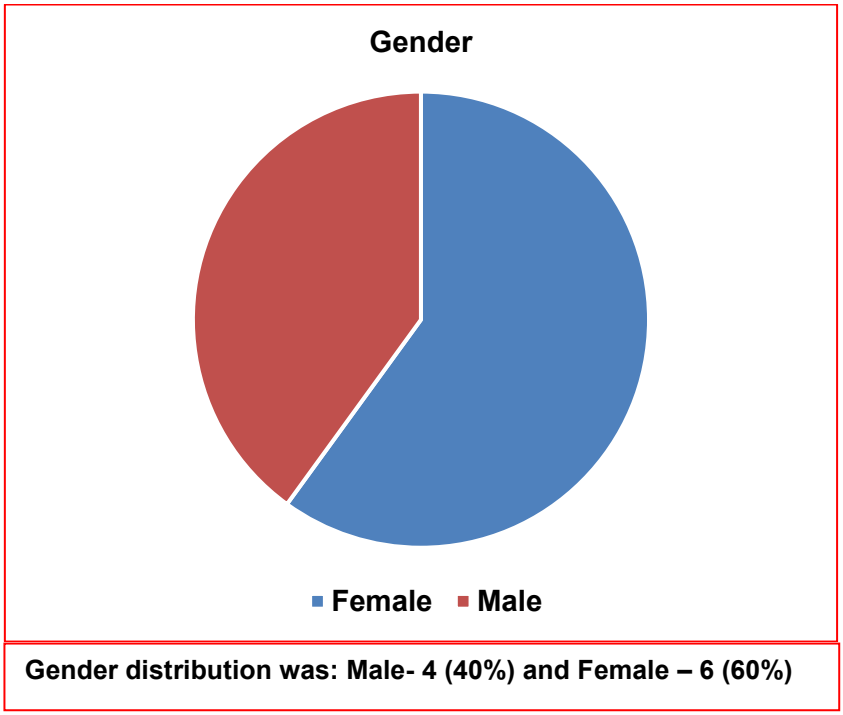


Figure 2: Gender distribution

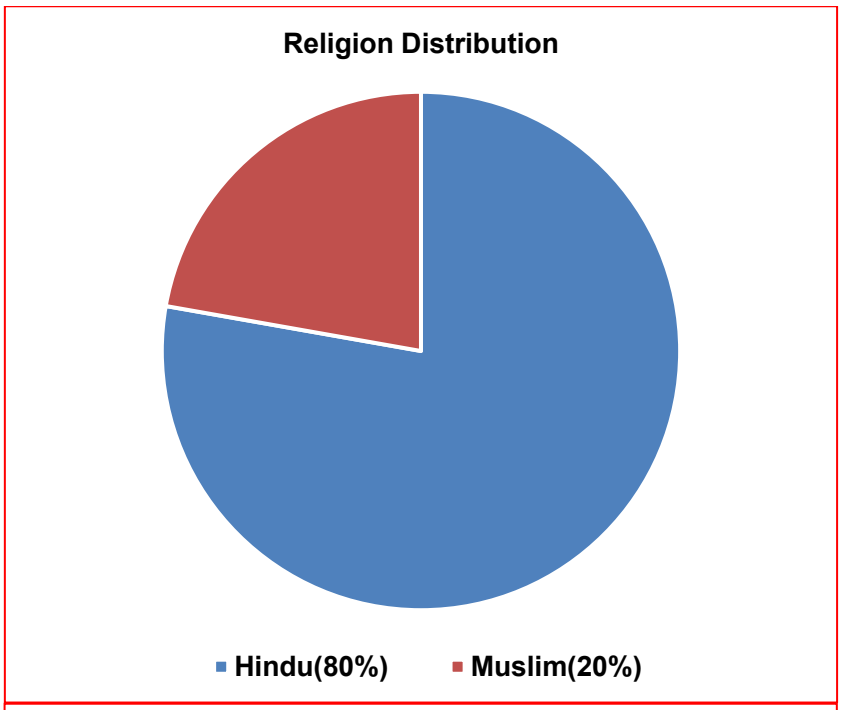


Figure 3: Religion distribution

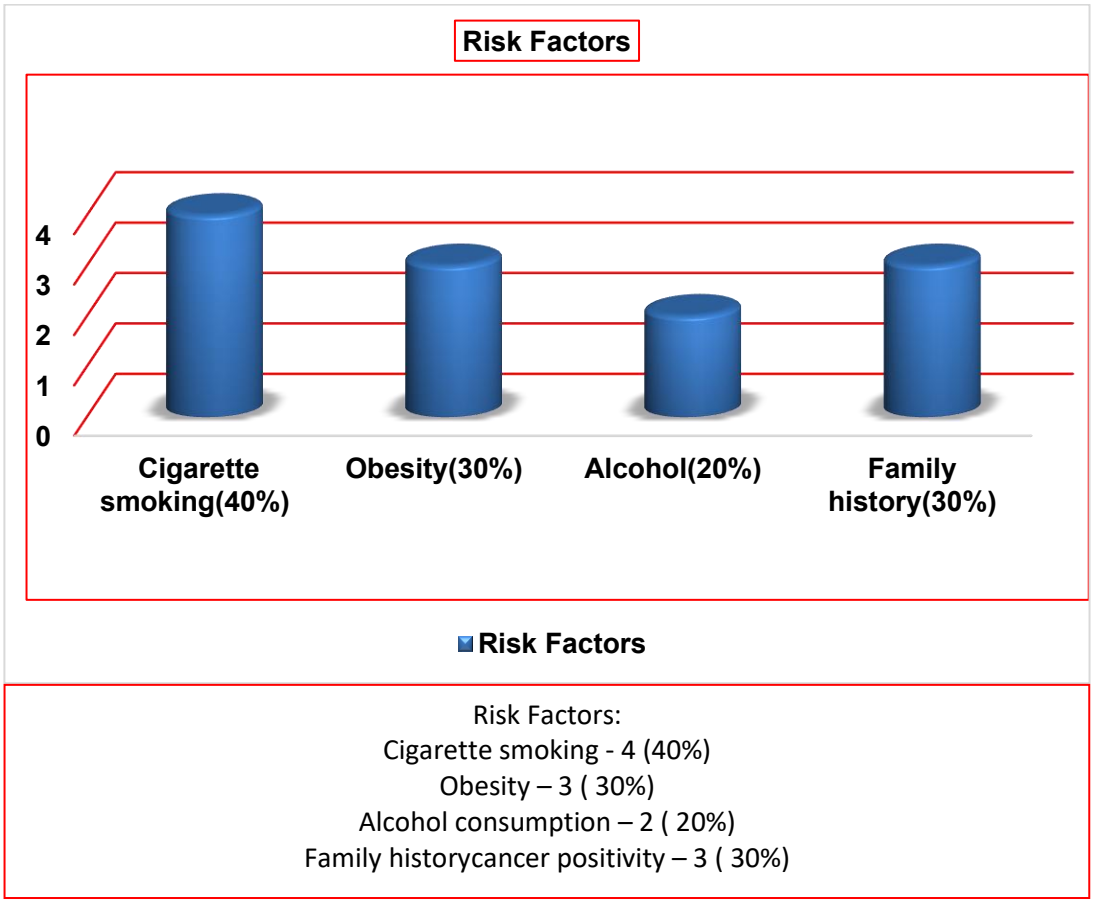
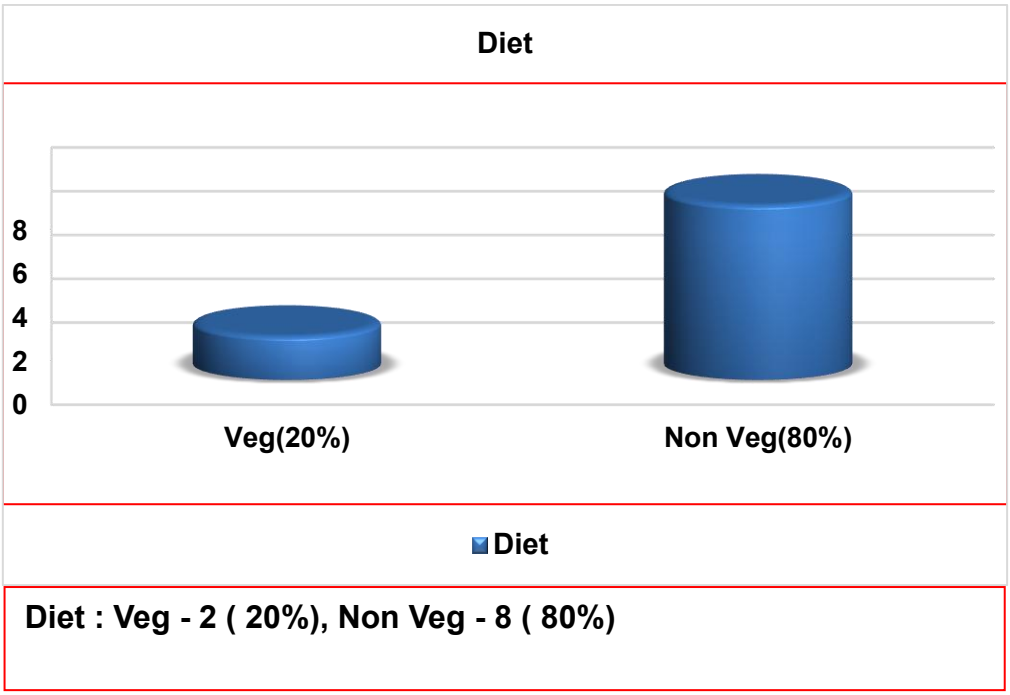
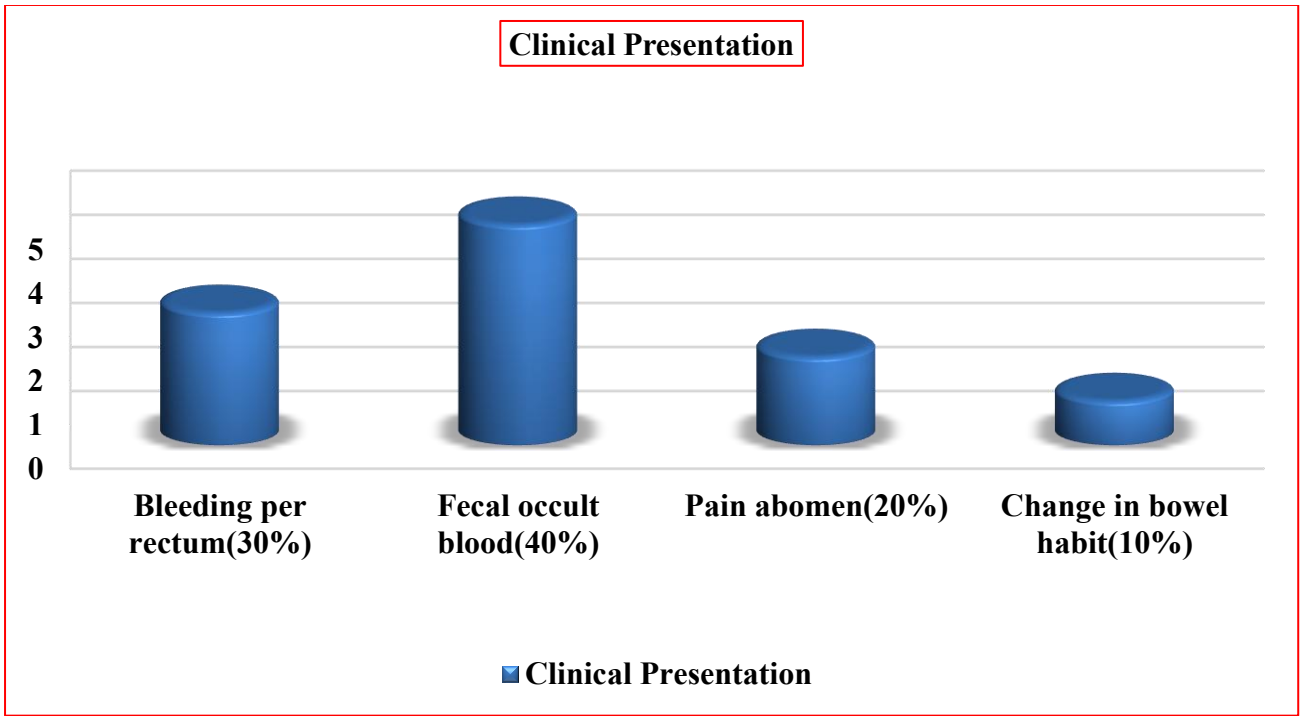


Figure 4: Risk Factors



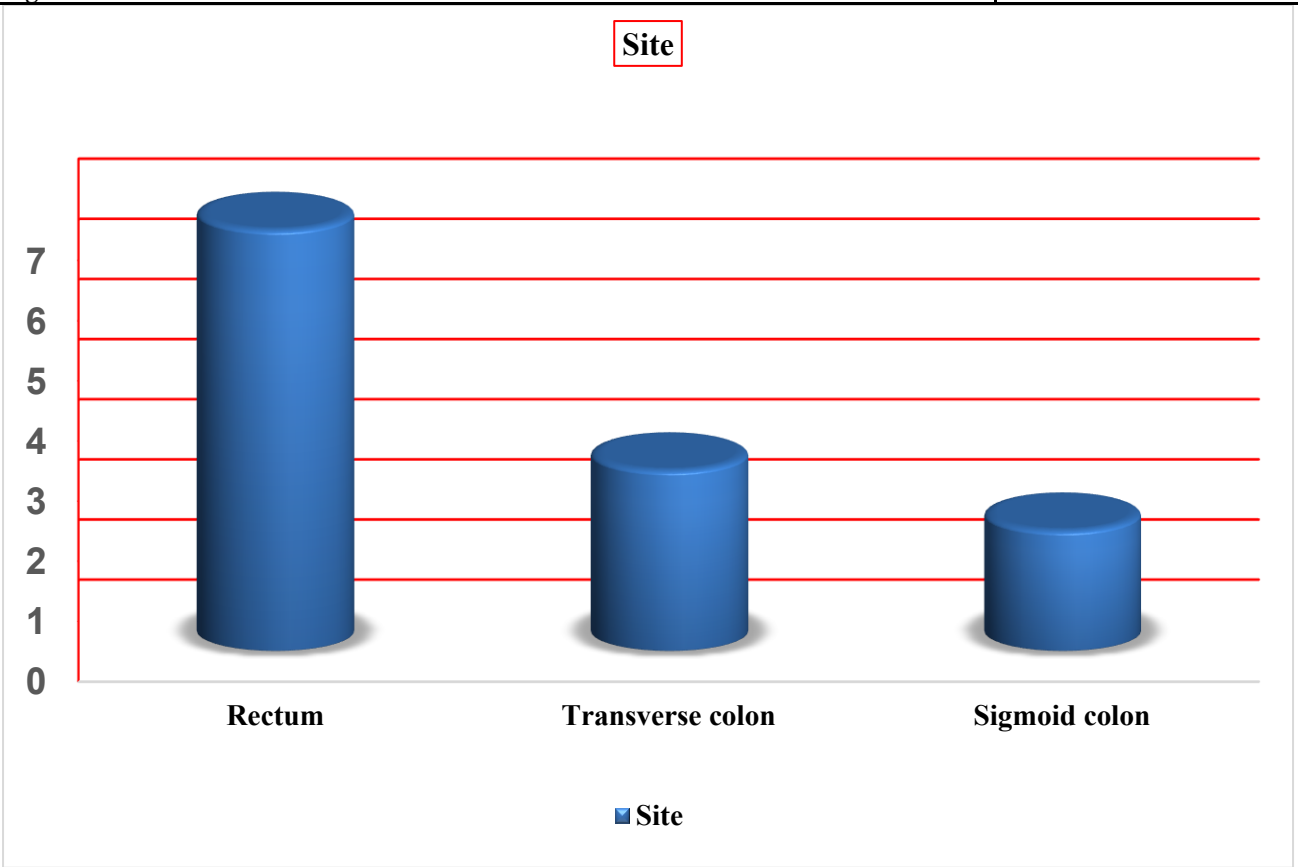
Diet : Veg - 2 (20%), Non Veg - 8 (80%)

Clinical Presentation: Bleeding per rectum	**3 (30%)**
Fecal occult blood	**5 (40%)**
Pain abdomen	**2 (20%)**
Change in bowel habit	**1 (10%)**



Site:

Rectum	**7**
Transverse colon	**3**
Sigmoid colon	**2**



These individual case results highlight the diversity of colorectal adenomas encountered in colorectal biopsy specimens, encompassing various histopathological subtypes and presenting at different sites within the colorectal tract. Additionally, the presence of high-grade dysplasia in multiple cases underscores the importance of accurate diagnosis and appropriate management strategies for these lesions.

Discussion:

The findings of this case series shed light on the spectrum of colorectal adenomas encountered in colorectal biopsy specimens and provide valuable insights into their clinical and histopathological characteristics. The discussion will focus on the implications of these findings for clinical management and the relevance of surveillance strategies in patients with colorectal adenomas.

Histopathological Diversity: The histopathological analysis revealed a variety of adenomas, including tubular adenomas, tubulovillous adenomas, and villous adenomas, consistent with previous literature on colorectal neoplasms [5].In this study, we have got 6 cases of tubular adenoma, two cases of villous adenoma and two cases of tubulovillous adenoma. The predominance of tubular adenomas in our series aligns with their well-established status as the most common subtype of colorectal polyps [6].

The size of the six tubular adenomas ranged between 0.1 cm to 0.4 cm, that of the two villous adenomas ranged between 0.2 cm and 0.6 cm and that of tubulovillous ones ranged between 0.2 cm and 0.5 cm.All the adenomas were sessile.

High-Grade Dysplasia: Notably, a subset of cases exhibited high-grade dysplasia, indicating an increased risk of malignant transformation [7]. The dysplastic changes includecrowding of glands, nuclear stratification, elongationof hyperchromatic nuclei, high N:C ratio, prominent nucleoli. Two cases of tubular adenoma and two cases of villous adenoma showed high-grade dysplasia while one case of tubulovillous adenoma had mild dysplastic change.The presence of high-grade dysplasia underscores the importance of vigilant surveillance and appropriate management strategies, as these lesions have a higher propensity for progression to colorectal cancer [8].

Clinical Implications and Management considerations: The distribution of adenomas across different segments of the colorectal tract highlights the need for comprehensive screening and surveillance strategies tailored to individual patient risk factors. The identification of villous adenomas with high-grade dysplasia in the recto-sigmoid junction underscores the importance of complete endoscopic resection and close follow-up to mitigate the risk of disease progression [9].

Surveillance Strategies: The findings of this case series underscore the importance of risk stratification and personalized surveillance strategies in patients with colorectal adenomas. Current guidelines recommend colonoscopic surveillance intervals based on the size, number, and histological characteristics of detected polyps, with more frequent surveillance indicated for high-risk lesions [10]. Increasedcolonoscopic surveillance (typically a 3-year interval is recommended: three or more adenomas (of any type), an adenoma greater than 1 cm, an adenoma with a villous component (tubulovillous or villous), or an adenoma with high-grade dysplasia.

Conclusion:

In conclusion, this case series provides valuable insights into the clinical and histopathological characteristics of adenomas encountered in colorectal biopsy specimens. The identification of high-grade dysplasia in a subset of cases highlights the need for vigilant surveillance and appropriate management strategies to mitigate the risk of malignant transformation. These findings contribute to our understanding of colorectal adenomas and inform clinical decision-making in the management of patients with these lesions.

Declaration:

Conflicts of interests: nil
Author contribution: All authors have contributed in the manuscript.
Author funding: nil

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