

## Histopathological Study of Colorectal Biopsies at Tertiary Care Centre

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### Abstract

**Background:** Numerous benign and malignant tumours can affect the colon and rectum. Since many lesions take longer to diagnose due to hazy symptoms, a biopsy is often necessary. The present study was done to study the spectrum of histopathology of colorectal biopsies.

**Methods:** This retrospective observational study was conducted in the Department of Pathology, Viswabharathi Medical College from January 2019 to December 2019. Endoscopic biopsies of colorectal lesions received in the Department of Pathology were included in the present study. The diagnosis in all the cases was made on Hematoxylin and Eosin stained slides of processed tissue.

**Results:** A total of 40 biopsies of colorectal lesions were received for histopathological examination. The spectrum of histopathology of colorectal lesions ranged from non-neoplastic lesions to malignancies. Out of 40 cases, 28(70%) were males and 12 (30%) were females with age range from 5 years to 80 years. Nonneoplastic lesions were nonspecific colitis, sigmoid colon volvulus, gangrene, ulcerative colitis, inflammatory polyp, and granulomatous colitis. Neoplastic lesions were Juvenile rectal polyp, Adenomatous rectal polyp, adenocarcinoma, mucinous adenocarcinoma, squamous cell carcinoma, and malignant melanoma.

**Conclusion:** The majority of cases were non-neoplastic lesions, among which common finding was nonspecific colitis. The most prevalent neoplastic lesion was colon adenocarcinoma. For colorectal lesions, histopathology aids in early diagnosis, treatment direction, follow-up, and surveillance.

**Keywords:** Colorectal Lesions, Biopsy, Histopathology, Endoscopy

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### Background

The colon is the site of a wide variety of neoplastic and non-neoplastic disorders, which can sometimes result in severe consequences [1]. In western populations, the colon is the most prevalent location for gastrointestinal neoplasia [2]. Colorectal

cancer is one of the most prevalent malignancies globally and the major cause of cancer-related mortality. Globally, colorectal epithelial tumours are a leading source of illness and mortality [3].

In most countries, the current advice for colorectal cancer screening is to begin endoscopy and biopsy screening at age 50 for men and women at average risk of developing colorectal cancer. Artificial intelligence-based histopathology image categorization for colorectal cancer diagnosis is a growing technique for colorectal carcinoma screening and monitoring [4]. This study was conducted to investigate the spectrum of colorectal biopsy histopathology.

### Materials and Methods

This is a retrospective observational study done for a period of 1 year from January 2019 to December 2019 in the Department of Pathology, Viswabharathi Medical College, Kurnool. The ethical approval was taken from the Institutional Ethics Committee and informed consent was taken from all the participants. Endoscopic biopsies of colorectal lesions received in the Department of Pathology were included in the present study.

The biopsy specimen obtained in the Department of Pathology was fixed in 10% buffered formalin. Formalin fixed specimens were subjected to detailed gross examination and subjected for histopathological processing and paraffin blocks prepared. Sections were cut at 3-5  $\mu$  thickness and stained by hematoxylin and eosin and mounted in DPX. Immunohistochemistry was done in selected case to confirm the diagnosis. The slides thus prepared were then examined under the microscope, and the lesions were diagnosed and classified according to the recent WHO classification.

### Results

A total of 40 endoscopic biopsies were received for histopathological examination. The age of patients ranged from 5 years to 80 years. Males were 28 and females were 12. Age and gender distribution of cases with colorectal lesions were mentioned in Table-1 and Table-2 respectively.

**Table 1: Age distribution of cases with colorectal lesions (n=40)**

Age	No. of Cases (40)	Percentage
<20 years	4	10
20-40	12	30
>40 years	24	60

A maximum number of cases were observed among the age group of >40 years

**Table 2: Sex distribution of cases with colorectal lesions (n=40)**

Gender	No. of Cases (40)	Percentage (%)
Male	28	70
Female	12	30

Maximum number of cases was observed in Males

**Table 3: Location of colorectal lesions**

Site	No. of cases	Percentage (%)
Ascending colon	3	7.5
Transverse colon	5	12.5
Descending colon	2	5
Sigmoid colon	9	22.5
Caecum	3	7.5
Rectosigmoid	6	15
Rectum	12	30

The majority of lesions were from the rectum (12), followed by sigmoid volvulus (9) and rectosigmoid junction (6).

**Table 4: Spectrum of histopathology of colorectal lesions**

Diagnosis	Subtypes	Total
Non-neoplastic lesion	Hirschprung disease-4 Nonspecific colitis-10 Crohns disease-2 Sigmoid colon Volvulus-4 Moderate dysplasia-1 Nonspecific ulcer-1 Ulcerative colitis-1 Granulomatous colitis-1	24 (60%)
Malignancy	Adenocarcinoma-8 Mucinous adenocarcinoma-1 Squamous cell carcinoma- 1 Malignant melanoma- 1	11 (27.5%)
Benign	Juvenile rectal polyp- 2 5 Adenomatous rectal polyp. 3 7.5	5 (12.5%)

Spectrum of histopathology of colorectal lesions ranged from nonneoplastic lesions to neoplastic lesions. Among 40 cases, 24 showed non-neoplastic lesions, 11 showed Malignancy lesions and 5 showed benign lesions. Among non-neoplastic lesions, 10 showed Non-specific colitis. Among Malignancy, 7 showed Adenocarcinoma. Among Benign lesions, 3 shown Adenomatus rectal polyp

### Discussion

Histopathological examination of colorectal biopsies is of extreme significance for a conclusive diagnosis of nonneoplastic and neoplastic lesions and on the basis of histopathological diagnosis, further treatment protocol can be done at the earliest.

In our study patterns varied from non-neoplastic lesions like Granulomatous colitis, acute & chronic non-specific colitis, Crohn's disease, Sigmoid colon Volvulus, Moderate dysplasia, Ulcerative colitis, and Hirschprung disease to neoplastic lesions like Juvenile rectal polyp, Adenomatous rectal polyp, adenocarcinoma, mucinous adenocarcinoma, squamous cell carcinoma, and malignant melanoma.

The major age group in the present study was 40-60 years and is in concordance with the study done by Ch Geetha *et al* [5] and B.Vani *et al* [6]. Male predominance is seen

in present study similar to the study by Bhagyalakshmi A *et al* [7] and B Vani *et al* [6].

Non-neoplastic lesions were common in the present study, similar to the study done by Ch. Geetha *et al*. [5]. Nonspecific colitis was found to be the commonest non-neoplastic lesion in our study. This is in accordance with the study conducted by Rajbhanderr M *et al*, [8] Adenocarcinoma was the most common histological variant in our study, which was consistent with findings of other similar studies like Kudale SS *et al*, [9] Shah N *et al* [10] and Goswami S *et al* [11].

### Conclusion

The majority of cases were non-neoplastic lesions, with acute and chronic nonspecific colitis being a typical finding. The most prevalent neoplastic lesion was colon adenocarcinoma. Biopsy is an essential diagnostic procedure for colorectal cancerous tumours. The significance of histopathology for reliable diagnosis of colorectal lesions is highlighted by this study.

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