

# Clinicopathological Study of Colorectal Carcinomas

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DOI: [10.36348/sjpm.2020.v05i01.005](https://doi.org/10.36348/sjpm.2020.v05i01.005)

| Received: 03.01.2020 | Accepted: 19.01.2020 | Published: 30.01.2020

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## Abstract

**Background:** The aim of this study is reviewing the histopathological spectrum of malignant neoplastic lesions of the large intestine. **Methods:** This is a retrospective & prospective study carried out in the department of pathology from June 2017 to June 2019. The specimens from the medical and surgical gastroenterology department were studied. Variables like age, sex, tumor size, location, type of lesion, the histological pattern of patients were studied. **Results:** In the series of 140 patients of colorectal neoplasm, the maximum number of patients presented in the fourth decade of life (34.28%) with a mean age of presentation at 53.7 years. The youngest patient with adenocarcinoma was 24 years (male) of age, and the oldest one was 80 years (male) of age. The male to female ratio was 1.12:1. The proportion of well-differentiated carcinoma was highest in left side colon and rectum, whereas the incidence of moderately and poorly differentiated adenocarcinoma was higher on the right-side colon. **Conclusion:** Adenocarcinoma is the most common histological variant of colon carcinomas showing slight male preponderance and the most common site being rectum.

**Keywords:** Neoplastic lesions, Adenocarcinoma, Large intestine.

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## INTRODUCTION

Globally around 800000 new colorectal cancer cases are believed to occur, which accounts for approximately 10% of all incident cancers, and mortality due to colorectal cancer was nearly 450000 [1]. Although incidence varies widely, with higher incidence rates in North America, Australia, and Europe and lowers in developing countries.

The risk of acquiring colorectal cancer increases with age, and more than 90% of new cases diagnosed are in patients above 50 years. Generally, colorectal cancer incidence and mortality rates are highest in developed Western nations [1-5]. This may be related to the consumption of high-fat or high red meat diet, and lack of physical activity resulting in obesity and variations in mortality causes over a longitudinal period.

## METHODS

The study was done at the Department of Pathology, Narayana Medical College and Hospital, Nellore, Andhra Pradesh, India. It was done for a period of two years from June 2017 to June 2019. This study was done after taking the ethical approval from the ethical review committee of Narayana medical college, Nellore. The specimens were fixed in 10% formalin,

followed by processing and embedding. Paraffin-embedded blocks were cut into 4-5 microns thin sections and stained with Haematoxylin and eosin.

## RESULTS

In the present series of 140 patients of colorectal carcinomas maximum number of patients presented in the fourth decade of life (34.28%), minimum cases were (5.71%) between 20- 30 years (Table-1). The male to female sex ratio in the present study was 1.12:1 (Table-2).

The youngest patient with adenocarcinoma was 24 years (male) of age, and the oldest one was 80 years (male) of age (Table-3). The mean age of presentation of colorectal cancers in this study was 53.7 years of age.

It was observed that carcinoma of left-sided colon cancer constituting 112 (80.00%) cases was more common than carcinoma of right-sided colon cancers comprises of 28 (20.00%), with a left-sided carcinoma to right-sided carcinoma ratio was 4:1 (Table-4).

Rectum was the most affected site constituting about 62(44.28%) cases, followed by ascending colon with 18(12.85%) cases, sigmoid colon with 18(12.85%) cases, descending colon with 16 (11.42%) cases, caecum with 4 (2.85%) cases and splenic flexure and anal canal constituting 06 (4.28%) and 16 (11.42%) cases respectively (Table-5).

The predominant histological type in the present study was adenocarcinoma, of which well-differentiated type in 78 (55.71%), moderately differentiated type in 32 (22.85%) (Figure-1) and poorly differentiated type in 12(8.57%) (Figure-2) cases while others constituted (12.84%) which includes mucinous adenocarcinoma also (Figure-3).

**Table 1: Age Profile of Patients with Colorectal Carcinoma**

AGE	NO OF CASES	PERCENTAGE
20-30years	08	5.71%
31-40years	14	10.00%
41-50years	48	34.28%
51-60years	22	15.71%
61-70years	26	18.57%
71-80years	22	15.71%

**Table-2: Sex Wise Distribution of Cases**

SEX	CASES (n=140)	PERCENTAGE (%)
MALES	74	52.86
FEMALES	66	47.14

**Table-3: Age-Sex Wise Distribution of Cases**

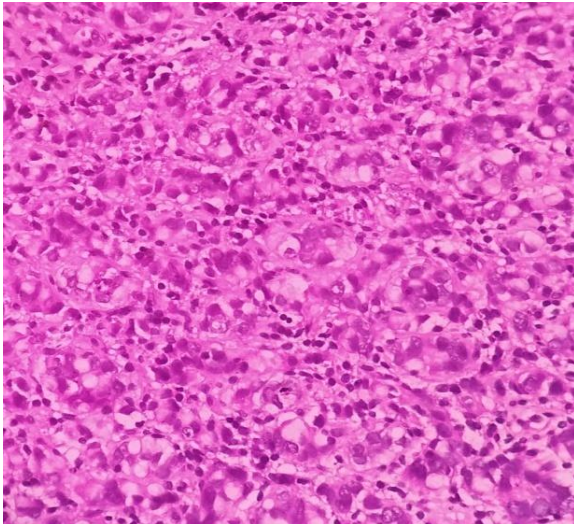
AGE	MALE (n=74)	FEMALE(n=66)
20-30years	06(4.28%)	02(1.43%)
31-40years	06(4.28%)	08(5.71%)
41-50years	20(14.28%)	28((20.00%)
51-60years	10(7.14%)	12(8.57%)
61-70years	18(12.85%)	08(5.71%)
71-80years	14(10.00%)	08(5.71%)

**Table-4: Distribution of Malignant Lesions in Large Intestine Based on Site (Right Vs Left)**

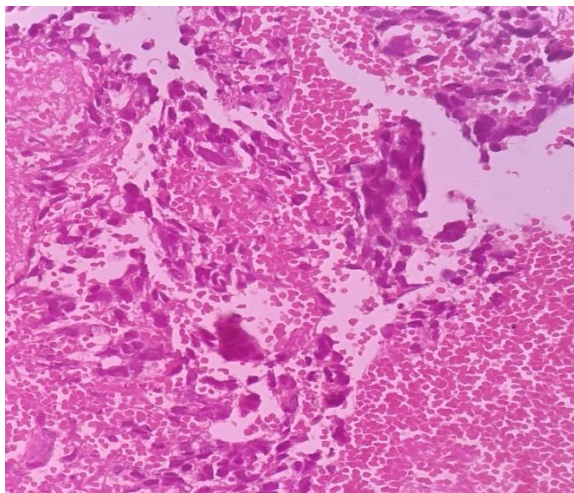
RIGHT COLON	NO OF CASES	LEFT COLON	NO OF CASES
CEACUM	04(2.85%)	DESCENDING COLON	16(11.42%)
ASCENDING COLON	18(12.85%)	SIGMOID COLON	18(12.85%)
SPLENIC FLEXURE	06(4.28%)	RECTUM	62(44.28%)
		ANAL CANAL	16(11.42%)
TOTAL	28(19.98%)		112(79.97%)

**Table-5: Site of the Primary Tumor**

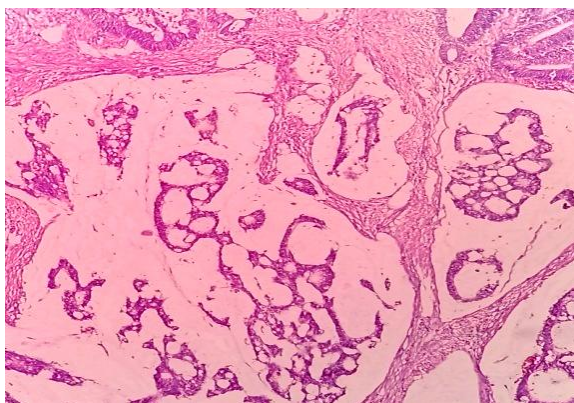
LOCATION	NO OF CASES	PERCENTAGE
Rectum	62	44.28%
Sigmoid colon	18	12.85%
Splenic flexure	06	4.28%
Ascending colon	18	12.85%
Descending colon	16	11.42%
Caecum/ileocaecum	04	02.85%
Anal canal	16	11.42%



**Fig-1: Moderately differentiated adenocarcinoma**



**Fig-2: Poorly differentiated adenocarcinoma**



**Fig-3: Mucinous adenocarcinoma**

## DISCUSSION

Colorectal cancer is a disease with a significant worldwide burden in terms of patient sufferings and the cost of treatment. Colorectal cancer is the most common malignant neoplasm in the gastrointestinal tract, and worldwide colorectal cancer is the second most common among women and the 3rd most common among men [6]. Incidence increases after 35 years of age and rapidly rises after 50 years of age

and peak in the seventh decade. The majority, nearly 90% of cancers, occur after 50 years of age. Although cases have been reported in young children and adolescents. In the present study, the most common age group of colorectal cancer was 50 to 65 (24.2%) followed by 61 to 75 (20%) which was consistent with studies of Al-Samawi *et al.*, [7]. In our study males outnumbered females with male to female ratio of 1.12:1 [8-10].

Around 61.43% of patients had bleeding per rectum as their common presenting symptom. Other presenting symptoms were altered bowel habits, pain abdomen, and anemia. A minority of the patients presented with rare clinical features of subacute intestinal obstruction or distention [11, 12].

Epidemiologic studies have linked an increased risk of colorectal cancer with a diet rich in red meat and animal fat, with a low-fiber diet and low overall intake of fruits and vegetables. The majority of patients in the present study were non-vegetarians consuming red meat, with obesity and lack of physical activity. This is inconsistent with studies of Larson *et al.*, [13] Sandhu *et al.*, [14] and Cross *et al.*, [15].

The carcinoma of left-sided colon exceeds the number of cases of carcinoma right-sided colon, which is consistent with the world's literature and other Indian studies [16, 10].

A study by Kumar *et al.*, [17] revealed that rectum was more commonly involved in 29.6% cases, sigmoid colon in 26.5%, ascending Colon in 21%, descending Colon in 17.9%, and transverse Colon in 4.9%. Similar results were observed in the present study, rectum with most commonly involved (44.28%), followed by sigmoid colon and ascending colon constituting the maximum number of colon cancers (25.7%).

The increasing prevalence of obesity with decreasing physical activity in many parts of the world, resulting from "Westernization," is likely to raise the incidence of colorectal carcinoma in countries with low rates if these behaviors are not modified.

## CONCLUSION

- Adenocarcinoma colon is the most common histological tumor type in the large intestine, which is similar to that seen in India and the rest of the World.
- The most common site for a malignant lesion in our population is of ascending colon.
- Colorectal carcinoma shows an increasing trend towards a younger age group ( $\leq 30$  years), constituting 5.71% of total cases, with more number of cases among females with unfavorable histological grade.



- Colon carcinoma is seen increasing in frequency in the younger population, so a person having bowel symptoms with iron deficiency anemia should undergo proper evaluation as early as possible.

**Funding:** No funding sources.

**Conflict of Interest:** None declared.

**Ethical Approval:** Approved by the institutional ethical committee.

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