



## Clinicopathological Characteristics of Colorectal Carcinoma -A Retrospective Study in a Tertiary Care Center

Author

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### Abstract

The aim of this study is to find the predominant histological types of colon carcinomas among the resection specimens received in our centre and to study in detail about the various demographic details like age group, sex and the pathological characteristics of the same. The cases diagnosed as colorectal carcinomas from colonic resection specimens during a 3 year period in the department of pathology, PSGIMSR were included in the study. The clinical details like age, sex of the patients and other gross findings necessary such as site, size of the tumor were taken from the requisition slips. The representative paraffin blocks and H&E slides were retrieved from the archives of pathology. There were 40 cases of colorectal carcinoma, of these 21 cases (52%) were males and 19 (47.5%) were females. Maximum numbers of case were between the age group of 41 to 80 years. The youngest patient was a 33 year old female. A high proportion of the tumors were located on the distal colon. The sizes of the tumors were ranging from 1.0 cm to 8.0 cm in greater dimension. Majority of the tumors (32 cases, 80%) were conventional adenocarcinoma, 6 cases (15%) were mucinous adenocarcinoma and 2 cases (5%) were signet ring cell carcinoma. Majority of them (27 cases, 67%) were moderately differentiated. 9 cases (22.5%) including the other variants like mucinous and signet ring cell carcinomas were poorly differentiated. Majority of the cases (70%) were in stage 3 and 25% of cases were in T1 stage. Lymph node metastases were seen in eleven cases.

**Keywords:** colonic carcinomas, age, sex, histology, grading, lymph node metastases.

### Introduction

Globally the medical fraternity is facing a major challenge in the form of increasing incidence of colorectal carcinoma. Colorectal cancer is the 3<sup>rd</sup> most common malignancy reported worldwide. Countries like North America, Australia, and Europe are facing an increased incidence of colorectal carcinoma.<sup>[1]</sup> When compared to the western world, colonic cancer is less common in India. <sup>[2]</sup> Colorectal carcinomas are mostly associated with diet, genetics and environmental factors. With westernization of life style, India is facing an increase in incidence of colorectal cancer. In this study we took the colonic resection

specimens and studied their demographic details so as to find the common age group, sex, size, histological type, degree of differentiation, tumor stage and lymph node metastases.

### Materials and Method

The cases diagnosed as colorectal carcinomas from colonic resection specimens during a 3 year in the department of pathology, PSGIMSR were included in the study. The case selection was done by simple random sampling. The colonoscopic biopsy specimens were rejected from the study.

The clinical details like age, sex of the patients and other gross findings necessary such as site,

size of the tumor were taken from the requisition slips. The representative paraffin blocks and H&E slides were retrieved from the archives of pathology. Paraffin blocks of the slides with high tumor density were chosen for the study. 4µ thick sections were made from the chosen blocks for routine hematoxylin and eosin staining. Then the cases were screened for histological type of the tumor and grade of differentiation. Tumor status and lymph node involvement status, as per the TNM staging were analyzed and noted in the master chart.

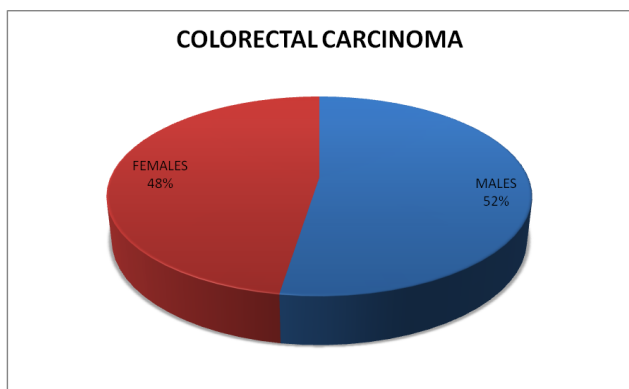
**Results**

There were 40 cases of colorectal carcinoma, of these 21 cases (52%) were males and 19 (47.5%) were females (Graph 1). Male to female ratio was 1.1: 1. The age range was between 33 and 85 years with a mean age of 58.9 years. Maximum numbers of case were between the age group of 41 to 80 years (Table 1) The youngest patient was a 33 year old female.

**Table 1:** Age distribution of colorectal carcinomas.

Age (years)	No of cases	No of males	No of females
30-40	04	00	04
41-50	09	06	03
51-60	08	03	05
61-70	08	06	02
71-80	09	05	04
81-90	02	01	01
<b>Total</b>	<b>40</b>	<b>21 (52%)</b>	<b>19 (47.5%)</b>

**Graph 1:** Sex distribution of colorectal carcinomas



A high proportion of the tumors were located on the distal colon. Out of 40 cases, 15 cases had a tumor proximal to splenic flexure and 25 had distal to splenic flexure. Maximum number of

cases (12/40) were seen in rectum(30%), followed by sigmoid colon (9/40). (Table 2)

**Table 2:** site of tumors

Site	No of cases
Caecum	04 (10%)
Ascending colon	04 (10%)
Transverse colon	07 (17.5%)
Descending colon	03 (7.5%)
Sigmoid colon	10 (25%)
Rectum	12 (30%)
<b>TOTAL N0:</b>	<b>40</b>

The sizes of the tumors were ranging from 1.0 cm to 8.0 cm in greater dimension. 20 cases were 3.0 to 6.0 cm in size. 9 cases were less than 3.0 cm and another 9 cases were more than 6.0 cm in size.

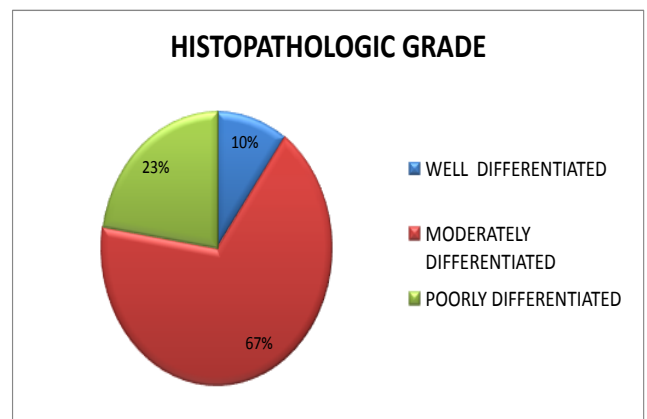
Majority of the tumors (32 cases, 80%) were conventional adenocarcinoma, 6 cases (15%) were mucinous adenocarcinoma and 2 cases (5%) were signet ring cell carcinoma.( table 3)

**Table 3:** histological grade

Histological type	No of cases
Adenocarcinoma	32 (80%)
Mucinous carcinoma	06 (15%)
Signet ring cell carcinoma	02 (5%)
<b>Total</b>	<b>40 cases</b>

Histopathologically, the tumors were graded into well differentiated, moderately differentiated and poorly differentiated. The mucinous and signet ring cell carcinomas were also considered as poorly differentiated. Majority of them (27 cases, 67%) were moderately differentiated. 9 cases (22.5%) including the other variants like mucinous and signet ring cell carcinomas were poorly differentiated. (graph 2)

**Graph 2:**



Majority of the cases (70%) were in stage 3 and 25% of cases were in T1 stage. Lymph node metastases were seen in eleven cases. (table 4&5)

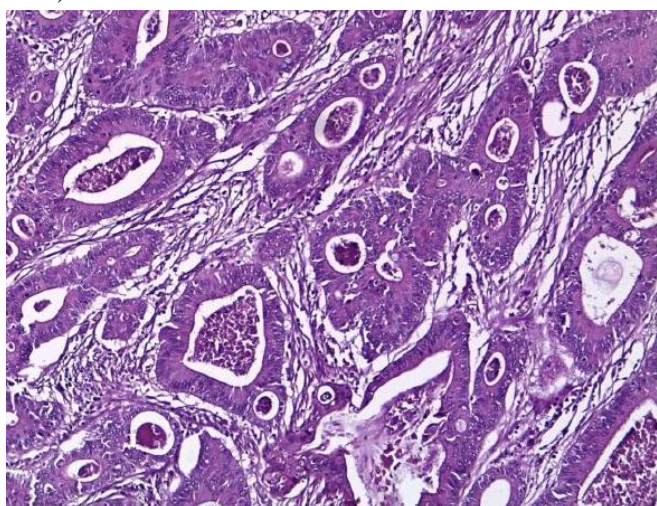
**Table 4:** stage of tumor

Tumor stage (T)	No of cases
T0	00
T1	01(2.5%)
T2	10 (25%)
T3	28(70%)
T4	01(2.5%)
Total	40 cases

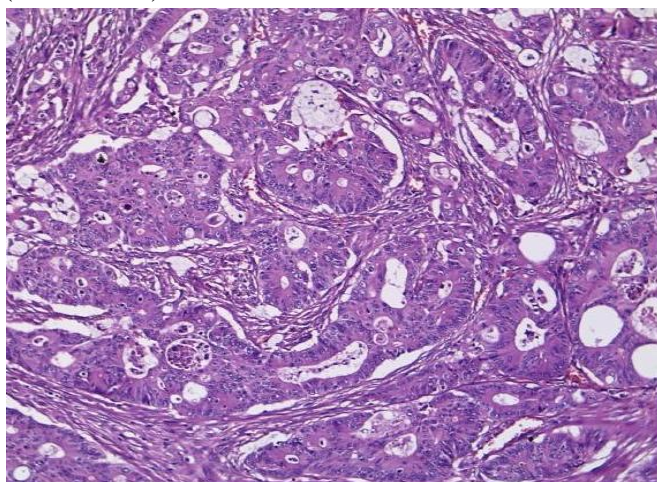
**Table 5:** nodal metastases

Lymph node involvement	No of cases
N0	29(73%)
N1	8(20%)
N2	3(7%)
Total	40 cases

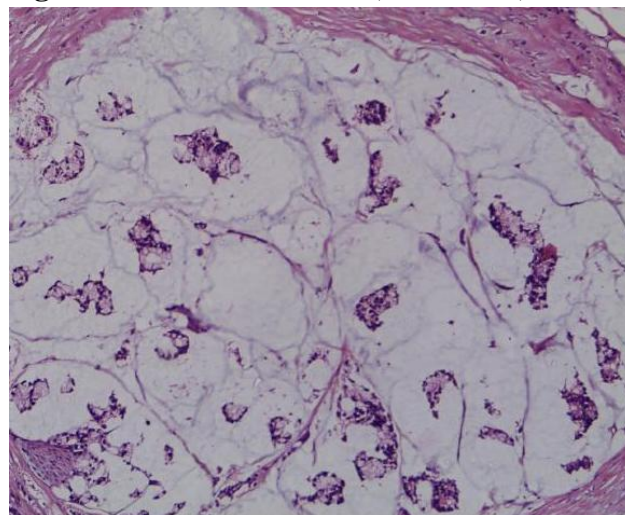
**Fig 1:** Well differentiated adenocarcinoma (H& E 10X)



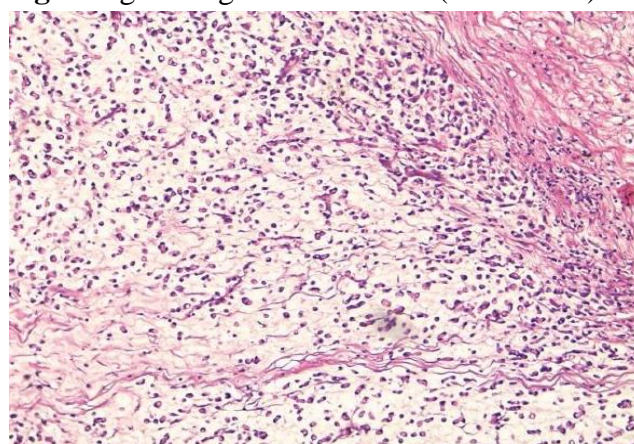
**Fig 2:** Moderately differentiated adenocarcinoma (H& E 10X)



**Fig 3:** Mucinous carcinoma (H& E 10X)



**Fig 4:** Signet ring cell carcinoma (H& E 10X)



**Discussion**

In the present study the maximum numbers of case were between the age group of 41 to 80 years. The youngest patient was a 33 year old female. This is in contrast to a study by D.sharma<sup>(3)</sup> were 40% cases were below 40 yrs. However few studies show that 5-15 % cases belong to younger age group.

In the present study the maximum number of tumors are inrectum followed by sigmoid colon. D. Sharma et al, showed the most common sites involved in their study is rectum.<sup>(3)</sup>

In our study most of the tumors were moderately differentiated, followed by poorly differentiated and well differentiated. The poorly differentiated variant included mucinous and signet ring cell carcinomas and are mostly seen in young individuals. These are mostly of younger age group. This is in accordance with the study of Bhatia<sup>(4)</sup>,

Majority of the cases (70%) were in stage 3 and 25% of cases were in T1 stage. Few studies have shown that 75% to 80% cases present in stage 3 and 4<sup>(5)</sup>.

### Conclusions

The incidence of colorectal carcinomas are on the rise and is often seen in younger age group and advanced stage at presentation. Few factors like poorly differentiated histology and mucinous, signet ring cell morphology are associated with poor outcome too. To conclude, patient awareness should be created for early detection of the colorectal carcinomas in a curable stage.

### References

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