

## A HISTOPATHOLOGICAL STUDY OF MALIGNANT LESIONS OF LARGE INTESTINE



### Pathology

**KEYWORDS:** large intestine, adenocarcinoma, squamous cell carcinoma, malignant melanoma.

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### ABSTRACT

**Introduction:** Large intestine is a common site for malignancies. This study was undertaken to determine the histomorphological spectrum of these malignancies, and their burden in areas nearby our institute.

**Methods:** This study is carried out in the department of pathology, Sardar Patel Medical College and associated group of hospitals, Bikaner for a period of 28 months.

**Results:** Colon and rectum constituted 68 cases (90.66%), 5 (6.66%) cases of anal canal and only 2 (2.66%) cases of appendix. Peak occurrence was in 6th decade with male to female ratio 0.8:1. Adenocarcinoma constituted 82.35%, mucinous adenocarcinoma 7.35%, and SCC 5.88%, two cases of malignant melanoma and single case of signet ring cell carcinoma. Majority of adenocarcinomas were moderately differentiated. Adenocarcinoma was commonest finding even in appendix and anal canal.

**Conclusion:** Left sided colon was the most common site for malignancies of large intestine. Histopathological examination aids in early detection and proper treatment.

### INTRODUCTION

According to World Cancer Report 2014, among men, cancer of colorectum ranked third, preceded by lung and prostate cancers. Among women, it ranked as second most common cancer, only preceded by cancer of breast.[1]

Intestinal carcinomas are among the most common malignant neoplasms in industrialized countries but significant proportion of cases occur in developing world that emphasizes proper documentation of histopathologically diagnosed these malignancies.

The large intestine, extends from the ileocaecal junction to the anus. It is about 1.5 m long, and is divided into the caecum, the ascending colon, the transverse colon, the descending colon, the sigmoid colon, the rectum and the anal canal. In the angle between the caecum and the terminal part of the ileum there is a narrow diverticulum called the vermiform appendix.[2]

### AIMS AND OBJECTIVES

1. To study the various histopathological patterns of malignancies of large intestine.
2. To study various types of large intestinal malignancies with regard to site, frequency, age and sex distribution.

### MATERIAL AND METHODS

This study is carried out in the department of pathology Sardar Patel Medical College and associated group of hospitals, Bikaner. The study included endoscopic and surgically resected biopsies received in the department during July 2014 to October 2016 and diagnosed as malignancy. Clinical and gross details and histopathological findings were analysed. Slides were stained with H & E staining initially then other special staining was done where required.

### OBSERVATION AND RESULT

Out of 75 malignancies included in the study, colon and rectum constitute highest number of cases 68(90.66%), followed by 5 (6.66%) cases of anal canal and only 2(2.66%) cases of appendix.

**TABLE 1. AGE AND SEX DISTRIBUTION OF MALIGNANCIES OF LARGE INTESTINE**

Age (in years)	Male	Female	Total
11-20	2		2
21-30	4	4	8
31-40	4	5	9

41-50	5	9	14
51-60	7	9	16
61-70	4	11	15
71-80	7	0	7
81-90	1	3	4
Total	34	41	75

Highest number of malignant tumors were recorded in 6th decade of life.

**TABLE 2. SITE WISE GENDER DISTRIBUTION**

Site	Male	Female	Total
Appendix	1	1	2
Colon and rectum	32	36	68
Anal canal	1	4	5
Total	34	41	75

Overall female predominance is seen in our study with male to female ratio of 0.8:1.

### Appendix:

Only two cases were reported in appendix.

Both were of 6th decade, one being male another female.

Both were adenocarcinoma, one showing signet ring cells and other showing mucinous differentiation.

### Colon and rectum:

**TABLE 3. SITE WISE HISTOPATHOLOGICAL DIAGNOSIS**

Site	Adenocarcinoma	SCC	Malignant melanoma	Total
Caecum	4			4
Ascending colon	2			2
Transverse colon	6			6
Descending colon	9			9
Sigmoid colon	11			11
Rectum	30	4	2	36
Total	62	4	2	68

Rectum was the commonest site constituting 52.9% of all malignancies of this region.

In general left sided colon was more frequently involved by malignancies.

Out of total colorectal malignancies, adenocarcinoma constituted 82.35% i.e. 56 cases.

Mucinous adenocarcinoma cases comprised 7.35% (5 cases), and SCC 5.88% (4 cases), two cases (2.94%) of malignant melanoma and a single case (1.47%) of signet ring cell carcinoma also reported.

In this study out of 56 adenocarcinomas, majority (94.64% i.e. 53 cases) were moderately differentiated, 2 cases (3.57%) were well differentiated and single case (1.78%) was poorly differentiated.

#### **Anal canal:**

Total 5 tumors recorded in anal canal, 3 were adenocarcinoma and single cases each for SCC and malignant melanoma.

Tumors of anal canal showed female predominance with male female ratio of 1:4.

One cases for each decade is reported from 3rd to 6th decade and one case was reported in 9th decade.

#### **DISCUSSION**

Tumors of large intestine comprise greater proportion of intestinal tumors when compared with small intestine, which is lengthier though.

These demonstrate variety of histological patterns and age and sex distribution also varies with site of involvement as with geographical variation.

Ours is a prospective study of 75 consecutive malignant tumors of large intestine reported between July 2014 and October 2016, in the department of pathology, sardar patel medical college, Bikaner.

Malignancies of large intestine were seen over a wide range of age. Highest distribution was after 4th decade and peak in 6th decade that was consistent with study done by Leena devi et al [3]. Studies by Prabhakar et al [4] and Meeta et al [5] showed peak in 5th decade.

#### **Malignancies of appendix:**

Tumors of appendix are far uncommon. In study done by Geeta et al [6], only 4 cases of neoplasm of appendix were noted, that was 1.2% of total appendectomy specimen included in that study. Out of 4, 3 were secondary to adenocarcinoma of colon and one was carcinoid.

In our study only two cases reported. Both are adenocarcinoma. One was reported in 58 year male, other one in 60 year female.

Findings can not be generalized because of small number of study sample.

#### **Malignancies of colon and rectum:**

Male to female ratio in this study showed slight female predominance (M:F=0.8:1), which was in conformity with study from Nepal by Mohammed et al [7], (M:F=0.5:1). However studies by Leena devi et al [3] (M:F=1.9:1), Abdulkareem et al [8] (M:F=1.3:1), Prabhakar et al [4] (M:F=2.2:1) and Jackson J et al [9] (M:F=1.1:1) showed male predominance.

Left colon was the predominant site involved (82.3%) in our study as with studies done by Leena et al (76.8%) [3] and Eisenberg et al (66.5%) [10]. Overall rectum was the most commonly involved site in our (52.9%) as well as in study done by Leena et al (69.2%) [3].

The histological study showed 62 cases (91.2%) were adenocarcinoma, 4 cases (5.9%) SCC and 2 cases (2.9%) of malignant melanoma, confirming the adenocarcinoma as the most common malignancy of colon and rectum, as shown in previous studies done by Abdulkareem et al [8] where adenocarcinoma constituted 96.4% (405 cases) and Meeta et al [5] has documented all the cases of colorectal malignancy as adenocarcinoma (27 cases).

Among the variants of adenocarcinomas, majority 56 (90.3%) were ordinary adenocarcinomas that was consistent with study by Abdulkareem et al [8] where 366 (90.4%) were ordinary adenocarcinoma out of total 405 adenocarcinomas. 5 (8.0%) cases were mucinous adenocarcinoma and one (1.6%) was signet ring cell adenocarcinoma in our study; 34 cases (8.4%) of mucinous and 5 cases (1.2%) of signet ring cell carcinomas were noted in study by Abdulkareem et al [8] while in study by Meeta et al [5] adenocarcinomas were 63%, mucinous adenocarcinoma 29.6% and signet ring cell carcinoma 7.4%.

The majority of adenocarcinomas were moderately differentiated in our study.

#### **Anal canal:**

3 cases out of 5 were adenocarcinoma, while literatures and study done by Djenaba et al [11] showed SCC as the most common malignancy. All the 3 adenocarcinomas in our study were reported in small biopsy specimens and morphologically all were similar to adenocarcinoma of colon and rectum. As stated in literature, distinction of these tumors from lower rectal adenocarcinomas directly extending into the anal canal can be very difficult or impossible. As a whole, adenocarcinoma of the anal canal represents a unique challenge both for pathologic diagnosis and for clinical management. Its rarity makes it difficult to perform controlled clinical studies or large retrospective reviews. [12]

#### **This explains the disparity in results from previous studies.**

One case of SCC and one case of malignant melanoma also reported but these results can not be generalised because of small study size (only 5 cases of anal tumors in total).

Our study showed female predominance that is in conformity with study by Djenaba et al [11].

#### **CONCLUSION**

Left sided colon specially rectum was the most common site for malignancies of large intestine. Peak age distribution was in 6th decade with slight female predominance. Adenocarcinoma was commonest malignancy; majority were moderately differentiated. Histopathological examination is must for the diagnosis and typing of these tumors. It aid in early detection and proper treatment.

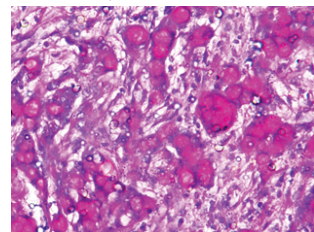


Figure 1: PAS stained, signet ring cell carcinoma of appendix, 40x.

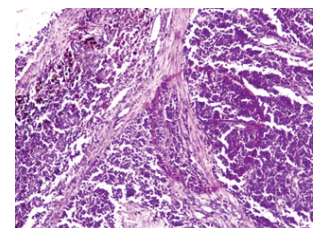


Figure 2: Malignant melanoma rectum, H&E, 10x

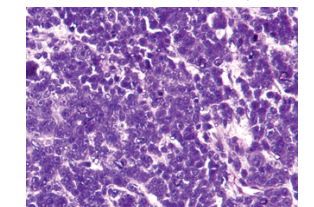


Figure 3: Malignant melanoma, macronucleoli are visible. H&E, 40x

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