

**A CLINICOPATHOLOGICAL CORRELATION OF COLORECTAL AND ANAL CANAL MALIGNANCY**

Majethia Nikhil Kantilal<sup>1</sup>, Pankti Haria<sup>2</sup>, Vandana Dahake<sup>3</sup>, Felice Faizal<sup>4</sup>, Mohd. Unzer Khan<sup>5</sup>, Rohini Shewale<sup>6</sup>, Milind Patil<sup>7</sup>, Alka kalgutkar<sup>8</sup>

**HOW TO CITE THIS ARTICLE:**

Majethia Nikhil Kantilal, Pankti Haria, Vandana Dahake, Felice Faizal, Mohd. Unzer Khan, Rohini Shewale, Milind Patil, Alka kalgutkar. "A Clinicopathological Correlation of Colorectal and Anal Canal Malignancy". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 55, July 09; Page: 9623-9635, DOI: 10.14260/jemds/2015/1389

**ABSTRACT: BACKGROUND:** Colorectal carcinoma is considered a calamity for humanity, but it could have a long survival if it is diagnosed early. The epidemiology of this calamity is also interesting and has always been the subject of investigation in the in the western world. **AIMS: 1.**To compare the findings in a series of 215 cases studied over a period of 6 years from 2008 to 2013. **2.** To study the incidence of colorectal carcinoma in a population with respect to age, sex, religion and diet. **3.** To study the occurrence of the carcinoma in a different parts of the colon. **4.** To study the different histological and morphological types of carcinoma of colon. **5.** To study the stages of carcinoma at the time of presentation by American Joint Commission on Cancer (AJCC) staging system. **6.** To study the clinical presentation of colorectal carcinoma. **SETTINGS:** Lokmanya Tilak Municipal General Hospital, Sion, Mumbai. **DESIGN:** A retrospective observational study. **METHODS AND MATERIAL:** The malignant tumor of large bowel and anal canal received in the Surgical Pathology, Department of Pathology, Lokmanya Tilak Medical College and General Hospital in Mumbai in the form of biopsy and resected specimen were studied after microscopic confirmation of diagnosis over a period of 6 years from 2008 to 2013. A total number of cases studied are 215 cases excluding the superficial biopsy and doubtful cases. **RESULTS:** Of total 46255 surgical specimen, 6911 were gastrointestinal specimen i.e. 14.9% of all specimens, and 4271 were colorectal specimen. Of 4271 gastrointestinal specimens 497 gastrointestinal malignancy while 215 had colorectal malignancy. The common age group affected is 51-60 years. Rectum (57.74%) is the most common site of colorectal malignancy. Abdominal pain (33.5%) was the most common clinical feature. Ulceroinfiltrative is the most common type of gross morphology of tumor in rectum. Hindu and non-vegetarian are most common risk factors. Adenocarcinoma (52.55%) was the most common microscopic type, belonging to AJCC stage IIA (40%). **CONCLUSION:** The most common site for gastrointestinal malignancy was rectum and anal canal with adenocarcinoma was the most common microscopic type. The above observation implies for a greater emphasis on early recognition of signs and symptoms, to facilitate for early diagnosis so that curative resection can be attempted for the patient to enjoy a better prognosis and better quality of life.

**KEYWORDS:** Autopsy, Colon, Cancer, Rectum.

**INTRODUCTION:** Colorectal carcinoma is considered a calamity for humanity, but it could have a long survival if it is diagnosed early. The epidemiology of this calamity is also interesting and has always been the subject of investigation in the in the western world.

Colorectal carcinoma is one of the commonest neoplasm affecting individuals living in industrialized nations. The lifetime risk of developing colorectal carcinoma between ages 50 to 70 years is approximately 5% with a 2.5% chance of dying from it. The colorectal carcinoma is third most common cause of death and accounts for 10% of cancer related death worldwide.

## ORIGINAL ARTICLE

---

The worldwide burden of colorectal carcinoma is 134000 new cases and 55000 deaths every year. Although the death rate from large bowel cancer may be decreasing slightly, it still remains a health risk that consumes national resources and creates considerable personal suffering.

The pathogenesis is related to environment, family and genetic factors. The dietary factors particularly fats and animal protein are related to their influence on the intestinal micro-flora and ultimately on the chemical composition of intraluminal content. It is been suggested that about three quarters of cases of colorectal cancer may be associated with lifestyle and are therefore theoretically avoidable. Dietary modification may decrease the neoplastic transformation potential of bowel mucosa, but the widespread adoption of low fat, high fiber diets will not eliminate totally the risk of large bowel cancer. The most common presenting symptoms of cancer are rectal bleeding, persisting change in bowel habit, and anemia; more advanced tumors to cause weight loss, nausea, anorexia and abdominal pain. The early symptoms may not be severe and often not clear cut. In some patients, symptoms do not become apparent until the cancer is far advanced. Although the diagnosis is most easily and reliably established by flexible sigmoidoscopy or colonoscopy. Barium enema has been used in many hospitals. A new form of imaging virtual colonoscopy is now being adopted in an increasing number of units. Computed tomography (CT) or magnetic resonance imaging (MRI) imaging is necessary to assess the extent of the tumors.

### AIMS AND OBJECTIVES:

- To compare the findings in a series of 215 cases studied over a period of 6 years from 2008 to 2013.
- To study the incidence of colorectal carcinoma in a population with respect to age, sex, religion and diet.
- To study the occurrence of the carcinoma in a different parts of the colon.
- To study the different histological and morphological types of carcinoma of colon.
- To study the stages of carcinoma at the time of presentation by American Joint Commission On Cancer (AJCC) staging system.
- To study the clinical presentation of colorectal carcinoma.

**MATERIAL & METHODS:** The malignant tumor of large bowel and anal canal received in the Surgical Pathology, Department of Pathology, Lokmanya Tilak Medical College and General Hospital in Mumbai in the form of biopsy and resected specimens were studied after microscopic confirmation of diagnosis over a period of 6 years from 2008 to 2013. A total number of cases studied are 215 cases excluding the superficial biopsy and doubtful cases.

The general factors of each case like age, sex, religion, dietary status, presenting complaints, clinical examination findings for the exact site of tumor, pathological feature like gross appearance, microscopic feature and staging was studied in detailed both prospectively and retrospectively

Special stains were used on the tumor tissue and adjacent mucosa for confirmation of diagnosis.

All the specimens of colorectal carcinoma received in our tertiary hospital according to the standard proforma. This standard proforma was adopted from the Royal College of Pathologist, London, United Kingdom as a National Minimum Dataset of Colorectal Carcinoma for Histopathologist Report.

## ORIGINAL ARTICLE

### RESULTS AND OBSERVATIONS:

Year	Total Surgical Specimen	Total gastrointestinal specimen	Total colorectal specimen	Gastrointestinal malignancy	Colorectal malignancy
2008	9508	1360	929	79	30
2009	8000	1175	803	91	30
2010	8248	1317	846	110	46
2011	7685	1318	876	89	50
2012	7383	1001	696	71	35
2013	5451	740	121	57	24
<b>Total</b>	<b>46255</b>	<b>6911</b>	<b>4271</b>	<b>497</b>	<b>215</b>

Table 1A: Statistics of our Hospital from 2008-2013

	Male	Female	Total
0-20	1	4	5
21-30	14	16	30
31-40	12	19	31
41-50	22	16	38
51-60	31	25	56
61-70	37	15	52
71-80	2	1	3
<b>Total</b>	<b>119</b>	<b>96</b>	<b>215</b>

Table 1B: Age and Sex Distribution of colorectal and anal malignancy

Site	Male	Female	Total	Percentage (%)
Caecum	10	12	22	10.52
Ascending Colon	10	10	20	9.58
Hepatic Flexure	1	1	2	0.93
Transverse Colon	4	8	12	5.26
Splenic Flexure	1	2	3	1.5
Descending Colon	6		6	2.81
Sigmoid Colon	12	12	24	11.66
Rectum	66	58	124	57.74
<b>Total</b>	<b>110</b>	<b>105</b>	<b>215</b>	<b>100</b>

Table 2: Sex and Site wise Distribution of colorectal malignancy

## ORIGINAL ARTICLE

Site	Specimen	Biopsy
Caecum	18	4
Ascending Colon	16	4
Hepatic Flexure	1	1
Transverse Colon	10	2
Splenic Flexure		3
Descending Colon	5	1
Sigmoid Colon	17	9
Rectum	41	83
<b>Total</b>	<b>108</b>	<b>107</b>

Table 3: Type of specimen

Sign and symptom	No. Of cases	Percentage (%)
Abdominal pain	74	33.5
Bleeding per Rectum	33	15.5
Altered bowel habits	25	12
Weight loss	23	10.4
Weakness	10	5
Anemia	10	5
Palpable Mass	22	10
Obstruction	18	8.6

Table 4: Clinical Features of colorectal Malignancy

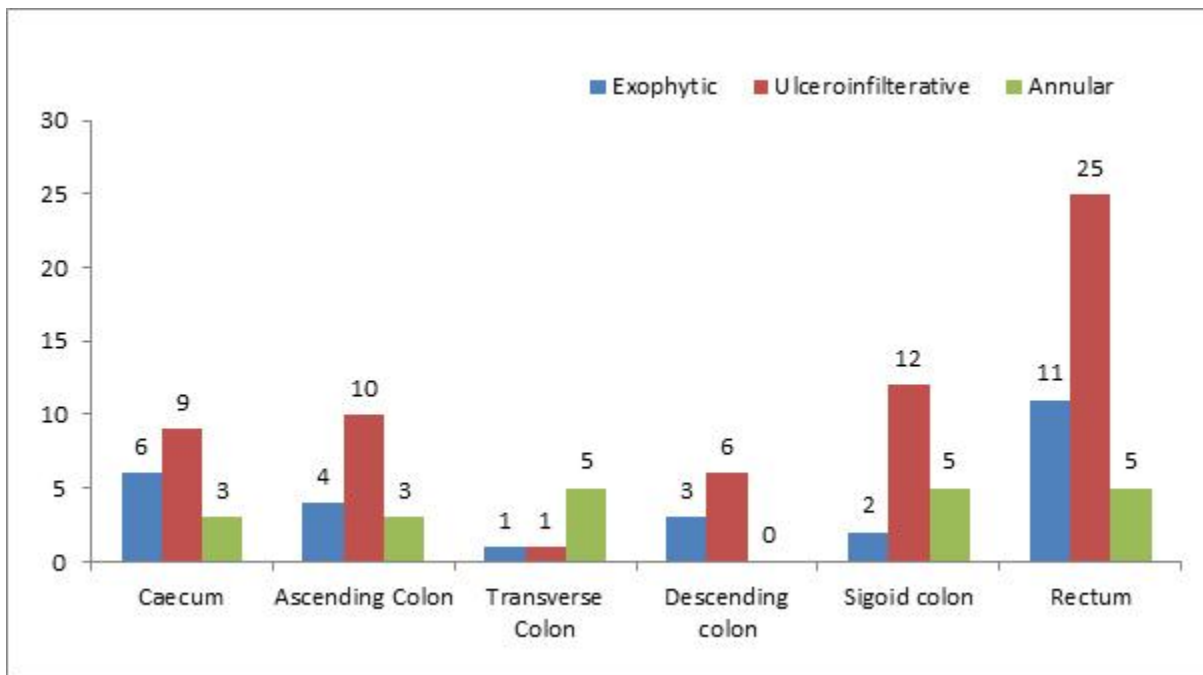


Table 5: Gross morphology of tumor vs site of tumor

## ORIGINAL ARTICLE

Hindu	175	81.39%
Muslim	38	17.68%
Christian	2	0.93%
<b>Total</b>	<b>215</b>	<b>100%</b>

**Table 6: Religion Distribution of cases**

Diet	Male	Female	Total	Percentage
Vegetarian	39	28	67	31.16
Non Vegetarian	71	77	148	68.84
<b>Total</b>	<b>110</b>	<b>105</b>	<b>215</b>	<b>100</b>

**Table 7: Diet wise Distribution of cases**

Site / Microscopic type	Caceum	Ascending Colon	Transverse Colon	Descending Colon	Sigmoid Colon	Rectum	Total	Percentage (%)
Adneocarcinoma	11	7	5	4	20	66	113	52.55
Mucinous Carcinoma	7	11	5	5	6	33	67	31.16
Saquamous Carcinoma	-	-	-	-	-	16	16	7.44
Adenosquamous Carcinoma	-	-	-	-	--	1	1	0.46
Signet ring Cell Carcinoma	2	-	-	-	-	2	4	1.88
Melanoma	-	-	-	-	-	3	3	1.40
Basaloid Carcinoma	-	-	-	-	-	2	2	0.93
Carcinoid	-	-	-	-	-	-	1	0.46
Non Hodgkins Lymphoma	1	1	-	-	-	1	3	1.4
Metastasis	1	2	2	-	-	-	5	2.32
<b>Total</b>	<b>22</b>	<b>22</b>	<b>12</b>	<b>9</b>	<b>26</b>	<b>124</b>	<b>215</b>	<b>100</b>

**Table 8: Histological type of Malignancy involving colorectal region**

AJCC Stage	No. of Patient	Percentage (%)
0	0	
I	14	12.72
IIA	44	40
IIB	9	8.2
IIIA	1	0.9
IIIB	20	18.2
IIIC	17	15.44
IV	6	4.5
<b>Total</b>	<b>108</b>	<b>100</b>

**Table 9: AJCC Stage wise distribution of cases**

## ORIGINAL ARTICLE

**DISCUSSION:** A careful and systemic pathological examination of resected specimen of colorectal carcinoma provides the clinician with valuable information as regards to the staging and prognosis of cancers.

In the present study colorectal and rectal and anal canal malignancy from a major bulk (43.03%) in all gastrointestinal malignancy specimen received in our tertiary institute.

The age incidence of patient with primary colorectal and anal malignancy in the present study ranges from 14 to 78 years with a mean age incidence was 50 years. The mean age of incidence for male patients was 51 years and that for female patients was 49 years. The population below the age of 40 years in the present study was 30.64%. This difference in age incidence is probably related to difference in dietary habits. Also whether this difference is due to geographic in nature or whether it indicates change in the trend of colorectal carcinoma in terms of occurrence of colorectal cancer in younger population needs to be further evaluated.

One possible explanation could be increased use of endoscopy in diagnosis of colorectal lesion and timely biopsy of suspected growth. Therefore the colorectal malignancy are getting diagnosed at an earlier age and at early stage than what was done in past. This concept was supported by our study, which shows that 69.40% of colorectal malignancy occurs at rectosigmoid region which are within reach of proctosigmoidoscope.

The youngest patient with a primary colorectal malignancy in our study was 14 years boy presented with bleeding per rectum, pain and alternate diarrhoea and constipation. The specimen of abdominoperineal resection was received which shows an ulcero-proliferative growth measuring 8x6x2 cm at anal margin. Histology shows features of mucin secreting adenocarcinoma with involvement of circumferential cut margin and lymph node metastasis. In Rankin and Chumley series of 158 cases, the youngest patient was 16 years boy. King and Satory discovered the colloid carcinoma in 12 years old boy. Parkinson reports colloid cancer in 12 year old girl.<sup>1</sup> The oldest patient in the present study was 78 years male who presented with a painless bleeding PR on and off since 6 month and h/o weight loss and altered bowel habit. PR examination revealed a hard mass at anal verge. We received a specimen of abdominal-perineal resection which shows an ulcero-proliferative annular growth at anal verge. Histology shows features of poorly differentiated adenocarcinoma reaching up to serosa with perineural invasion. In present study male female ratio was 1.04:1. male compromised 55.34% of total patient. Hence in our study men and women were equally affected. The present study matches with a study done by Jalali and Jalali; they found equal sex ratio (1.1:1) which is close to international statistics.<sup>2</sup>

Sex	W.D. Anderson	Falterman et al	Present study
Male	46	42	55.34
Female	54	58	44.66
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

The above table shows that there was male preponderance in the study. The observation goes hand in hand with the study conducted by W.D. Anderson and Falterman et al. The site wise distribution of colorectal malignancy in the present study was as follows: caecum 10.52%, ascending colon 9.58%, hepatic flexure 0.93%, transverse colon 5.26%, splenic flexure 1.5%, descending colon 2.81%, sigmoid colon 11.66% and rectum and anal canal 57.74%. It is clear from the table 2 that

## ORIGINAL ARTICLE

more than half of colorectal malignancy occurs in the region of rectum and sigmoid colon. This difference in the site is due to easy accessibility of rectum and sigmoid by conventional proctosigmoidoscope and flexible sigmoidoscope.

Site	Falterman et al	Present study
Caecum	10.42	10.52
Ascending colon	4.78	9.58
Hepatic flexure	3.60	0.93
Transverse colon	5.15	5.26
Splenic flexure	3.85	1.5
Descending colon	5.11	2.81
Rectosigmoid colon	67.09	69.4
<b>Total</b>	<b>100</b>	<b>100</b>

The above table shows that in the present study the distribution of cancer throughout the colon was correlating with the study conducted by Falterman et al which states recto sigmoid colon as a commonest site of colorectal malignancy. The total number of gross specimen of colorectal malignancy received to our institute in 6 years was 108. (Table 3). The right colon comprising of caecum, ascending colon and hepatic flexure together contributed 35 gross specimen accounting for 32.4% of all colorectal specimen. Of these 35 specimens, 10 specimen were of exophytic type (28.58%), 19 specimen were of ulcero-proliferative type (54.28%) and 6 specimen were annular type (17.14%).

Hence it is clear from our study that thought exophytic morphological type is most in the right colon, it is common to find ulcero-proliferative type of growth in this location. Most of the lesion presented as a large ulcerated mass protruding into the lumen and completely obstructing it. The volume of the intraluminal portion of the tumor was far more than the intramural tumor. The transverse colon has 10 gross specimen making up to 5.26% of all gross specimen received. In transverse colon also, the most common morphological type was ulcero-proliferative type (60%) followed by exophytic type (30%).

Therefore the most common morphological type of growth in this location was ulcero-proliferative followed by exophytic type. The left colon comprise of splenic flexure, descending colon and sigmoid colon accounted for 25 of gross specimen i.e.28.14% out of which 3 specimen were of exophytic type(12%),13 specimen were of ulcero-proliferative type (52%) and 9 specimen were of annular type(36%). Therefore it is clear from the present study that the most common morphological type of tumour was ulceroproloferative type (52%) followed by annular type (36%). The rectum and anal canal accounted for 41 gross specimen making upto 38% of all gross specimen of colorectal malignancy. 11 specimen of exophytic type (28.32%), 25 of ulceroproliferative type (60.57%), and 5 of annular type (11.11%). The ulceroproliferative type was most common in the rectum and anal canal followed by exophytic type. In present study, out of 108 gross specimen of primary colorectal carcinoma, ulceroproliferative type of growth were most common 63 i.e. 56.77%, followed by exophytic growth 27 i.e. 24.32% and annular growth 21 accounts for 18.91%. In our study, the commonest signs and symptoms were abdominal pain and bleeding per rectum followed by altered habit, weight loss, obstruction, palpable mass, anemia and weakness.

## ORIGINAL ARTICLE

<b>Sign and Symptom</b>	<b>Falterman et al</b> not defined.	<b>W. D. Anderson</b> not defined.	<b>Present Study</b>
Abdominal pain	20.5	23	33.5
Bleeding per rectum	15.3	14	15.5
Altered bowel habits	16.4	13.56	12
Weight loss	16.2		10
Weakness		11.53	5
Anemia	11.1	16.16	5
Palpable mass	13	12.7	10.4
Obstruction	7.5	8.92	8.6
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

In right colon, the most common presenting signs and symptoms were abdominal pain and palpable mass followed by altered bowel habits and bleeding PR. Anemia are common in patient with right sided mass. Other constitutional symptoms like shortness of breath, giddiness etc were attributed to anemia. Bleeding PR in left colon cancer was dark brown and mixed with blood. In left colon, most common signs and symptoms were bleeding PR and altered bowel habits. In the left sided colon cancer, blood was bright red appeared on the surface of stool. On comparing the community wise distribution of cases, it was observed that majority of patient belong to Hindu community. Since Hindu forms a major community in the Mumbai, followed by Muslims and then other community like Christian, the distribution of cases follows same pattern with Hindu (81.39%), Muslim (17.68%) and Christian (0.93%). On comparing the diet distribution of colorectal cases (Table 7), it was found that the majority of population were non-vegetarians accounting for 68.84% of all cases.

This observation suggests that consumption of non-vegetarians food stuffs especially red meat increases the risk for colorectal cancer whereas dietary fibers and green vegetables are believed to decrease the risk of colorectal cancer. This observation shows that colorectal cancer is directly proportional to non-vegetarians food and indirectly proportional to vegetarian foods. The study conducted by Cho et al<sup>5</sup> whose results state that high intake of red meat was associated with higher risk of colon cancer. In our study all the tumours are staged by AJCC classification. On comparison it was found that most of the tumours were staged as IIA (40%) and least were of stage IV (4.54%). Thus it is clear from the present study that most of the cancers were detected at the earliest stage. This is due to early diagnosis and use of newer modality like endoscopy for diagnosis of colorectal carcinoma.

When tumours on right colon (Caecum and ascending colon) were staged 38.9% and 50% were in stage IIA, 22.23% and 25% were in stage IIIB, 16.66% and 6.25% were in stage IIIC respectively. From this is clear that some of the tumour on the right side was presented in late stage, this is due to the fact that the right colon is more capacious than left colon, the stool in the right colon is more soft and in liquid state. Hence the tumor on right side grows larger until the whole lumen gets obstructed. These tumours often spread beyond the bowel wall at the time of presentation. This finding is correlated with literature. The majority of tumours of left colon, rectum and anal canal in our study were of stage IIA (40% and 29.28%). This is due to early recognition of signs and symptoms



## ORIGINAL ARTICLE

produced by these tumours so they can be removed early by curative surgery. As shown in Table 6, most common histological type in the present study is adenocarcinoma (52.55%) followed by mucinous carcinoma (31.16%).

<b>Histological type</b>	<b>Falterman et al<sup>3</sup></b>	<b>Present study</b>
Adenocarcinoma	79	52.55
Mucinous carcinoma	10	31.16
Squamous Carcinoma	2	7.44
Carcinoid	4	0.46
Others	5	8.39
<b>Total</b>	<b>100</b>	<b>100</b>

The study of Falterman et al<sup>3</sup> also shows that the commonest histological type of colorectal carcinoma was adenocarcinoma followed by mucinous carcinoma which is correlating with the present study. In present study a total 113 cases contributed to adenocarcinoma forming a major bulk of microscopic type. In the study by Falterman et al,<sup>3</sup> adenocarcinoma comprised of 79% of all microscopic type. Adenocarcinoma is further divided into three grades. In our study, 40.46% were well differentiated (grade I), 22.80% were moderately differentiated (grade II), and 36.74% were poorly differentiated (grade III). Mucinous carcinoma comprised of 67 cases of all colorectal specimen contributing to 31.16% of all microscopic types. The most common site of mucinous carcinoma was rectum (49.27%) as shown in table. This is comparable with the study of Symonds and Vickery who found mucinous carcinoma in 33% of all colorectal malignancy, in the study of Zinner et al, the incidence of mucinous carcinoma was found to be 41% of all the microscopic type.<sup>6</sup>

<b>Site</b>	<b>Symonds and Vickery<sup>6</sup></b>	<b>Present study</b>
Caecum	16	10.4
Ascending colon	15	16.4
Transverse colon	6	7.64
Descending colon	2	7.46
Sigmoid colon		9.27
Rectum	34	49.27
<b>Total</b>	<b>100</b>	<b>100</b>

In the present study, the mucinous carcinoma occurs in the age range of 14 to 70 years with the mean of 41.33 years. In the series of Rankin and Chumley, the average age of incidence of mucinous carcinoma was 50.2 years; the youngest patient was 16 years and the the oldest patient was 75 years; whereas Symonds and Vickery reported the age of incidence of 27 and 84 years. O. Sasaki, W. S. Atkin and J. R. Jass do not found any sex difference in mucinous carcinoma.<sup>7</sup> There were 4 cases of signet ring cell carcinoma in our study comprising 1.88% of all microscopic type. Fu .K.I. et al reported the incidence of signet ring carcinoma in the range of 0.1% to 0.9%. The present study includes 4 cases, out of which 3 were male and 1 female patient. Fu K I et al study also shows preponderance of male patient.<sup>8</sup>

They were in the age range of 28 to 47 years. 2 cases were present in caecum and 2 cases found in the rectum. There were 16 cases of squamous cell carcinoma in our study accounting for

## ORIGINAL ARTICLE

---

7.44% of microscopic type. All 16 cases were found in the rectum. They were in the age range 41 to 69 years. Equal sex distributions were seen in our study. The most common presentation of squamous cell carcinoma in our study was bleeding PR, pain and mass in the rectum.

In the literature, it is given that the squamous cell carcinoma is most common in the anorectal region and in 6th and 7th decade of life with male preponderance. The most common complaints were bleeding (50%), pain (40%), mass (25%) and pruritus(15%).

In our study, there was only one case of adenosquamous carcinoma comprising of 0.46% of all microscopic type. Our case was seen in the rectum. Chevinsky et al estimated incidence of adenosquamous carcinoma to be 0.25% of all colorectal malignancy. Their study also shows equal sex distribution with male to female ratio of 1:1.2 and rectosigmoid were the common site in their study followed by caecum. They also states that these tumours present with advance disease, in younger patients and follow highly aggressive course as compared to adenocarcinoma of colon.<sup>9</sup> There were 3 cases of melanoma in our study accounting for 1.4% of all microscopic type. All 3 cases were found in the rectum and anal canal. All the cases were elderly female with age of 60, 60 and 70 years respectively. Pack, Lenson and Gerber found 1.5% of malignant melanoma were present in the anorectal region. B.C. Morsen and H. Volkstadt were found the average age of patient with malignant melanoma of 59 years with the age range 41 to 75 years and equal sex distribution.<sup>10</sup> There were only 2 cases of basaloid carcinoma in our study comprising of 0.93% of all microscopic types. Both were present in the anorectal region.

One patient was 39 years female and other was 56 years male. The sample was received in the form of multiple tissue bits and histology reveals the features of basaloid carcinoma. KJ Newell, J L Penswick and DK Driman states that basaloid carcinoma is the common neoplasm of the anorectal region.<sup>11</sup> In our study, there was only one case of carcinoid comprising of 0.46% of all microscopic types. Cullen PK states that 5 to 10% of carcinoid was located in the colon, with the majority occurring in the caecum. The incidence of carcinoid in all colorectal neoplasm was 0.3%. Authors reported that carcinoid >2 cms were associated with 10-20% incidence of metastasis. No association was found between patient age and outcome.<sup>12</sup> In our cases, there were 3 cases of Non Hodgkins Lymphoma accounting for 1.40% of all microscopic types. Their ages were 21, 35 and 53 years respectively. All 3 patient were males.

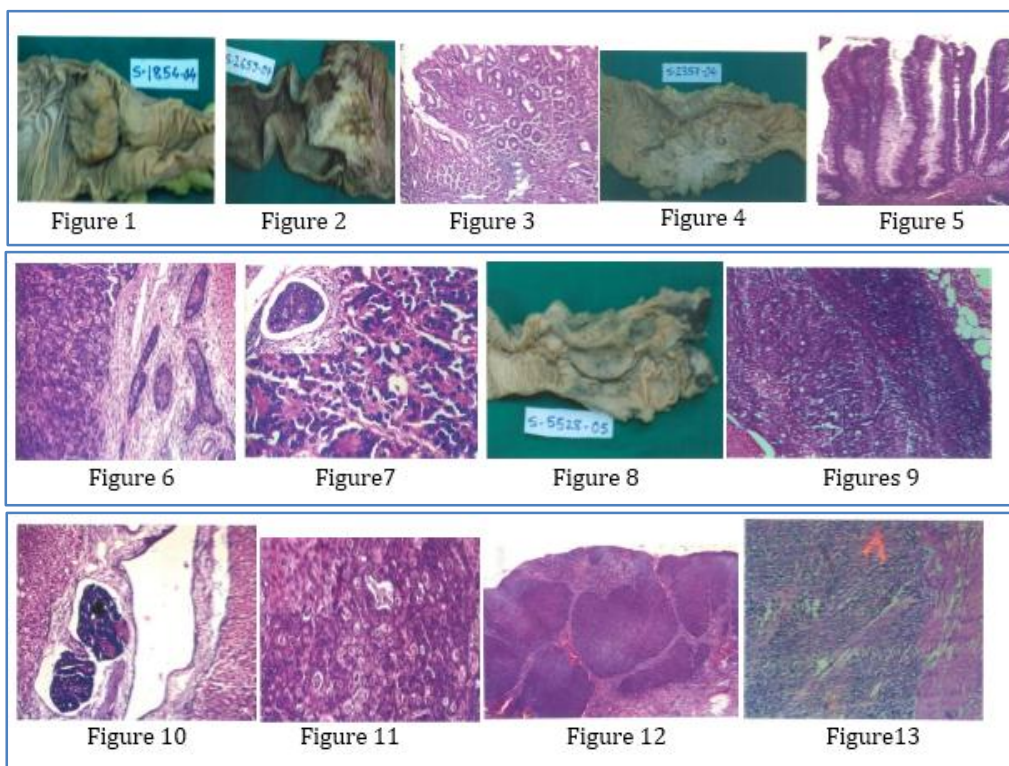
Two cases were of diffuse large B cell lymphoma and one case was of Burkitt's lymphoma. Mark Montgomery reported that the incidence of primary lymphoma of colon is 0.05 of all colonic neoplasm and less than 3% of all extranodal lymphoma, caecum and rectum were the most common site of lymphoma of colon. Lymphoma occurs in the 6<sup>th</sup> and 7<sup>th</sup> decade of life, the patient presents typically as bleeding PR, obstruction, perforation and intussusceptions.<sup>13</sup> There were 5 cases of metastasis in our study comprising of 2.32% of all microscopic types. One case of metastasis of mucin secreting carcinoma, 2 cases of squamous cell carcinoma and 2 cases of adenocarcinoma. They were in the age of 70, 60, 65, 16 and 55 years. Majority of the cases in our study belongs to AJCC stage IIA (40%) followed by stage IIIB (18.20%).

The results of the present study matches with the study of Eisenberg et al.<sup>14</sup> The majority of the tumours in stage IIIB were on right side of colon, our finding indicate that many right sided colonic cancers are detected in their advanced stage. The present study of colorectal carcinoma was useful in deciding and analysing treatment modality which have good implication in the patient follow up and for consideration in adjuvant treatment protocol.

## ORIGINAL ARTICLE

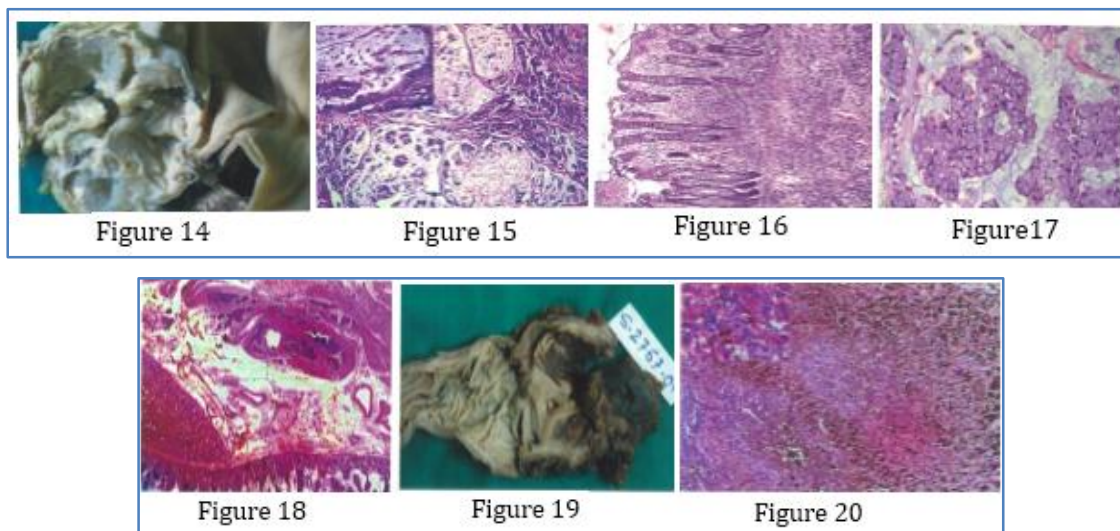
**CONCLUSION:** In the present study, we used a standard format for reporting the case of colorectal carcinoma, which was proposed by the 'Royal College of Pathologist' as a National minimum dataset of colorectal carcinoma for histopathology report. We analyzed a data for a period of 6 year. A total 215 cases were studied which shows that colorectal and anal canal carcinoma accounts for 43.03% of all gastrointestinal malignancy. The mean age of patient for colorectal and anal canal malignancy in our study was 51 years for male and 49 years for female with a male to female ratio of 1.04:1. In the present study, out of 215 patients, 148 patients (68.84%) were non-vegetarian. Maximum cases of colorectal carcinoma in our study were found in the rectum (57.74%) followed by the sigmoid colon (11.66%). The most common morphological type of colorectal carcinoma in our study was ulceroproloferative type (63 cases) which accounts for 56.77% of all colorectal specimen and majority of these lesion were present in retum and anal canal (25 cases). The most common histological type in the present study was adenocarcinoma (52.55%) followed by mucinous carcinoma (31.16%).

But mucinous carcinoma dominates over adenocarcinoma in the ascending colon comprising of 45% of all histological type at that site. All cases of squamous cell carcinoma 12.9% were found in rectum and anal canal which accounts for third most common histological type of malignancy at this site behind the adenocarcinoma (53.22%) and mucinous carcinoma (26.61%). In the present study, we encountered 1 case of adenosquamous, 4 cases of signet ring cell, 3 cases of melanoma, 2 cases of basaloid carcinoma, 1 case of carcinoid, 3 cases of non-hodgkin's lymphoma and 5 cases of metastasis to the colorectal carcinoma. Majority of cases in our study belongs to AJCC stage IIA (40%) followed by stage IIIB (18.2%). The majority of tumours in stage IIIB were on right side of colon. The above observation implies for a greater emphasis on early recognition of signs and symptoms, to facilitate for early diagnosis so that curative resection can be attempted for the patient to enjoy a better prognosis and better quality of life.



## ORIGINAL ARTICLE

**Fig. 1 & 2:** Gross specimen shows a exopytic polypoidal and ulceroproliferative growth of ascending colon. **Fig. 3.** Well differentiated Adenocarcinoma (grade I). **Fig. 4:** Papillary growth in transverse colon. **Fig 5.** Well differentiated villous type of papillary adenocarcinoma (grade I). **Fig. 6:** Moderately Differentiated adenocarcinoma infiltrating into the submucosa. **Fig. 7:** Poorly differentiated adenocarcinoma (grade III) with absence of glandular differentiation, loss of nuclear polarity, high mitotic activity and tumor emboli. **Fig. 8:** Gross of annular growth at rectum with thickening of intestinal wall. **Fig. 9:** Lymph node metastasis. **Fig. 10:** Vascular emboli. **Fig. 11:** Poorly differentiated adenocarcinoma with neuroendocrine differentiation. **Fig. 12:** Basaloid carcinoma of anal canal. **Fig. 13:** Non Hodgkin lymphoma infiltrating muscularis mucosa.



**Fig. 14:** Gross specimen of mucin secreting adenocarcinoma of ascending colon shows a large polypoidal growth, the cut surface of which shows abundant mucin content. **Fig. 15:** Mucin secreting adenocarcinoma. **Fig. 16 & 17:** Signet ring cell carcinoma shows diffuse infiltration of tumor cells into the lamina propria. **Fig. 18:** Metastasis of non-keratinizing squamous cell carcinoma. **Fig. 19:** Gross specimen of malignant melanoma shows a circumferential annular growth in anal canal. **Fig. 20:** Malignant melanoma of anal canal.

### REFERENCES:

1. Howard D Trimpi & Harry E Bacon. Mucinous carcinoma of the rectum. *Cancer* May 1951; 597-609.
2. SA Jalali, SM Jalali. The anatomical distribution of colorectal carcinoma-a ten year study (1990-2000). *Iranian J Public Health*, no.1-2:2002; 45-46.
3. WAD Anderson. Stage classification and end results reporting for carcinoma of the colon and rectum. *Cancer* 34:1974; 909-911.
4. Kenneth W. Falterman, Charles B. Hill, Join C. Markey, James W. Fox & Isidore Cohn. Cancer of the Colon, rectum and anus:A review of 2313 cases. *Cancer* 34:1974:951-959.
5. Chao A, Thun MJ, Connell CJ, Mc Cullough ML, Jacobs EJ, Flanders WD, Rodriguez C, Sinha R, Calle EE. Meat consumption and risk of colorectal cancer. *JAMA*.2005 Jan 12; 293 (2):172-82.
6. Daniel A Symods and Austin L Vickery. Mucinous carcinoma of rectum. *Cancer* 37:1976; 1891-1900.

## ORIGINAL ARTICLE

7. Sasaki, W. S. Atkin and J. R. Jass. Mucinous Carcinoma of rectum. *Histopathology* 1987; 11:259-272.
8. Kuang –I Fu, Yasushi Sano, Shigeharu Kato. Primary signet ring cell carcinoma of the colon at early stage: A case report and review of literature. *World J Gastroenterol*, Vol. 12(21); June 7 2006.
9. Aaron H Chevensky, Micheal Berelowith and Herbet C Hoover. Adenosquamous carcinoma of colon presenting as hypercalcemia. *Cancer* 60:1987; 1111-1116.
10. B C Morson and H Volkstadt. Malignant melanoma of anal canal. *J Clini Path*, 1963; 16: 126-131.
11. Newell K J, Penswick JL & Driman DK. Basaloid carcinoma of the colon arising at the splenic flexure. *Histopathology* 2001, 38: 232-236.
12. Aaryan n Kourna, GeofferyG Giacco, Steven A Curley. Carcinoid tumor of the rectum. *Cancer* (79).7; 1997.
13. Mark Montgomery & Felix S Chew. Primary lymphoma of colon. *Am Jr. Of Rad.*168, March 1997.
14. B Eisenberg, J Decosse, F Harford. Carcinoma of colon and rectum. The natural history. *Cancer* 49; 1982: 1131-11.

### AUTHORS:

1. Majethia Nikhil Kantilal
2. Pankti Haria
3. Vandana Dahake
4. Felice Faizal
5. Mohd. Unzer Khan
6. Rohini Shewale
7. Milind Patil
8. Alka kalgutkar

### PARTICULARS OF CONTRIBUTORS:

1. 3<sup>rd</sup> Year Resident, Department of Pathology, LTMMC & LTMGH, Sion, Mumbai.
2. 2<sup>nd</sup> Year Resident, Department of Pathology, LTMMC & LTMGH, Sion, Mumbai.
3. 3<sup>rd</sup> Year Resident, Department of Pathology, LTMMC & LTMGH, Sion, Mumbai.
4. 3<sup>rd</sup> Year Resident, Department of Pathology, LTMMC & LTMGH, Sion, Mumbai.

### FINANCIAL OR OTHER

**COMPETING INTERESTS:** None

5. 3<sup>rd</sup> Year Resident, Department of Pathology, LTMMC & LTMGH, Sion, Mumbai
6. 3<sup>rd</sup> Year Resident, Department of Pathology, LTMMC & LTMGH, Sion, Mumbai.
7. Associate Professor, Department of Pathology, LTMMC & LTMGH, Sion, Mumbai.
8. Professor & HOD, Department of Pathology, LTMMC & LTMGH, Sion, Mumbai.

### NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Majethia Nikhil Kantilal,  
201, Ashirwad Building,  
Plot No. 71, Sector No. 28,  
Navi Mumbai.  
E-mail: nikhilmajethia@gmail.com

Date of Submission: 15/06/2015.  
Date of Peer Review: 16/06/2015.  
Date of Acceptance: 03/07/2015.  
Date of Publishing: 08/07/2015.