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Histopathological Study of Neoplastic Lesions in Large Intestine

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Abstract: The Large Intestine neoplasms are one of the most common neoplasms encountered now a days. It consists of both colon and rectum malignancies. At present it ranks second to bronchogenic carcinoma in most prevalent cancers. Globally 8,00,000 Colo-Rectal Cancer cases are believed to occur and mortality of this is expected to be near 4,50,000. Overall incidence is 10% of all cancers. The present study was undertaken to study neoplastic lesions in the large intestine for the period of twenty-two months. The study consisted of total 65 cases out of which, 46 were surgically resected specimen and 19 were biopsies. Majority of the cases were Adenocarcinomas (61.5%), followed by Mucinous adenocarcinoma (24.6%). Most common location of Colo-Rectal Cancer was rectum (47.7%) followed by sigmoid colon (15.4%). Rare cases like Signet ring cell carcinoma, squamous cell carcinoma, Gastrointestinal stromal tumor and lymphoma were also found in the study. Histopathological evaluation is the only confirmatory investigation for diagnosis of such tumors. Present study emphasizes the need for early histopathological diagnosis for appropriate treatment.

Keywords: Large Intestine, Neoplastic Lesions, Adenocarcinoma

INTRODUCTION

The colon including rectum is one of the most common host of primary neoplasm in the body [1]. It is reported as the 2nd most prevalent malignancy in USA & Europe [2]. National Cancer Registry Programme (NCRP), a part of Indian Council of Medical Research (ICMR) reported incidence of Colo-Rectal Cancer (CRC) as 2.3% in females for colon cancers and 3.3% in males for Rectal cancers. Above study was based on population of Mumbai and Barshi respectively [3].

The incidence is on rise for CRC. It ranks fourth most common cancer in female and third most common cancer in males [4]. But it ranks second most common in the mortality aspect, first being Bronchogenic Carcinoma [5]. Globally 8,00,000 CRC cases are believed to occur and mortality of this is expected to be near 4,50,000. Overall incidence is 10% of all cancers. Majority of the neoplastic lesions of large intestine are of epithelial origin and virtually 95% of them are Adenocarcinoma. They typically arise in Polyps and produce symptoms relatively early and hence it is always a challenge in the medical profession to diagnose as early as possible. These lesions are curable with resection [6]. The malignant form has unpredictable behavior and hence it has led many clinicians to search for the factors that helps in preparing the prognostic index. Thus, staging and Grading has been evolved to show the Prognostic significance [7]. Hence this study was conducted to find the varying histological patterns and their stage at presentation which will be helpful in the prognosis of the patient.

MATERIALS AND METHODS

This is a prospective study of large intestinal neoplastic lesions conducted in a tertiary care hospital over a period of 22 months. It is composed of 65 cases. During this period the surgically resected specimens and biopsies in whom the neoplastic lesion was suspected were included in the study.

Inclusion Criteria

All confirmed cases as well as suspected cases of large intestinal neoplasms sent for histopathological examination in department of Pathology are included in this study.

Exclusion Criteria

Already diagnosed or those patients whose histopathological examination is not carried out in our hospital.

Received specimen and biopsies were kept in 10% formalin. Gross and microscopic findings of the benign and malignant lesions were noted. The study consisted of 46 surgically resected specimen and 19 biopsies. Out of 19 biopsies three cases which proved malignant were inoperable. Out of total 46 surgically resected cases, 30 of them have had diagnostic endoscopic biopsy. Apart from biopsy other modalities of investigations are also being done like Ultrasonography, Barium studies, Colonoscopy, Proctosigmoidoscopy and CT-Scan (Both plain and contrast). All these investigations thoroughly supported the clinicians as well as pathologists for final diagnosis. Out of total 65 cases, 27 patients were Anemic with the hemoglobin of less than 8 g/dl and one patient was HIV seropositive. Ten patients were suggested to do the tumor marker Carcinoembryonic antigen (CEA) in which all of them were above the normal levels. Adequate number of tissue blocks were made so as to look for different findings as mentioned above. Tissue processing was done as per standard methods and tissue was embedded in paraffin. Five microns thick sections were taken using a rotatory microtome and stained with Hematoxylene and Eosin stain. Thereafter the sections were studied under the light microscope and findings were noted. Special stains like Periodic acid Schiff (PAS), Mucicarmine were done wherever required. Final diagnosis was then framed.

The statistical analysis of the data was done using SPSS version 11.0 for windows. Chi-square and Student's t-test were used for checking the significance of the data. A p-value of 0.05 and lesser was defined to be statistical significant.

RESULTS

Table-1 shows the number of colorectal neoplastic lesions. The majority of cases came to us after surgical resection of colon. Out of nineteen biopsies two cases were inoperable while remaining were referred to some other hospital. Table-2 shows the distribution of colo-rectal carcinomas sex wise. The incidence of Colo-rectal neoplastic lesions was more in males (57%) as compared to females (43%). Table-3 shows the distribution of colorectal neoplastic lesions. The majority of cases were adenocarcinoma (61.5%), followed by Mucinous adenocarcinoma (24.6%). Table-4 shows the distribution of colorectal neoplastic lesions age wise. The maximum incidence of adenocarcinoma was found in the sixth decade. Youngest case was 20 years and oldest case was 83 years old. Mucinous adenocarcinomas were common in the fifth decade. Juvenile polyps were common among the tumor like lesions in the first decade. Table 5 shows the distribution of colo-rectal neoplastic lesions site wise. Most common location of Colo-rectal neoplastic lesions is Rectum (47.7%) followed by sigmoid colon (15.4%) while the least common location is Descending colon (4.6%) (Fig-1). Table-6 shows the distribution of macroscopic type of growth in colo-rectal carcinomas. The Ulceroproliferative type of growth is the most common type (44.4%) of all macroscopic type of growths, followed by Ulceroinfiltrative type (37.8%) (Fig-2). Table-7 shows the distribution of symptomatology in patients. The most common symptom to the patients in colo-rectal neoplastic lesions is pain in abdomen (70.8%) followed by intestinal obstruction (69.2%) and rectal bleeding (67.7%).

Table-1: Number of Colorectal Neoplastic Lesions

NATURE OF SPECIMEN	NUMBER	PERCENTAGE
BIOPSY	19	29.2
RESECTED SPECIMEN	46	70.8
TOTAL	65	100

Table-2: Distribution of Colo-Rectal Carcinomas Sex Wise

TITLE	MALE	FEMALE
TOTAL CASES	37	28
PERCENTAGE	57	43

Table-3: Distribution of Colorectal Neoplastic Lesions

TUMOURS AND RELATED CONDITIONS	NO. OF CASES	PERCENTAGE
A.BENIGN EPITHELIAL LESIONS:		
Tubular Adenoma	2	3.2
Villous Adenoma	0	0
Tubulo-Villous Adenoma	0	0
B.MALIGNANT EPITHELIAL LESIONS:		
Adenocarcinoma	40	61.5
Mucinous Adenocarcinoma	16	24.6
Signet-Ring Cell Carcinoma	1	1.5
Squamous Cell Carcinoma	1	1.5
Undifferentiated Carcinoma	0	0
C.CARCINOID TUMOUR:	0	0
D.NON-EPITHELIAL TUMOURS:	0	0
Leiomyoma	0	0
Leiomyosarcoma	0	0
Gastrointestinal Stromal Tumor	1	1.5
E.LYMPHOMA:	1	1.5
F.SECONDARY TUMOURS:	0	0
G.TUMOUR LIKE LESIONS:		
Peutz-Jegher's Polyp	0	0
Juvenile Polyp	2	3.2
Hyperplastic Polyp	1	1.5
Inflammatory Polyp	0	0
H.RECURRENCE IN ADENOCARCINOMA	0	0

Table-4: Distribution of Colorectal Neoplastic Lesions Age Wise

TUMOURS AND RELATED CONDITIONS	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	>80
A.BENIGN EPITHELIAL LESIONS:									
Tubular Adenoma	0	0	0	0	1	1	0	0	0
Villous Adenoma	0	0	0	0	0	0	0	0	0
Tubulo-Villous Adenoma	0	0	0	0	0	0	0	0	0
B.MALIGNANT EPITHELIAL LESIONS:									
Adenocarcinoma	0	0	2	3	4	14	9	6	1
Mucinous Adenocarcinoma	0	0	2	3	7	1	2	1	0
Signet-Ring Cell Carcinoma	0	0	0	0	0	1	0	0	0
Squamous Cell Carcinoma	0	0	0	0	1	0	0	0	0
C.CARCINOID TUMOUR:	0	0	0	0	0	0	0	0	0
D.NON-EPITHELIAL TUMOURS:									
Leiomyoma	0	0	0	0	0	0	0	0	0
Leiomyosarcoma	0	0	0	0	0	0	0	0	0
Gastrointestinal Stromal Tumor	0	0	0	0	0	0	0	0	1
E.LYMPHOMA:	0	0	0	0	0	0	0	1	0
F.SECONDARY TUMOURS:	0	0	0	0	0	0	0	0	0
G.TUMOUR LIKE LESIONS:									
Peutz-Jegher's Polyp	0	0	0	0	0	0	0	0	0
Juvenile Polyp	2	0	0	0	0	0	0	0	0
Hyperplastic Polyp	0	0	0	1	0	0	0	0	0
Inflammatory Polyp	0	0	0	0	0	0	0	0	0
H.RECURRENCE IN ADENOCARCINOMA	0	0	0	0	0	0	0	0	0

Table-5: Distribution of Colo-Rectal Neoplastic Lesions Site Wise

SITE OF LESION	NO. OF CASES	PERCENTAGE (%)
Caecum	8	12.3
Ascending Colon	9	13.8
Transverse Colon	4	6.2
Descending Colon	3	4.6
Sigmoid Colon	10	15.4
Rectum	31	47.7
TOTAL	65	100

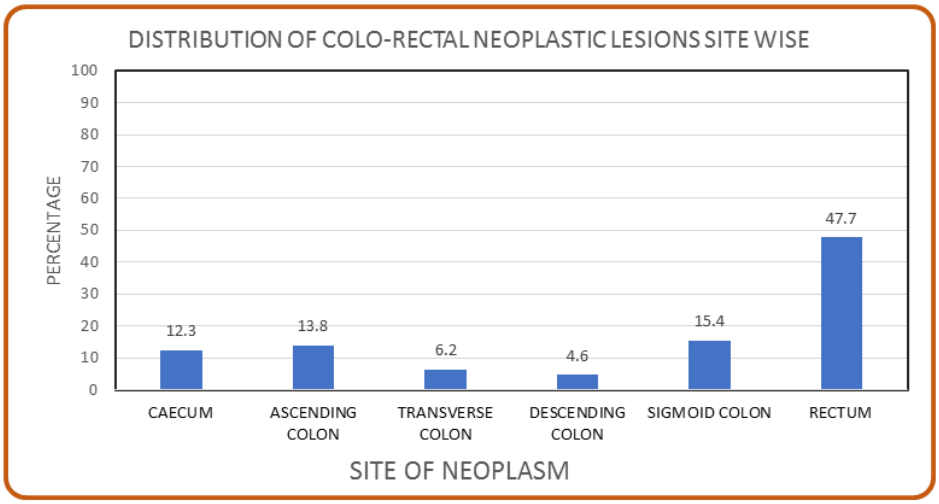


Fig 1:

Table-6: Distribution of Macroscopic Type of Growth in Colo-Rectal Carcinomas

TYPE	TOTAL	PERCENTAGE
Polypoid	5	11.1
Ulceroinfiltrative	17	37.8
Ulceroproliferative	20	44.4
Fungating	3	6.7
TOTAL	45	100

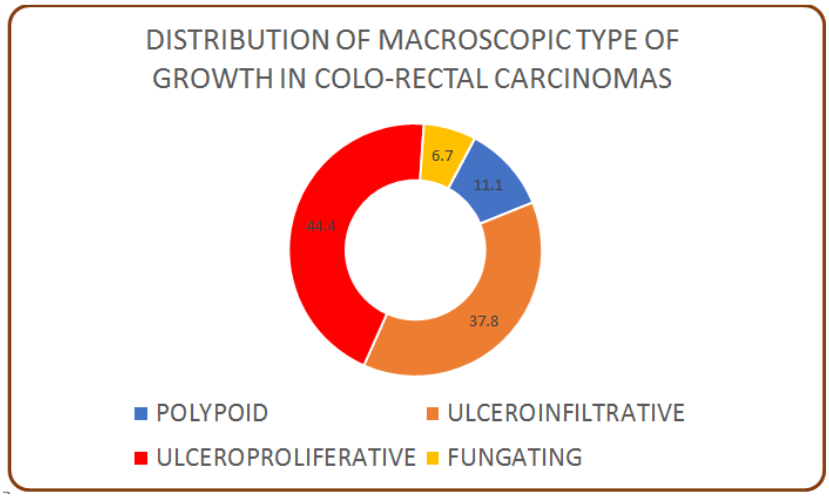


Fig-2:

Table-7: Distribution of Symptomatology In Patients

SYMPTOMS	NUMBER	PERCENTAGE
Rectal Bleeding	44	67.7
Lump in Abdomen	40	61.6
Pain in Abdomen	46	70.8
Weight Loss	29	44.6
Loss of Appetite	39	60.0
Anaemia	36	55.4
S/O Intestinal Obstruction	45	69.2

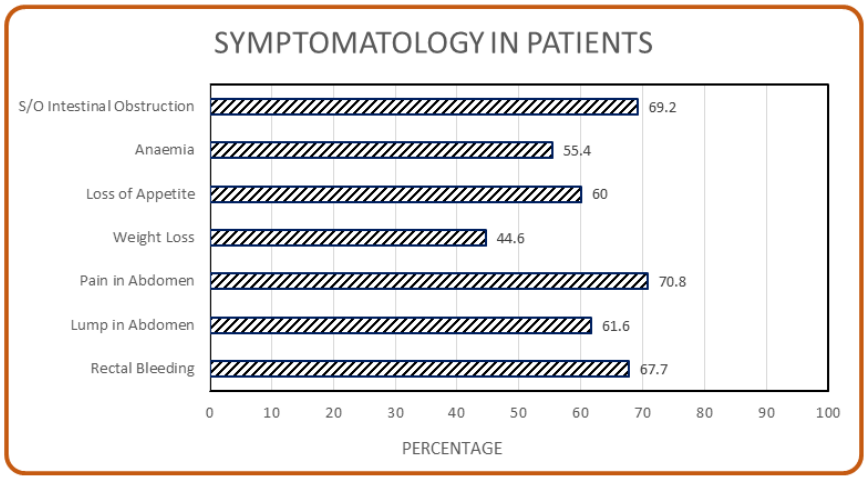
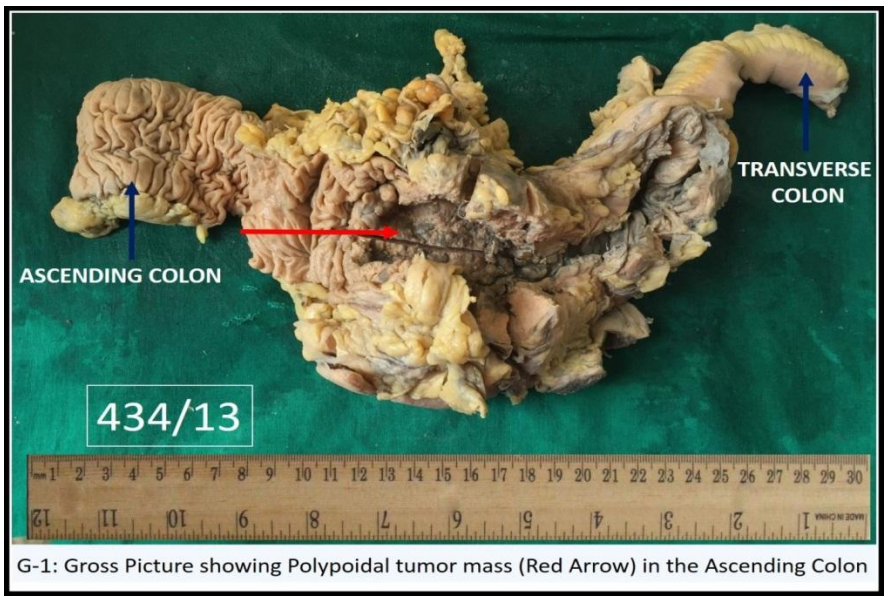
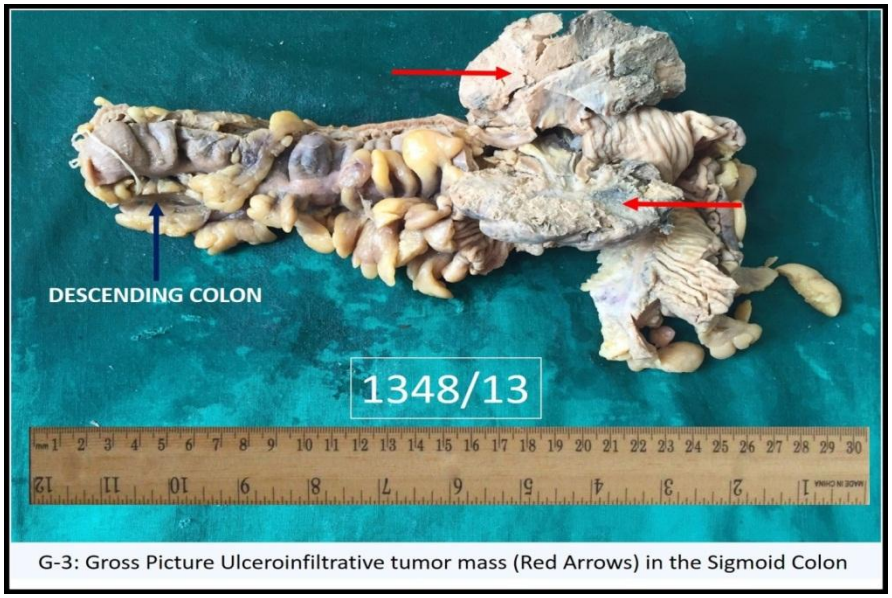


Fig-3:



G-1: Gross Picture showing Polypoidal tumor mass (Red Arrow) in the Ascending Colon

Fig-4:



G-3: Gross Picture Ulceroinfiltrative tumor mass (Red Arrows) in the Sigmoid Colon

Fig-5:

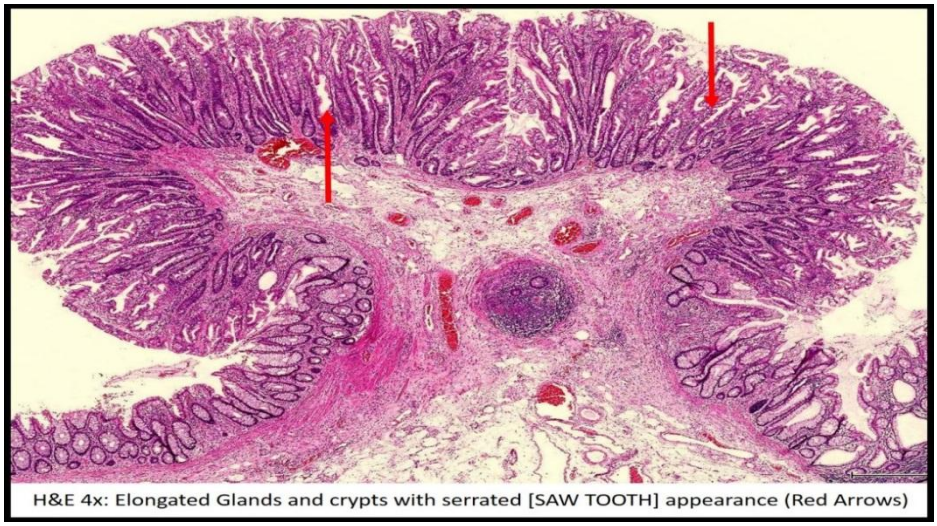


Fig-6: Hyperplastic Polyp - Rectum

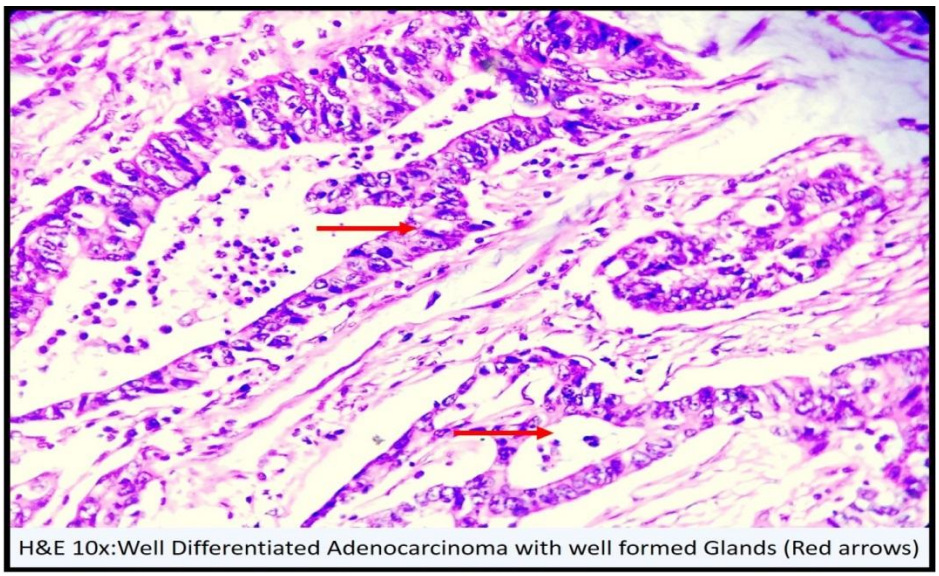


Fig-7: Well Differentiated Adenocarcinoma - Caecum

DISCUSSION

The colon including the rectum are the most common host of primary neoplasm in the body. Majority of these lesions are adenocarcinoma. The present study was undertaken to study neoplastic lesions in the large intestine for the period of twenty two months. Sixty five cases were included in the study and they were evaluated to study the incidence in the relation of age, sex, site and various histological patterns. Majority of cases were Colorectal Adenocarcinoma. In our study 40 cases were adenocarcinomas with an incidence of (61.5%). Maximum number of cases belonged to 50-59 years of age group. Youngest case was 20 year old and oldest case was 83 year old. Goligher suggested that the commonest age group of 60-69 years [8]. Mohsin-ul-Rassol *et al*., [9] reported the age group of 50-59 years and these findings are consistent with our study. Incidence of CRC was more common on males (57%) than in the females (43%). Considering adenocarcinoma incidence was higher in males (62.1%) than in females (60.7%) with the ratio of 1.03:1. The findings are consistent with Silverberg [14] who reported the rough incidence of 1:1. Mohsin-ul-Rassol *et al*., [9] reported the incidence of 1.3:1. Most common presenting symptom was pain in abdomen (70.8%) followed by intestinal obstruction (69.2%) and rectal bleeding (67.7%). These symptoms are in the agreement with other studies. Two cases of benign epithelial lesions were noted and both of them were in females and in the age group of 40-59 years. Most common location of CRC was found to be in the rectum (47.7%) followed by sigmoid colon (15.4%) [9]. Similar findings was reported by Fenn *et al*., Goligher and Bouchier and Mohsin-ul-Rassol *et al*., who found that more than half of the cases were found in the rectum [9-11]. Considering colon and rectal cancers separately incidence of rectal cancers were more common in females. Regarding the macroscopic type of growth Ulceroproliferative type of growth is the most common

(44.4%) followed by ulceroinfiltrative type (37.8%). Also, the Ulceroproliferative type of growth dominates the right colon while the Ulceroinfiltrative type of growth dominates the left colon. Similar findings were reported by Fenn *et al*., Goligher and Bouchier [9-11]. Most of the CRC are moderately differentiated (53.0%). This fining was not in the favour of Duke and Qizilbash [12, 13]. They reported the most common differentiation as Well differentiated. Lymphatic invasion is the commonest followed by vascular and neural invasion. The primary tumor had equal distribution of the cases among T2 and T3 (42.5%) while the least common primary tumor stage is T4b (5%). In majority of the cases the lymph node status was N0 (65%), which means that majority if the cases were without lymph node involvement. When lymph nodes are involved, the most common status is N2a (10%). Most common TNM stage in this study is Stage-I (40%) followed by Stage-II (30%), while stage IIC and IVB was not found in any of the case. Most common DUKE stage in this study is Stage-A (41%) followed by Stage-B (33.3%) [11, 12]. Most common MAC stage in this study is Stage-B2 (33.3%) followed by Stage-B1 (30.8%). Among other malignant epithelial lesions mucinous adenocarcinomas predominated (24.6%). One case of each Signet ring cell carcinoma, Squamous cell carcinoma, Gastrointestinal stromal tumor and Non-Hodgkin's lymphoma were found. But as these cases are very few, no specific conclusion could be withdrawn. Three cases of tumor like lesions were found namely juvenile polyp and hyperplastic polyp. Again, the cases were very few and hence no specific conclusion was formed.

CONCLUSION

From the present study it can be concluded that the malignant lesions are more common than the benign lesions. The age and sex prevalence, as well as histopathological characteristics, are similar to that reported in the rest of India and world. Colonic carcinoma is seen with increasing frequency in young adults, so any person with vague abdominal pain, bowel symptoms, iron deficiency anemia should undergo proper evaluation as early as possible.

REFERENCES

1. Robbins, S. L., Cotran, R. S., & Turner, J. R. (2012). The Gastrointestinal tract. Pathologic basis of disease, 8th ed. Haryana: Elsevier, 763-832.
2. Van der Schouw, Y. T., Verbeek, A. L. M., Wobbes, T., Segers, M. F. G., & Thomas, C. M. G. (1992). Comparison of four serum tumour markers in the diagnosis of colorectal carcinoma. *British journal of cancer*, *66*(1), 148.
3. National cancer registry program 1981-2001: An overview Indian council of medical research.
4. Park, K. (2012). Textbook of Preventive and social medicine, 19th ed. Bhanot, 231-643.
5. Mohsin, U. R., Basharat, M., Riyaz, U. S., Sajad, H., Zubaida, R., & Parveen, S. (2014). Histopathological study of neoplastic lesions of large intestine in Kashmir valley-India. *International journal of Research in medical sciences*, 3:1097-1100.
6. Jusaawala, D. J., & Gangadharan, P. (1973). Epidemiology of cancer in indian subcontinent. *Ind Journal of Cancer*; 10.
7. Nacopoulou, L., Azaris, P., Papacharalampous, N., & Davaris, P. (1981). Prognostic significance of histologic host response in cancer of the large bowel. *Cancer*, *47*(5), 930-936.
8. Goligher, J. C., Duthie, H. L., & Nixon, H. H. (1984). *Surgery of the anus, rectum and colon*, 5th ed. (p. 246). London: Bailliere Tindall.
9. Rasool, M. U., Mubeen, B., Hamid, S., Rasool, Z., Shah, P., & Shah, O. J. (2017). Histopathological study of neoplastic lesions of large intestine in Kashmir Valley, India. *International Journal of Research in Medical Sciences*, *2*(3), 1097-1100.
10. Fenn, L., & Nora, H. (1968). Carcinoma of the large bowel-Advances in proctology.
11. Bouchier, I. A. (Ed.). (1984). *Textbook of gastroenterology*. Baillière Tindall.
12. Dukes, C. E. (1932). The classification of cancer of the rectum. *The Journal of Pathology and Bacteriology*, *35*(3), 323-332.
13. Qizilbash, A. H. (1982). Pathologic studies in colorectal cancer. A guide to the surgical pathology examination of colorectal specimens and review of features of prognostic significance. *Pathology annual*, *17*, 1-46.
14. Silverberg, E. (1981). Cancer statistics, 1981. *CA: a cancer journal for clinicians*, *31*(1), 13.