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Histopathological Pattern of Colorectal Tumour – A Hospital Based Study

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ABSTRACT

Introduction:Colorectal carcinoma is a disease of global distribution, however having a commendable identity in the developed western countries. The risk factors like diet, obesity and lack of physical activities are ascribed to the development and progression of the disease. With the economic development, changing lifestyle and increased longevity, India is also expected to witness an increase burden in the disease. **Aim and objective:** To identify the histopathological pattern of all tumours of the colorectum according to site and differentiation. **Materials and method**: It was a hospital based cross-sectional study conducted in Fakhruddin Ali Ahmed Medical College and Hospital, Barpeta, Assam during the period of 1st Aug 2013 - 31st July 2014.The participants enrolled were selected after performing biopsy examination of the suspected cases. All those confirmed by biopsy regardless of age and sex were included in the study. During this period a total of 50 cases were taken into consideration purposively.**Results**: A preference of malignant variety of disease was found (70%) amongst those enrolled with male predominance of 1: 0.4 of all colorectal tumors. Also a significant magnitude of 77% of malignant tumors sufferers were males . When it comes to benign disease, both the sexes showed an equal preference (50%).Most common site of involvement was found to be rectum (52%), followed by sigmoid colon (20%) and descending colon (12%) respectively. Ascending colon and caecum comprised of 6% of cases, and transverse colon 4 % cases. **Conclusion**: A significant increase in colorectal carcinoma was observed among mid age population exhibiting an increasing trend of disease with the age beginning from the childhood. Regarding the site, the disease was found in rectum amongst the majority which is in contrast with the developed part of the world regarding where colon is the most common site.

KEYWORDS

Introduction

Colorectal malignancies vary in their magnitude, being one of the most frequent and life-threatening diseases throughout the world and a recognized cause of mortality due to all causes in Western world[1]. Rated as the second most common malignancy and rectal carcinoma topping the chart in western hemisphere, the disease is positioned amongst the top ten causes of gastrointestinal cancer related mortality according to SEER data in USA[2,3]Although burden of the disease is relatively low in India as compared to the Western countries the pattern of disease shows similarity of rectal cancer outnumbering colonic cancer[4].

Most of these disorders can be attributed to old age and lifestyle with only a small number of cases ascribed to underlying genetic causes. Other offending factors include diet, obesity smoking and lack of physical activities[5,6].With economic development and changing lifestyle inthe country there is every reason to believe in increment of colorectal tumours in near future. Other reasons were increase in the percentage of the elderly people, especially due to advancement in medical facilities.

Aim and objective:

To identify the histopathological pattern of all tumours of the colorectum according to site and differentiation.

Materials and method

The present study was a hospital based cross-sectional study wherein all the clinically suspected cases of colorectal tumor admitted in Assam Medical College and Hospital, Dibrugarh, during the period of 1st Aug 2008- 31st July 2009 were taken into consideration. Out of these only those confirmed by biopsy examination were later enrolled.The limitation of age and sex was removed and all the eligible participants were selected. During this perioda total of 50 cases were taken into consideration purposively.**Study design:** The study is a hospital based cross-sectional one. The participants were subjected to proper history taking followed by clinical examination, relevant investigations and histopathological examination using Haematoxylin & Eosin staining procedure. **Analysis:** the data so obtained was entered into Microsoft excel spreadsheet and subjected to statistical analysis performed manually.

Results

Of all the cases enrolled in the study most (70%) were found to be suffering from a malignant disease and the predilection of the disease is seen more amongst the males with a ratio of 1:0.4 for all colorectal tumors and about 77% of malignant tumors of all were seen amongst males. When it comes to benign disease, both the sexes showed an equal preference (50%).

The findings dictate that the colorectal tumors were more common in the 3rd to 4th decade of life. It was also observed that none of the participant below 20 years of age suffered from malignancy whereas all those above 50 were positive for a malignant disease.

Table no. 1 Showing the overall age incidence of all cases

Age group (in years)	Benign		Malignant		Total	
	No.	%	No.	(%)	No.	(%)
0—10	4	8(27)	0	0(0)	4	8
11—20	2	4(13)	0	0(0)	2	4
21—30	3	6(20)	4	8(11)	7	14
31—40	3	6(20)	13	26(37)	16	32
41—50	3	6(20)	7	14(21)	10	20
51—60	0	0(0)	5	10(14)	5	10
61—70	0	0(0)	6	12(17)	6	12
	15	30(100)	35	70(100)	50	100

NB: Figure in parenthesis shows column wise percentage
χ^2=14.841 d.f= 3 p=0.002

Adenocarcinoma was the commonest tumour (50%) and when subjected to histopathology, moderately differentiated variety forms the major group (72%) followed by well differentiated (20%) and poorly differentiated (8%) respectively. Variants of adenocarcinoma like mucinous (14%), papillary (4%) were also encountered. The other variant of tumors were adenomatous polyps (20%). Rare types were also found in the study like malignant melanoma (2%). It has been observed that there was an increase in malignant cases with the increasing age and the association was found significant stastically (***p< 0.05).***

Table no. 2 Showing the histopathological pattern of tumours

Types	Number of cases	Percentage(%)
Adenomatous polyps	10	20
Inflammatory polyp	5	10
Adenocarcinoma:	25	50
Typical adenocarcinoma	7	14
Mucinous	2	4
Papillary	1	2
Malignant melanoma		
TOTAL	50	100%

Most of these tumors were located at rectum (52%), followed by sigmoid colon (20%) and descending colon (12%) respectively. Ascending colon(6%), caecum (6%), and transverse colon (4 %)accounts for rest ofthe cases.

Table no. 3 Showing the site distribution of colorectal tumours

Site	Number of cases (N=50)	Percentage (%)
Rectum	26	52
Sigmoid-colon	10	20
Descending-colon	6	12
Transverse-colon	2	4
Ascending-colon	3	6
Caecum	3	6
Total	50	100

Discussion

Of all the tumors occurring in the alimentary tract those derived from epithelium are considered to be most frequently detected cancers. Amongst all the gut tumours majority remained localized in the large intestine and rectal region. Contrast to the situation observed in western countries were the prevalence of the disease is believed to be less common, developing countries showed a lower prevalence. However, recent studies showed an increasing trend even in these countries as well.

Our study which involved 50 cases of colorectalcarcinoma admitted in the six surgical units of the Department of Surgery, showed a preponderance of the disease amongst males and also an increasing trend of disease was observed with the increasing age. The current study adds to our knowledge of the variation of the histopathological pattern and the site of lesion of colorectal tumors.Majority of the cases were found out to be malignant as reported in other study conducted in different part of the country. In a prior study concerned with the detection of colorectal carcinoma it was observed that the most common histopathological type of lesions detected were the adenocarcinomas and increasing age was held a clear risk factor of the occurrence of the disease[7].The site of lesion was found to be rectum preferably in current setting which is found to in contrast to the western world[8,9]. The other study however showed an interesting relationship of disease with the age citing the lesions being more commoner amongst younger age group(<50yrs) which is in concordance with the current study[10,11]. Another study done in a similar setting also supports with the earlier age of presentation of disease in contrast to the western world blaming existing conditions like low socioeconomic status, low fat diet and scanty meat intake as the possible risk factors[12].

Possible limitation of the current study includes non-enrollment of people >70 years, which could be explained by the pattern of population distribution of the study area. Other shortcomings were the limited number sample and a short study period however was an attempt to uncover the pattern of distribution of the third most common malignancy in the region, a bigger sample size with a community- based approach will be helpful in establishing the validity of the findings.

Conclusion

There has been a significant increase in colorectal carcinoma in mid age population which showed an increasing trend with the age beginning from the childhood. A diverse pattern of disease was observed in the present settings where the majority of the lesions were from rectal region which is in contrast with the developed part of the world where the documented most common site is colon. Further studies are required to evaluate the causes of these observations and identify potential preventive and early detection strategies.

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