Original Research Article

A prospective observational study of colorectal cancer in a tertiary care hospital in north India

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Abstract

Introduction: Globally, colorectal cancers are the third most common cancers contributing 8.9% of all cancers in both males and females.Although Incidence of rectal malignanciesvaries widely, developing countries have reported lower rates, particularly in Africa and Asia. **Materials and Methods:** The study was conducted in a tertiary care hospital in North India from March 2020- February 2021.40patients provisionally diagnosed as having rectal malignancies either clinically or radiologically were includedin the study to examineepidemiological and clinical characteristics of colorectal patientssuch as age, gender, personal history, histopathological type/ stage and mode of treatment. **Results:** Maximum number of cases was reported in the age group 41-50 years i.e., 14 (35%)**.**Rectal malignancy was found in relatively young age group with a mean age of 49.5 years and males were prone than females in the ratio of 3:1.Bleeding per rectum was the most common complaint followed by altered bowel habits.Majority of cases reported history of smoking and alcohol intake. Vegetarians had lower incidence in comparison to those on mixed diet. 48% were moderately differentiated adenocarcinomas followed by24% cases which were well differentiated adenocarcinomas. Palpable rectal growth was found in 80% of patients.Maximum number ofpatients presented in early stage 30 (75%) followed by locally advanced stage 6 (15%) and metastasis stage 4 (10%) and abdominoperineal resection was the most commonly performed surgery. **Conclusion:** CRC in our institution is more often observed in younger individuals than what is reported infrom other parts of the country. Also, further studies with larger sample size are required to understand the role of other local factors like diet and personal habits in this region. A high index of suspicion and measures promoting early detection among young adults should be encouraged.

Keywords: Colorectal cancers, pain abdomen, loss of appetite, Chest X-ray.

Introduction

Cancer has complicated aetiology and the risk factors of cancer are deep-rooted in genetics and environment. Cancer is the sixth leading cause of death worldwide.Lung cancer is the most common cancer worldwide followed by colorectal cancers at the third place. Colorectal cancers(CRC) are also a leading cause of cancer related deaths, contributing 8.9% of all cancers in both males and females.Its incidence varies widely with higher incidence rates in North America, Australia and Europe. Developing countries have lower rates; particularly Africa and Asia[1].

Carcinoma of the colon and rectum is a relatively uncommon malignancy in India when compared with the western world[2]. The age standardized rates of colorectal cancer in India have been estimated to be 4.2 and 3.2/100,000 for males and females, respectively, compared to 35.3 and 25.7, respectively, in the USA[3]. CRC usually originates in the glandular and epithelial cells of the bowel. Colorectal cancer is generally a disease affecting individuals 50 years of age or older.Age-specific incidence of colorectal cancer in the United States appears to rise steadily from the second to sixth decade of life[4]. Adenocarcinoma is an unusual disease in patients under 40 years of age, and generally presents as advanced disease. It has been estimated that between 2 and 3% of colorectal cancers occur in patients younger than the age of 40 years. Men have proportionately higher incidence of rectal cancer than women[5].

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Prevention and early detection are key factors in controlling and curing colorectal cancer. Timely treatment can often lead to encouraging outcomes.This study was undertaken to study characteristics of colorectal cancer patients attending a tertiary care hospital in north India such as age, gender, personal history, histopathological type/ stage and mode of treatment. Although exact incidence rate cannot be estimated by hospital-based studies, the information would be useful in showing patterns of malignancies in our region.A better understanding of characteristics of CRC, the environmental, genetic and other risk factors,can facilitateeffective prevention and treatment of this deadly neoplasm.

Materials and methods

Study design

A prospective observational study.

Study location

Department of Radiotherapy, Govt Medical College, Jammu.

Study Duration

March 2020 to February 2021.

The total sample size was 40 cases. Patients provisionally diagnosed as having rectal malignancies either clinically or radiologically were included in this study. Written consents were taken from all of them. Patients were interviewed using a semi structured pre designed questionnairewith sections eliciting information on personal, demographic, clinical, lab reports etc.Information was sought from the patient or his attendant/ relative. The questionnaire was designed in local language and took 5-10 minutes to complete.

The presenting symptoms were recorded from all the included patients. A detailed past history, family history and personal history were also recorded. A detailed general and systemic examination was done followed by routine investigations like Complete Blood Count, Viral Markers, Blood Urea Serum Creatinine, Random Blood Sugar, Blood grouping and typing, Ultra Sound abdomen, Chest X-ray,

Colonoscopy and biopsy. After confirmation of diagnosis, CECT Abdomen was done to stage the disease. For stage 1 and stage 2 surgeries were planned. For locally advanced lesions neo adjuvant chemoradiation was planned and palliative treatment was offered for metastatic disease.

Inclusion Criteria

All patients with provisional diagnosis as rectal malignancies attending Department of Radiotherapy, Govt Medical College, Jammu and patients above 18years.

Exclusion Criteria

Patients below 18 years and patients with bleeding from rectum due to benign polyps, benign ulcers, inflammatory bowel disease, diverticulosis.

Statistical Analysis

Data analysis was done by using MS excel. Data was presented in the form of frequencies and percentages using tables and graphs.

Results

Table 1 showed that out of 40 Rectal malignancy cases, maximum number of cases was reported in the age group 41-50 years i.e. 14 (35%) followed by 31-40 years 10 (25%). Rectal malignancy was found in a relatively younger age group with a mean age of 49.58 years. Table 2 showed that males 29(72.5%) were more prone to rectal malignancy than females 11 (27.5%).

Among 40 Rectal malignancy cases, 28 (76%) presented with bleeding rectum followed by 16 (40%) with altered bowel habits, 9 (24%) with pain abdomen, 6 (16%) with Obstruction, 5 (12%) with loss of appetite, and 5 (12%) with weight loss. In our study, bleeding per rectum was the most common complaint with which rectal malignancy patients presented.

Table 1: Age Distribution

S.No	Age Group (years)	Total	Percentage
1	18-30	2	5%
2	31-40	10	25%
3	41-50	14	35%
4	51-60	7	17.5%
5	61-70	5	12.5%
6	Above 70	2	5%

Table 2: Sex wise distribution

S.No	Gender	Number	Percentage
1	Male	29	72.5%
2	Female	11	27.5%

Table 3depicts the personal history details of 40 rectal malignancy cases. Highest number of cases were reported amongcurrent/ past smokers. Vegetarians had lower incidence in comparison to those on mixed diet. Table 4 depicted the examination findings of rectalmalignancy cases. The results of 40 histological picture rectal malignancy cases revealed that, 24% cases were well differentiated adenocarcinomas, 48% were moderately differentiated adenocarcinomas, 16% were poorly differentiated adenocarcinomas and 12% were signet ring cell carcinomas. The results of the present study also showed that, maximum number of Rectal malignancy patients was in early stage 30 (75%) followed by locally advanced stage 6 (15%) and metastasis stage 4 (10%).

Table 3: Personal History

S.No	Personal Habits	Number	Percentage
1	Mixed diet	31	77.5%
2	Vegetarian diet	9	22.5%
3	BMI>30	28	70%
4	Smoking	32	80%
5	Alcohol	28	70%

Table 4: Examination Findings of Rectal Malignancy Cases

S.No	Examination findings	N (%)
1	Rectal malignancy	30 (75%)
2	locally advanced stage	6 (15%)
3	metastasis stage	4 (10%)

Table 5: Mode of treatment for Colorectal cancer

S.No	Examination findings	N (%)
1	Anterior resection	10 (25%)
2	Abdominoperineal resection	16 (40%)
3	Loop colostomy	5(12.5%)
4	Neoadjuvant chemoradiation	5 (12.5%)
5	Palliative therapy	4 (10%)

As depicted in the Table-5 it was observed that among 40 Rectal malignancy cases, 25% underwent anterior resection, 40% underwent abdomino-perineal resection (APR), 12.5% loop colostomy, 12.5% neoadjuvant chemoradiation, 10% palliative therapy. Of the 8 patients who were referred to radiotherapy in view of locally advanced disease for neoadjuvant chemoradiation, 2 patients were in follow up. After thorough investigations, APR was done for these two patients. Similarly, one patient came for follow up after loop colostomy. APR was done for this patient after appropriate investigations.

Discussion

While studying age factor as one of the demographic variables, the current study showed that majority of the cases were reported in the age group varying between 41-50 years (35%) and themean age was 49.58 years.

Similar results were obtained by Sudharshan et al In his study of colorectal cancer in young adults in a tertiary care hospital in Chhattisgarh, Raipur with a median age of 43 years[6].

According to our study sex distribution of Rectal malignancy was 72.5% in males and 27.5% in females which is in line with the global trends.

There is slightly higher male ratio compared to results obtained by Rasool et al and Ferlay et al Bleeding rectum was the most common presentation. Compared to other studies, incidence of bleeding per rectum is much higher in our study. In the present study it was seen that personal habits also plays an important role in the development of colorectal cancer which includes mainly mixed diet in 31 (82%), and smoking in 32 (80%), and alcohol consumption in 28 (70%) which was similar to the results of previous studies[7].

On general and systemic examination of the current study showed maximum were reported from Pallor in 30 (60%) and Palpable per rectal growth in 40(80%) which was similar to findings of Minardi et al. in the present study,histological picture of 40 Rectal malignancy cases, revealed that moderately differentiated adenocarcinoma were most common which is in agreement with reports of Sudharshan et al. and Minardi et al[8]. The results also showed 76% cases presented with early stage of disease similar to study by Anneke Schroen.

Varied treatment modalities in our study subjects were 10 (25%) underwent anterior resection, 16 (02%) underwent abdomino-perineal resection, (5) 12.5% underwent Loop colostomy, (5) 12.5% underwent neoadjuvant chemotherapy, 4 (10%) underwent Palliative therapy[9]. Loop colostomy was done in 16% of obstructive cases. Of the 8 patients who were referred to radiotherapy in view of locally advanced disease for neoadjuvant chemoradiation, 2 patients were came for follow up. After thorough investigations APR was done for these two patients. Similarly, one patient came for follow up after loop colostomy[10]. APR was done for this patient after appropriate investigations. These reports were similar to Anneke Schroen study. Historically, the gold standard operation for rectal cancer has been the abdominoperineal resection (APR), performed using blunt dissection. Approximately 80% of all patients with low rectal cancer (i.e. 0-5 cm

from the anal verge) have an APE to ensure an adequate distal margin.

Conclusion

In our study Rectal malignancy was found in relatively young age group with a mean age of 49.5 years and males were prone than females. Bleeding per rectum was the most frequent presenting complaint. Therefore, advocacy for early screening of young adults especially those with family history of colorectal cancers and bleeding per rectum along andhigh- risk screeningwith viral markers should be done. Awareness camps for behavioral changes like abstinence from alcohol and smoking, dietary modifications, physical activity etc. should be encouraged. Furthermore, more studies with larger sample size are required for better understanding and management of the disease.

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