

Clinicopathological Patterns in Colorectal Carcinoma in Central India: A Prospective Observational Study

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Abstract

Original Research Article

Colorectal cancer constitutes a major public health issue globally with an estimated 1.2 million new cancer cases and over 630,000 cancer deaths per year, almost 8% of all cancer deaths. Colorectal cancer screening programs increase the detection of tumors at earlier stages and reduce colorectal cancer incidence and mortality. Median age at diagnosis was 54.5 (19–85) years. Incidence was relatively more in males, with M:F ratio of 1.7:1. (Male- 32, Female – 18). 80% cases were left sided (sigmoid and rectum). 48% were Moderately Differentiated Adenocarcinoma. . Most common clinical presentation among the patients was Bleeding PR (46%), followed by abdominal pain (38%). So, any patient of middle and elderly age group who is presenting with bleeding PR and altered bowel habits should be investigated thoroughly with per rectal, proctoscopic or sigmoidoscopic examination.

Keywords: Colorectal cancer, rectal bleed, abdominal pain, adenocarcinoma, Clinicopathological.

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INTRODUCTION

Colorectal cancer is a malignant neoplasm arising from the lining of the mucosa of the colon and rectum. It develops by a multistep process can be influenced by hereditary or genetic and environmental or acquired factors. Colorectal cancer constitutes a major public health issue globally with an estimated 1.2 million new cancer cases and over 630,000 cancer deaths per year, almost 8% of all cancer deaths [1, 2]. It is the fourth most common cancer in men and the third most common in women worldwide [2]. Compared to the western world, the incidence rates of colorectal cancer are low in India; but apart from geographical variations, the incidences are rising rapidly in India [3].

These geographic differences appear to be attributable to differences in dietary and environmental exposures that are imposed upon a background of genetically determined susceptibility [4]. However, despite this variation, the molecular characteristics remain similar throughout the world [5, 6]. The different pathways of colorectal carcinogenesis includes chromosomal instability, microsatellite instability

(MSI) and CpG island methylation with overlap between these pathways.

Prognosis as well as management strategies differ in these two groups of CRC; therefore immunohistochemical and molecular testing are now routinely recommended for those patients meeting the clinical and histologic criteria [7-9]. Unfortunately in this part of the world these molecular markers are not routinely performed due to limited resources. On the other hand, surrogate clinic pathologic features are also not widely studied. Therefore we aimed to evaluate clinicopathologic features of CRC in our population so that protocols could be developed to stratify patients requiring further biomarkers in order to be characterized into one of these two groups.

Colorectal cancer is one of the cancers that can be prevented by secondary prevention, which can be achieved by screening tests that can detect pre-neoplastic lesions and early cancer. Colorectal cancer screening programs increase the detection of tumors at earlier stages and reduce colorectal cancer incidence and mortality [10].

EXPERIMENTAL SECTION/MATERIAL AND METHODS

Study design: Prospective Observational study.

Study period: 2 years (from July 2020 to September 2022).

Study center: Department of General Surgery, Gandhi Medical College and Associated Hospital, Bhopal.

Study group: All patients attending the outpatient clinic with provisional diagnosis of large bowel neoplasm.

Sample size: 50 (patients falling into the inclusion criteria attending Hamidiya Hospital, Bhopal Surgery OPD from July 2020 to September 2022 were study participants).

Inclusion Criteria: Patients having symptoms of large bowel neoplasm and histopathology suggestive of large bowel neoplasm.

Exclusion Criteria: Pathological confirmation of the diagnosis was absent, patients who lost in the follow up. Patients not giving consent for study.

The study was conducted at Gandhi Medical College and Hamidiya Hospital, Bhopal, India from July 2020 to September 2022. Ethical approval to conduct the study was sought from Institutional ethic review committee before the commencement of the study.

A total of 50 patients presenting in the surgical OPD with the complaint of large bowel neoplasm which came out to be histopathologically proven neoplasm were included in the study.

Patient information sheet was provided to them and after explaining an informed written consent from

the attendants of all patients fulfilling the inclusion criteria was taken in a local language. History from the patient regarding primary symptoms, span of disease, progress of the disease, any primary surgery, visits after primary surgery, general health of the patient, aggravating or relieving factors if any, and condition of the disease during follow up was taken and recorded in the pretested proforma. The details of indication for admission, basic vitals were recorded in all registered patients. Treatment given during hospitalization, course of stay and special procedures done were recorded. Patients and their attendants were regularly called on follow up and their follow up advice and further plans and success or failure of the treatment provided were noted carefully in the pretested proforma.

The examination included inspection and Per Rectal examination in Sims position.

All of the lumps or growth underwent a FNAC or core needle biopsy for confirmation of the clinical diagnosis made.

The collected data were transformed into variables, coded and entered in Microsoft Excel. Data were analyzed and statistically evaluated using Epiinfo™ using CDC.

RESULTS

Median age at diagnosis was 54.5 (19–85) years. Incidence was relatively more in males, with M:F ratio of 1.7:1. (Male- 32, Female – 18). 80% cases were left sided (sigmoid and rectum). 48% were Moderately Differentiated Adenocarcinoma followed by Well Differentiated Adenocarcinoma 26% cases. Most of the patients presented with symptom duration less than 6 months. Most common clinical presentation among the patients was Bleeding PR (46%), followed by abdominal pain (38%). Most of the neoplasm were located in Rectum (40%), followed by Sigmoid Colon (20%) & Recto-Sigmoid (20%).

Variable		Frequency
1. Age	Median <50 >50	
2. Gender	Male Female	
3. Duration of Symptoms	<6 Months 6-12 Months >12 Months	
4. Symptom	Bleeding per rectum Abdominal pain Weight loss Constipation	46% 38%
5. Tumor location	Rectum Recto Sigmoid Transverse Colon Ileo Caecum Ascending Colon Descending Colon	20 20 4 2 2 2

HISTOLOGICAL TYPE OF NEOPLASM

Most common Histological type of neoplasm found to be Moderately Differentiated Adenocarcinoma

(48%) followed by Well Differentiated Adenocarcinoma (26%).

S. No	HISTOLOGICAL TYPE OF NEOPLASM	FREQUENCY
1.	Moderately Differentiating Adenocarcinoma	24
2.	Well Differentiating Adenocarcinoma	13
3.	Mucinous Adenocarcinoma	7
4.	Signet Ring Cell Carcinoma	3
5.	Lymphoma	2
6.	Papillary Cystadenocarcinoma	1

DISCUSSION

The peak age of presentation in this study was in the age range 55-64 years (38%) which coincides with a retrospective study by Abdalla *et al.*, (2007) and Irabor *et al.*, (2014). In the United States, from 2003-2007, the median age at diagnosis was 70 years. Another study by Cronin KA *et al.*, and Amersi F *et al.*, observed the incidence over 50 times higher in people aged 60-79 than in people under 40 [11- 15].

Globally, incidence rates are considerably higher in males than in females (Siegel *et al.*, 2012) [16]. This has been attributed to the higher adoption of certain risk behaviors associated with colorectal cancer such as: smoking, heavy alcohol consumption and obesity in men (Center *et al.*, 2009a; Missaoui *et al.*, 2010). In a Study by Bray F *et al.*, across all age groups and nations, males are approximately 1.5 times more likely to develop Colorectal carcinoma than females, and mortality is approximately 25% higher in males than females. In present study we found that majority of patients presented to us were males (64%), while females were 36% with Male:Female 1.7:1, which is consistent with above mentioned studies.

In a study by (Dakubo *et al.*, 2010a) in Accra, Ghana, bleeding per rectum was the commonest symptom which concurs with studies in other developing countries (Yawe *et al.*, 2007) which coincides with our study where most common presentation of large bowel neoplasm was Bleeding per rectum (46%) [17, 18].

A systematic review by Graham *et al.*, who found that the major anatomical site of Colorectal carcinoma in sub saharan Africa was the rectum (in 46% of cases), followed by the caecum (17%) and our study also revealed almost similar results with major anatomical site for large bowel neoplasm was Rectum (40%) followed by sigmoid colon (20%) and Recto sigmoid (20%) [19].

Adenocarcinoma was the most common histological type (88%) with moderately differentiated tumours accounting for (48%) of the cases. These findings are in agreement with studies by (Missaoui *et al.*, 2010; Chalya *et al.*, 2013a) who reported similar histopathological patterns [20, 21].

In the present study, the majority of patients presented late with advanced stage of cancer which is in conjugation with other studies in developing countries. Late presentation in our study may be attributed to lack of awareness of the disease, lack of accessibility to healthcare facilities, low standard of education and lack of screening programs in our region.

CONCLUSION

The clinico-pathological patterns and presentations of large bowel neoplasm in our setting are similar to that of most of the developing countries. These aspects include predominance of rectal cancers, high incidence in the elderly people and delayed presentation of the disease in an advanced stage. Peculiar to our setting was the predominance of males, majority with symptom of bleeding PR and moderately differentiated adenocarcinomas. Higher proportion of patients tend to ignore the symptoms and present in more advanced stage of neoplasm. Some highlight the significance of health education to create awareness among communities through different media in order to increase care seeking behaviour for improved clinical outcome. To conclude, any patient of middle and elderly age group who presenting with bleeding PR and altered bowel habits should be investigated thoroughly with per rectal, proctoscopic or sigmoidoscopic examination. Further research should be pursued to identify the risk factors of large bowel neoplasm in our setting especially the genetic and environmental risk factors, so that we can intervene at early stages.

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