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Original Research Article

A clinical study involving anatomical distribution, pathological patterns and differentiation degrees in population with small bowel tumor

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ABSTRACT

Background: Occurrence of tumor of small bowel is very rare but the burden is in growing state in both more and less economically countries because of consumption of tobacco chewing by youngsters.
Methods: These studies include diagnosis and treatment of patients reported at tertiary care center of each districts of Vidarbha region and nearby districts for a schedule of six years.
Results: Data refers to female predilection with male to female ratio of 0.75:1. The mean age of incidence for men and women recorded were 35+/-20.23 and 57+/-17.91 years respectively. Pain in abdomen was recorded as primary sign in 92.86% cases along with change in bowel habits in 85.71%. Anemia found was related to loss of weight and appetite. Malena and diarrhea were also significant in 65.29 and 14.95% of patients along with presence of mucus in stool in one patient. Pallor and palpable mass in abdomen were characteristic in 42.86% and 14.29% cases. Bowel wall thickening in 71.4% and bowel mass in 28.6% were examined by computer tomography. Intra-abdominal lymphadenopathy along with bowel wall thickening and bowel mass were noticed in one patient. Liver secondaries were seen in 3 patients (21.43%). Ileum was most susceptible site of tumor with development of adenocarcinoma malignancy.
Conclusions: Improvement in socioeconomic background, literacy and awareness regarding causative agents helps to control percentage of incidence.

Keywords: Lymphadenopathy, Malena, Small bowel, Tumor

INTRODUCTION

The prevalence of cancer is expected to grow worldwide due to the growth and aging of the population, particularly in less developed countries, in which about 82% of the world's population resides. This is largely because of the younger age structure, immaturity of the tobacco epidemic and competing causes of death, such as infection.[1] Though small intestine cover up 75% of total length of gastrointestinal tract, but risk of development of malignancy to this part is very less, approximately 2-3% of total malignancies of gastrointestinal tract reported in small intestine.[2-4] This lesser susceptibility and higher immunity comprised due to less mucosal irritation, fastest movement of small intestine and less bacterial content than colon.[5] Consumption of benzo(o)pyrene in food and high level of IgA expression with lymphoid tissue also protect small bowel from abnormal growth of cells.[5,6] Observations revealed in Europe gave 3500 new cases of incidence with mortality of 1100.[7] Increase in the risk of incidence is observed from last decades and more than half cases were associated with GI tract malignancy.[8] The

age adjusted incidence is 0.0001% with a prevalence of 0.6%.[9] Adenocarcinoma is the most commonly seen tumor in small bowel malignancy.[10] This study was carried out to understand the primary early diagnostic signs and symptoms. The main aim of the proposed work was to collect the information regarding the risk factor and causes so one can take the attempts to avoid the risk.

METHODS

Vidarbha region including some part of Andhra Pradesh and Madhya Pradesh were included in the study. Case study was carried at tertiary care centre of total of eleven districts for a period of 6years, from 1st January 2007 to 31st December 2013. Total of 14 people were noticed with malignancy of small bowel during the schedule of studied. Diagnostic protocol was preceded through collection of information about the age and sex of patients. History of the patient including life style related activities, dietary habits, family related history, history of peptic ulcer complaints, and information regarding symptoms, hemoglobin contents, was generated and compiled. Pathological and histological examinations were examined. Site of location of tumor, signs and symptoms and stage of reporting to the hospitals have been recorded. Diagnostic tools to diagnose the tumor and surgeries were performed.

All the variables from questionnaire were entered in Microsoft excel sheet and electronically transferred. Statistical data analysis was performed using SPSS software version 17.0 (SPSS, Inc, Chicago, IL). Continuous variables were summarized using mean, median, mode and standard deviation. P-values were computed for categorical variables using Chi-square (X^2) test and Fisher's exact test depending on the size of the variables. Multivariate logistic regression analysis was used to determine predictor variables that are associated with outcome. A P-value of less than 0.05 was considered to constitute a statistically significant difference.

RESULTS

Age and gender wise distribution in the patients suffering with small bowel neoplasm was recorded while maintaining the patient file and are represented the Table 1. At the tertiary care center in different district, 14 patients had reported suffering with carcinoma of small intestine.

Data refers to female predilection in small bowel neoplasm with male to female ratio of 0.75:1. These included six males and remaining female one. The peak incidence was observed in the 4th and 6th decade of life. The youngest patient was found to be 3years of age and the oldest patient was recorded at 65years of age. The age range was 3-65years with a mean age of 47.57years±17.91. The mean age of incidence for men and women recorded were 35±20.23 and 57±17.91years respectively.

Study related to the signs and symptoms were recorded and are represented in Table 2. The most common symptom was pain in abdomen which was experienced by 13 patients. This was followed by change in bowel habits which was recorded in 12 patients. History of loss of weight and appetite was obtained from 5 patients and 12 patients respectively. 9 patients gave history of diarrhea while 6 patients each gave history of melena. Two patients presented with complaints of lump in the abdomen while 8 patients had nausea and 7 patients had vomiting. Only 1 patient presented with complaint of passing mucus with stools.

Table 1: Age wise and gender wise distribution of carcinoma in small intestine.

Age group (yrs)	Gender				Total	
	Male		Female			
	n	%	n	%	n	%
Upto 10 yrs	1	7.14	0	0.00	1	7.14
21-30 yrs	1	7.14	0	0.00	1	7.14
31-40 yrs	1	7.14	0	0.00	1	7.14
41-50 yrs	2	14.29	2	14.29	4	28.57
51-60 yrs	0	0.00	3	21.43	3	21.43
61-70 yrs	1	7.14	3	21.43	4	28.57
Total	6	42.86	8	57.14	14	100

Table 2: Symptomatology of patients of carcinoma of small intestine.

Presenting symptoms	No of patients (n)	Percentage (%)
Pain in abdomen	13	92.86
Change in bowel habit	12	85.71
Mucus in stools	1	7.14
Diarrhea	9	64.29
Malena	6	42.86
Lump in abdomen	2	14.29
Vomiting	7	50.00
Nausea	8	57.14
Loss of appetite	12	85.71
Loss of weight	5	35.71

The clinical examination confirmed the presence of pallor and palpable mass in the abdomen in 6 patients and 2 patients respectively. 2 patients each had mild, moderate and severe anemia. USG abdomen indicated bowel wall thickening in 10 patients and bowel mass in 4 patients. Computer tomography of abdomen showed bowel mass in 9 patients, bowel wall thickening with intra-abdominal lymphadenopathy and bowel mass with intra-abdominal lymphadenopathy in one patient each. Liver secondaries were seen in 3 patients.

Site of development of neoplasm had been studied. Malignant tumors in the ileum were found in 10 patients, whereas 2 patients each had malignant tumors in the duodenum and jejunum. Resection and anastomosis with adequate margins were attempted for patients having

jejunal and ileal malignancy while for malignant tumors of the duodenum Whipple's operation was performed. On histopathological examinations, adenocarcinoma was diagnosed in 10 patients while GIST was found in 3 patients and only one patient was diagnosed with non-Hodgkin's lymphoma. The most common stage of presentation was stage 1 and stage 2B with 4 patients each, followed by stage 2A and stage 3B with 3 patients each.

Table 3: Anatomical site of distribution in carcinoma small intestine.

Anatomical sites	No. of patients	%
Duodenum	2	14.28
Jejunum	2	14.28
Ileum	10	71.42
Total	14	100

DISCUSSION

Small bowel neoplasms are a rare gastrointestinal tract malignancy compared to the malignant tumors of the large bowel. There is a difference in age range of incidence of carcinoma of small bowel reported by different literature. For example, Miles RM et al, reported age range of 4-91years, Mittal VK et al, found it to be 12-87years whereas Freund H et al, gave the age range as 3-72years.[11-13] The present study reported the incidence of cases in the age range 3-65years. Zollinger Jr RM et al, found the sex ratio to be 1.4/1, Treadwell TA et al, gave sex ratio of 1.3/1 whereas Miles RM et al, found sex ratio to be around 1.1/1.[11,14,15] These values are nearly comparable with higher percentage towards male candidates only. However, in the present study the sex ratio is 0.75/1 indicating a female predilection. The most common symptom of a small bowel tumor is abdominal pain, which is present in 44 to 90 percent of patients, and may be considered as significant diagnostic symptoms at earlier stage. In the present study, the pain in abdomen and change in bowel habits were experienced by majority of patients. These symptoms may be considered as preliminary diagnostic parameters. Loss of weight and appetite is associated with anemia. Diarrhea, melena complaints of lump in the abdomen, nausea and vomiting. Only 1 patient (7.14%) presented with complaint of passing mucus with stools. In the present study 2 patients (14.28%) had malignant lesion in the duodenum and jejunum. Ileum malignancy was diagnosed in 10 patients (71.42%) out of 14. Adenocarcinoma was found to be the common tumor in most of cases.

CONCLUSION

The causative factor for the tumor development may be because of diverse life structure of peoples of respective territory. Change in diverse life habits, supports to overcome the susceptibility of community towards malignancy.

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