

A Cross Sectional Assessment of the Proportion of Colonic Carcinoma in Cases Presenting with Acute Intestinal Obstruction

Nitish Kumar

Senior Resident, Department of General Surgery, ICARE Institute of Medical Sciences and Research and Dr. Bidhan Chandra Roy Hospital, Haldia, West Bengal, India

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Corresponding author: Dr. Nitish Kumar

Conflict of interest: Nil

Abstract

Aim: To find the proportion of colonic carcinoma in cases presenting as acute intestinal obstruction.

Methodology: The study was a cross sectional study conducted in patients who attended the surgery casualty/outpatient department of the Department of General Surgery, ICARE Institute of Medical Sciences and Research and Dr. Bidhan Chandra Roy Hospital, Haldia, West Bengal, India with acute intestinal obstruction. It was conducted for a period one year. The patients presented with acute onset of vomiting, constipation and abdominal distension were taken into study. Diagnosis of intestinal obstruction was made based on clinical examination, history, image evidence in x ray and ultrasonogram. The diagnosis of colonic carcinoma was based on follow up of all patients by contrast enhanced CT abdomen, biopsy following laparotomy and CEA levels. Data was coded and entered in MS excel spreadsheet and Statistical package for social sciences (SPSS) for windows were used for analysis.

Results: In this study, 100 patients were enrolled having intestinal obstruction. Out of which, 30% cases had carcinoma colon. The age of the participants ranged from 18 to 90 years. The mean (SD) of the participants was 48.37 (19.32) years. The average age of patients diagnosed with carcinoma colon was 55.85 years. Majority of the participants (89%) were having non vegetarian diet. In total (33%) patients had history of previous laparotomy. The most common diagnosis was obstructive hernia (31%), followed by adhesion obstruction (23%) and Carcinoma colon (16%). There was higher prevalence of Carcinoma Colon among females compared to males (20.6% vs 13.6%) which was statistically significant with p value of 0.05.

Conclusion: There is a need for better screening and evaluation programs specifically aimed at detecting colon cancer at early stages. This implies more frequent colonoscopic evaluation for the high-risk population. With improved education of physicians resulting in effective and appropriate implementation of screening colonoscopy guidelines, and with improved technology, equipment, and training, this preventable, lethal disease should be virtually eradicated.

Keywords: Bowel obstruction, carcinoma, colonoscopy.

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Introduction

Intestinal obstruction is one of the common acute abdominal emergencies that accounts for 20% of all admissions with acute abdominal pain in surgical practice [1]. The most frequent etiological factor is post operative adhesions in developed countries and strangulating herniae in developing countries [2]. Decades ago the hernia was described as the first cause of intestinal obstruction [3]. Intestinal obstruction may be classified into two types, dynamic and adynamic [4]. Adynamic obstruction is due to the paralysed bowel without any medical cause [5]. The resulting nausea, vomiting, pain and dehydration usually require in patient hospitalization [6].

Malignant large bowel obstruction is a clinical presentation associated with a significant likelihood of colorectal carcinoma. Markogiannakis et al [7] found that colorectal carcinoma was one of the top three causes of intestinal obstruction (13.4%) among 150 patients who presented with intestinal obstruction.

Colorectal carcinoma is one of the most widespread malignancies worldwide. Over 15% of colorectal cancers will present as acute colonic perforation or obstruction despite cancer screening programs and routine endoscopy [8, 9]. In 2012, colorectal carcinoma became the third most common cancer globally, with nearly 1.4 million new cases diagnosed [10]. Colorectal cancers may be detected early through asymptomatic screening tests or as a result of a diagnostic workup for symptomatic disease.

A crucial problem in management of acute intestinal obstruction is differentiating whether there is actual or impending bowel ischemia and whether there is a need for emergency surgery [11]. The time interval before operation must be a critical problem for acute intestinal obstruction

because prolonged conservative therapy might be harmful and potentially lethal. On the other hand, too radical option of operation will aggravate the burden on patients [12]. The objective of this study is to find the proportion of colonic carcinoma in cases presenting as acute intestinal obstruction in a tertiary health care center over a period of one year and also to determine the other prominent etiological factors in cases presenting with acute intestinal obstruction.

Materials and Methods

The study was a cross sectional study conducted in patients who attended the surgery casualty/outpatient department of the Department of General Surgery ICARE Institute of Medical Sciences and Research and Dr.Bidhan Chandra Roy Hospital, Haldia, West Bengal, India with acute intestinal obstruction. It was conducted for a period one year

Inclusion criteria:

The patients presented with acute onset of vomiting, constipation and abdominal distension were taken into study.

Exclusion criteria:

Patients who had improvement of suggestive symptoms, symptoms due to obstruction at the level of gastric outlet and a dynamic intestinal obstruction cases were excluded from the study.

Methodology

Diagnosis of intestinal obstruction was made based on clinical examination, history, image evidence in x ray and ultrasonogram. The diagnosis of colonic carcinoma was based on follow up of all patients by contrast enhanced CT abdomen, biopsy following laparotomy and CEA levels.

Statistical analysis

Data was coded and entered in MS excel spreadsheet and Statistical package for social sciences (SPSS) for windows were used for analysis.

Results:

In this study, 100 patients were enrolled having intestinal obstruction. Out of which, 30% cases had carcinoma colon. The

age of the participants ranged from 18 to 90 years. The mean (SD) of the participants was 48.37 (19.32) years. The average age of patients diagnosed with carcinoma colon was 55.85 years. Majority of the participants (89%) were having non vegetarian diet. In total (33%) patients had history of previous laparotomy.

Table 1: Demographic details and clinical history of study population

Variables	N
Gender	
Male	66
Female	34
Mean age (in years)	48.37 \pm 19.32
Diet	
Vegetarian	11
Non vegetarian	89
History of previous laparotomy	
Present	33
Absent	67

Table 2: Final diagnosis of study participants

Final diagnosis	N
Obstructed hernia	31
Adhesive obstruction	23
Carcinoma colon	16
Intestinal metastasis	2
Intussusception	6
Carcinoma rectum	5
Ileocaecal TB	5
Sigmoid volvulus	4
Appendicular malignancy	1
Malrotation	1
Pseudo obstruction	2
Lymphoma	2
Congenital bands	1
Acute appendicitis	1

The most common diagnosis was obstructive hernia (31%), followed by adhesion obstruction (23%) and Carcinoma colon (16%). There was higher

prevalence of Carcinoma Colon among females compared to males (20.6% vs 13.6%) which was statistically significant with p value of 0.05.

Table 3: Gender association of carcinoma colon

Variable	Final Diagnosis (n=100)		P value
	Other diagnosis (n=84)	Carcinoma colon (n=16)	
Gender			
Female (n=34)	27 (79.4)	7 (20.6)	0.05
Male (n=66)	57 (86.4)	9 (13.6)	

Discussion:

Acute and sub acute intestinal obstructions are common occurrences among patients with disseminated abdominal and pelvic malignancies. Malignant bowel obstruction (MBO) is estimated to occur in 10–28.4% of colorectal cancers and 5.5–42% of ovarian malignancies [13]. Overall, it is estimated to occur in 2% of all patients with advanced malignancy [14]. It represents a presentation of recurrence in some patients, and a progression of disease in others. Consequently, presentation with bowel obstruction has a significant impact upon both patients and their families [15].

Obstruction of the intestinal lumen develops slowly and often remains partial. The gastrointestinal symptoms caused by the obstructed intestine usually depend on the site of obstruction. A left-side lesion usually presents as an alteration in bowel habits and the passage of blood, while lesions on the right side usually present as anaemia and dull aching pain [16]. The most consistent symptom among patients presenting with acute intestinal obstruction is obstipation followed by abdominal distension. All patients who presented to the hospital in this study came with complaints of abdominal pain. This is similar to a study conducted by Jahangir Sarwar et al where 100% of the cases had pain abdomen as a presenting complaint [17]. Obstipation was a complaint in 80% of the patients in this study. This corroborates with the study finding by Khan et al (97%) [18].

The most common cause for intestinal obstruction in this study was obstructed inguinal hernia. This was followed by adhesive intestinal obstruction. On comparison, a study by McEntee et al showed adhesions as the most important

cause of intestinal obstruction in western population [3]. The higher incidence of obstructed hernia as the leading cause in developing countries could be due to absence of accessibility to surgeons in rural areas. This results in most of the asymptomatic hernias to be left untreated and ultimately becoming obstructed.

Yuan et al. [19] conducted a univariate analysis of prognostic factors for patients with colorectal cancer and found that the 3-year and 5-year survival rates for patients with intestinal obstruction were only 39 and 35%, respectively. However, further multivariate analysis found no association between intestinal obstruction status and survival. Rasool et al. [20] conducted a study on patients with a history of intestinal obstruction due to colorectal carcinoma over a period of 13 years in India. Only 13 patients survived after a period of five years, with a survival rate of 23.12%. The lower survival rate in that study, compared to our findings, may have been due to the small number of patients in their cohort. The prognosis was even worse among patients who presented with intestinal obstruction and advanced-stage cancer. Several studies have demonstrated that the survival period for such patients ranges from a few weeks to several months [21-23]. For instance, Chen et al. [23] studied the survival duration of

patients with stage IV colorectal cancer complicated with bowel obstruction. Among 381 patients who had been diagnosed with stage IV disease, 295 patients had intestinal obstruction. The mean survival time was 49.4 and 37.2 months for the non-obstruction and obstruction groups, respectively.[24]

Conclusion:

There is a need for better screening and evaluation programmes specifically aimed at detecting colon cancer at early stages. This implies more frequent colonoscopic evaluation for the high-risk population. With improved education of physicians resulting in effective and appropriate implementation of screening colonoscopy guidelines, and with improved technology, equipment, and training, this preventable, lethal disease should be virtually eradicated.

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