Original Research Article

Study the incidence of abdominal malignancies presenting as acute abdomen: an observational study

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Received: 21-04-2020 / Revised: 29-05-2020 / Accepted: 15-06-2020

Abstract

Background: Acute abdomen is one of the most common symptoms that bring a patient to an emergency department. An abdominal malignancy may be the cause of acute abdomen at least in a number of cases. The problem with this is the poorer outcome associated with it due to the lack of preoperative evaluation and preparation and also possible contamination that occurs in case of a perforation. This study aimed at studying the incidence of abdominal malignancies in the patients presenting as acute abdomen and the various presentations in which they present. **Materials and Methods**: The study was conducted in the Department of General Surgery Indira Gandhi Institute of Medical Sciences, Patna, Bihar India. This study was done during from March 2015 to July 2016.who required surgery for acute abdomen were taken for the study and the incidence of malignancy in these cases were statistically assessed. **Results:** Out of the 400 patients who were operated for non-traumatic acute abdomen 73 patients i.e. 18.25% were found to have intra-abdominal malignancy. Carcinoma colon was the commonest malignancy, 52.05%. Carcinoma stomach and rectum were the next most common malignancy. Commonest presentation was as a case of intestinal obstruction, 79.45% followed by perforation 23.28%. **Conclusions:** In the era were the incidence and early detection of abdominal malignancies are on a rise, a significant portion of these cases present with acute abdominal symptoms and the morbidity associated with such a presentation is of importance. Early detection of the disease by screening is the solution forthis.

Keywords: Abdominal malignancies, Incidence, Intestinal obstruction, Perforation.

Introduction

Abdominal pain is one of the most common reasons for an emergency department (ED) visit, accounting to about 5%–10% of all ED visits[1]. It poses a diagnostic challenge for the emergency physicians, as the causes are numerous. Most abdominal pain is benign in the adult population, as many as 10% of patients in the ED setting has a severe or life threatening cause or requires surgery.

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It poses a diagnostic challenge for the emergency physicians, as the causes are numerous, ranging from benign to life threatening conditions. Causes include gastrointestinal, urological and gynaecological among others.[2]

Despite extensive evaluation, a quarter of patients usually remained with a non-specific cause, but now with latest radiological imaging advances that number has decreased.[3] The elderly patients have atypical presentations with longer duration of pain at presentation.[4]Associated features such as vomiting, guarding and tachycardia were of diagnostic value, whereas other features were not very useful.[5]

Abdominal pain is a common complaint among paediatric patients arriving at the EDs worldwide. Abdominal pain may be a result of underlying traumatic or nontraumatic pathology.[6,7] Nontraumatic abdominal pain is associated with both medical and surgical conditions and these can range from a benign, self-limiting condition such as constipation to a life-threatening emergency such as appendicitis.[8-10]

It is the most common cause for non-trauma-related hospital admissions.[11,12] It poses a diagnostic challenge for the emergency physicians as the causes are numerous. It poses a diagnostic challenge for the emergency physicians as the causes are numerous, ranging from benign to life-threatening conditions. Causes include gastro-intestinal, urological, and gynaecological among others.[13] Malignanciese manating from intra-abdominal organs are often considered to be associated with abdominal pain and a proportion of these are diagnosed in Emergency department. To the best of our knowledge, not much of the studies have systematically focused on acute abdominal pain as a symptom preceding the detection of an intra-abdominal malignancy. With this study we try to analyze the presentation of cancer as acute abdominal emergencies into the emergency department and the incidence of malignancies among acute surgical abdominal emergencies.

Material and methods

The study was conducted in the Department of General Surgery Indira Gandhi Institute of Medical Sciences, Patna, and Bihar India. This study was done during from March 2015 to July 2016. Institutional ethical approval was obtained before conducting this study.

Inclusion criteria

All the patients who visited the casualty wing with acute abdominal emergencies requiring emergency laparotomy during this period in Indria Gandhi Institute of Medical Science, Patna, Bihar India were included in the study.

Exclusion criteria

Those who were not willing to give consent and those who were diagnosed with malignancy earlier were excluded from the study.

Sample selection

The sample size was calculated using a prior type of power analysis by G* Power Software Version 3.0.1.0 (Franz Faul, Universitat Kiel, Germany). The minimum sample size was calculated, following these input conditions: power of 0.80 and $P \leq 0.05$ and sample size arrived were 400 participants.

Methodology

Patients or their caretakers were interviewed in the casualty wing, after obtaining proper informed consent. Details were collected regarding the onset, type, duration and other details pertaining to the pain, details regarding abdominal distension, bleeding per rectum (PR), provisional diagnosis of treating surgeon, as well as follow up histopathology report (HPR) and final diagnosis.

Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 19 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages and means.

Results

Table 1: Age wise distribution

Age (in years)	Malignancy (%)
≤20	0
20-30	1 (1.36)
30-40	6 (8.21)
40-50	14(19.17)
50-60	3649.31
Above 60	1621.91
Total	73100

Table 2: Distribution of site involved

Final diagnosis	Malignancy (%)
CA appendix	3 (4.10)
CA colon	38 (52.05)
CA rectosigmoid	11 (15.06)
CA rectum	7 (9.58)
CA small bowel	3 (4.83)
CA stomach	10 (13.69)
Cholangio CA	1 (1.36)
Total	73 (100.0)

Table 3.Sex distribution of the study

Gender	N=400	Malignancy N=73
Male	250	41
Female	150	32

Table 4: Distribution of presenting symptoms

Presenting symptoms		Number (%)
History of abdominal pain		14 (19.17)
Abdominal tenderness		15 (20.54)
loss of weight		16 (21.91)
Abdominal distension	<2 days	15 (20.54)
	2-7 days	43 (58.90)
	>7 days	8(10.95)
Obstruction		58(79.45)
Perforation		17(23.28)
Vomiting		12 (16.43)
Constipation		13 (17.80)
Bowel sounds		4 (5.47)
Bleeding PR		16 (21.91)
Low grade pain		12(16.43)
Diarrhoea		9 (12.32)

Discussion

The incidence of malignancy among patients presenting to emergency department with acute abdominal emergency requiring laparotomy in our study was about 73(18.25%) In a study conducted by Muriche et al, about 20% of the malignancies had emergency presentation[14].In our study incidence of malignancy with emergency presentation among females is 32(21.33%) and among male is 41 (16.4%).Of the 73 malignancy patients only 7 patients were below the age of 40 years. Incidence of acute presentations of GI malignancy, especially colorectal carcinoma, was highest among the elderly age group. About 50% of malignancy diagnosed patients were more than 60 years. This is in accordance with the study conducted by Waldron et al in 1986, were 58% of malignancies occurred in patients of more than 70 years agegroup compared to 43 % in patients less than 70 years age group[5].

Out of the 73 malignancy patients only 7 patients were below the age of 40 years. Incidence of acute presentations of GI malignancy, especially colorectal carcinoma, was highest among the elderly age group. 52 (71.12 %) of the patients detected with malignancy were above 50 years.. This is in accordance with the study conducted by Waldron et al in 1986, were 58% of malignancies occurred in patients of more than 70 years age group compared to 43 % in patients less than 70 years age group[15].

Obstruction was the most common presentation of malignancy in our study constituting about obstruction (79.45%) probably because carcinoma colon was the most common histopathological diagnosis. According to the article published in the journal surgical clinics of North America, primary colorectal cancer causes 53% of acute large bowel obstruction requiringsurgery.[16]

Perforation was the 2nd most common presentation for malignancy in our study 17(23.28%) among 73 malignanciesdetected 10 (13.69%) were carcinoma stomach patients, all of whom presented with perforation. This is in agreement with the study conducted by Roviello et al in 2006 in Italy.[17]

Vijayakumar et al. showed 92% obstruction and 8% perforation in colon malignancy and 100% perforation in gastric malignancy.18 Small bowel tumours contributed to 3 (4.83%) of malignancies,i.e. 3 cases among 73 malignancies. All of them presented with acute intestinal obstruction, similar to the study in Kilpauk which showed 100% presentation by obstruction in small boweltumours.[18] In this study two cases of carcinoma appendix was detected. 4.10% case of appendicular abscess and the other as intestinal obstruction. Out of the two gall bladder perforations one turned out to be cholangiocarcinoma.

Conclusion

The incidence of malignancies in the general population is showing a rising trend. After analyzing this study one can conclude that, a substantial proportion of gastrointestinal malignancies are diagnosed through an emergency route, in a tertiary care center. Many patients without any tell-tale features of malignancy in the preoperative period were diagnosed with malignancy on the operating table. Acute presentations of GI malignancies are especially more in elderly age group. This needs to be kept in mind while managing an emergency room. There is growing need of further research work in the field of surgical oncological emergencies, so that efficient tackling of emergency oncological resections can be done. Focus to be given to screening programs to detect aggressive malignancies at an early date. Above all, rising incidence of malignancies to be kept in mind while managing emergency rooms, which will enable a medical officer to offer the best treatment regimen for the critically illpatients.

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Source of Support:Nil
Conflict of Interest: Nil