

Original Research Article

A COMPREHENSIVE STUDY ON GASTROINTESTINAL MALIGNANCIES PRESENTING AS ACUTE ABDOMINAL EMERGENCIES

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Received : 15/10/2023
Received in revised form : 26/11/2023
Accepted : 09/12/2023

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DOI: 10.5530/ijmedph.2023. 4.12

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2023; 13 (4); 55-58

ABSTRACT

Background: Gastrointestinal malignancies that manifest as acute abdominal emergencies pose a significant clinical challenge. Understanding their incidence, clinical presentations, and management is essential for improving patient outcomes.

Materials and Methods: This prospective observational study was conducted at King George Hospital over a two-year period, from August 2020 to July 2022. The study included 100 adult patients aged 18-85 years admitted with abdominal emergencies, such as perforations, intestinal obstruction, and peritonitis. Patients with malignancy confirmed by histopathological reports were included in the analysis.

Results: The study found that acute abdominal emergencies were most prevalent in the age groups of 36–45 and 46–55, with a higher occurrence in males (75%). Large bowel obstruction (30%) and gastric perforation (29%) were the predominant modes of presentation. Among the study population, 24% had malignancies, with a slightly higher incidence in males (58%) than females (42%). The most common site of malignancy was the colon (16 cases), followed by rectal malignancies (4 cases). Most malignancies presented with obstruction (86%) rather than perforation (14%). Causes of small bowel obstruction included ileal stricture (lymphoma), ileo-ileal intussusception, bowel gangrene, and other factors. Large bowel obstruction was primarily due to rectal carcinoma, colon carcinoma, sigmoid volvulus, and non-specific inflammation. Various demographic factors, including age, sex, and site of malignancy, influenced the presentation patterns.

Conclusion: This comprehensive study highlights the clinical significance of gastrointestinal malignancies presenting as acute abdominal emergencies. It provides insights into their incidence, clinical presentations, and demographic associations. The findings emphasize the importance of early recognition and prompt management of these emergencies to improve patient outcomes.

Keywords: Gastrointestinal malignancies, acute abdominal emergencies, incidence, clinical presentation, management, demographic characteristics, prognosis.

INTRODUCTION

Gastrointestinal malignancies encompass a diverse group of cancers that can manifest in various clinical presentations. Among these presentations, the occurrence of gastrointestinal malignancies as acute abdominal emergencies represents a

particularly challenging scenario for clinicians. Such emergencies may include perforations, intestinal obstructions, and peritonitis, all of which demand immediate intervention to mitigate potentially life-threatening consequences. Understanding the incidence, clinical characteristics, and management of these malignancies in the context of acute

abdominal emergencies is essential for optimizing patient care.

The incidence of gastrointestinal malignancies as acute abdominal emergencies has been a subject of growing concern in recent years. Several studies have reported an increase in the prevalence of gastrointestinal malignancies worldwide, with a notable impact on the emergency surgical setting.^[1,2] These malignancies may arise in various regions of the gastrointestinal tract, including the stomach, small intestine, colon, and rectum, each presenting distinct clinical challenges.^[3,4]

Furthermore, the clinical presentation of gastrointestinal malignancies in the context of acute abdominal emergencies can vary widely. Patients may present with symptoms ranging from sudden-onset abdominal pain and distention to signs of peritonitis.^[5,6] Accurate and timely diagnosis is complicated by the similarity of these symptoms to other non-malignant abdominal emergencies, making it crucial for clinicians to maintain a high index of suspicion.^[7]

Demographic factors, such as age, sex, ethnicity, and dietary patterns, have also been suggested to play a role in the development and presentation of gastrointestinal malignancies.^[8,9] A comprehensive understanding of these relationships is crucial for tailoring clinical approaches and improving patient outcomes.

In light of these considerations, this study aims to address the following objectives: (i) determine the incidence of gastrointestinal malignancies presenting as acute abdominal emergencies, (ii) identify common malignancies associated with acute abdominal emergencies, (iii) analyze the clinical presentation patterns of these malignancies, (iv) investigate the relationships between demographic characteristics and malignancy occurrence, (v) assess the management protocols employed, and (vi) evaluate the prognosis of patients with regard to perioperative mortality.

By exploring these objectives, this study seeks to contribute to the knowledge base surrounding gastrointestinal malignancies presenting as acute abdominal emergencies, ultimately enhancing the ability of clinicians to diagnose and manage these complex cases effectively.

MATERIAL AND METHODS

Study Design

This prospective observational study was conducted at King George Hospital over a two-year period, from August 2020 to July 2022, to investigate gastrointestinal malignancies presenting as acute abdominal emergencies.

Study Population

The study population consisted of all patients admitted to various surgical wards of King George Hospital between the specified study period (August 2020 to July 2022) with acute abdominal

emergencies. These emergencies included cases of perforations, intestinal obstructions, and peritonitis, whether localized or diffuse in nature.

Study Sample

A total of 100 adult patients between the ages of 18 to 85 years were included in the study. Patients meeting the following criteria were considered for inclusion:

- Adults aged 18 to 85 years
- Admitted for abdominal emergency surgery, including laparotomies, surgery for intestinal obstruction, peritonitis, and hemorrhage
- Histopathological reports suggestive of malignancy (30 cases)

Exclusion Criteria

Patients were excluded from the study if they met any of the following criteria

- Pediatric patients below the age of 18 years
- Cases involving traumatic abdominal emergencies
- Elective surgeries or patients previously worked up for suspected malignancies
- Acute appendicitis cases and those presenting with gastric outlet obstruction

Data Collection

Data collection was performed through a comprehensive review of patient records, including medical histories, surgical notes, histopathological reports, and laboratory findings. Demographic information, clinical presentation patterns, diagnostic methods, and management protocols were recorded for each patient.

Categorization of Study Group:

Patients were categorized based on age and sex, and the percentage distribution of patients in each category was calculated.

Analysis

Statistical analysis was performed using appropriate statistical software. Descriptive statistics, such as mean, median, and standard deviation, were used to summarize continuous variables, while categorical variables were summarized using frequencies and percentages. Comparative analyses were conducted to investigate relationships between demographic characteristics and malignancy occurrence.

Ethical Considerations

The study was conducted in accordance with ethical guidelines and obtained approval from the institutional ethics committee. Informed consent was obtained from all eligible participants or their legal representatives.

RESULTS

Demographic Characteristics (Table 1)

The study population encompassed a wide age range, with the highest number of patients falling within the age group of 36-45 years (29%). This was followed by the age group of 46-55 years (21%) and 56-65 years (24%). Patients aged 15-25 years comprised the smallest percentage at 8%. In terms

of sex distribution, males represented a significant majority, constituting 75% of the study population, while females made up the remaining 25%.

Modes of Presentation (Table 2):

The modes of presentation varied among patients with acute abdominal emergencies. Gastric perforation was the leading mode of presentation, observed in 29% of cases, highlighting the critical nature of gastric malignancies. Duodenal perforation (6%), jejunal perforation (3%), and ileal perforation (7%) were less frequent but still clinically significant. Additionally, appendicular perforation (5%) and caecal perforation (2%) were identified as modes of presentation. Small bowel obstruction was observed in 17% of cases, while large bowel obstruction was the most common mode of presentation, affecting 30% of patients. Gall bladder perforation, although less common, was noted in 2% of cases.

Incidence of Malignancy by Sex (Table 3)

The incidence of malignancy within the study population exhibited a notable sex disparity. Malignancies were more prevalent among males, accounting for 58% of all cases. Conversely, females constituted 42% of malignancy cases. This discrepancy suggests potential sex-related differences in susceptibility or risk factors for

gastrointestinal malignancies presenting as acute abdominal emergencies.

Incidence of Malignancy by Age Group (Table 4):

An analysis of malignancy incidence by age group revealed varying patterns. The youngest age group (15-25 years) exhibited a lower incidence of malignancy, with only 2 cases. In contrast, the 36-45 years age group had the highest incidence, with 8 cases. Malignancies were also observed in the 46-55 years (4 cases) and 56-65 years (8 cases) age groups. These findings indicate that the risk of gastrointestinal malignancies in acute abdominal emergencies may vary across age cohorts.

Site of Malignancy (Table 5):

The site distribution of malignancies demonstrated a predilection for colorectal locations. Colon malignancies accounted for the highest number of cases, representing 67% of all gastrointestinal malignancies observed in this study. Rectal malignancies followed, comprising 17% of cases. Additionally, single cases of malignancies were noted in the gastric, small bowel (ileum), and appendicular regions. These results underscore the prominence of colorectal malignancies as a key concern in the context of acute abdominal emergencies.

Table 1: Demographic Characteristics

Characteristic	Number of Patients	Percentage
Age Distribution		
15-25 years	8	8%
26-35 years	7	7%
36-45 years	29	29%
46-55 years	21	21%
56-65 years	24	24%
66-75 years	7	7%
76-85 years	4	4%
Sex Distribution		
Male	75	75%
Female	25	25%

Table 2: Modes of Presentation

Mode of Presentation	Number of Patients	Percentage
Gastric Perforation	29	29%
Duodenal Perforation	6	6%
Jejunal Perforation	3	3%
Ileal Perforation	7	7%
Appendicular Perforation	5	5%
Caecal Perforation	2	2%
Small Bowel Obstruction	17	17%
Large Bowel Obstruction	30	30%
Gall Bladder Perforation	2	2%

Table 3: Incidence of Malignancy by Sex

Sex	Number of Patients with Malignancy	Percentage of Malignancies
Male	14	58%
Female	10	42%

Table 4: Incidence of Malignancy by Age Group

Age Group	Number of Patients with Malignancy
15-25 years	2
36-45 years	8
46-55 years	4
56-65 years	8

Table 5: Site of Malignancy

Site of Malignancy	Number of Patients
Gastric	1
Small Bowel (Ileum)	1
Appendicular	1
Colon	16
Rectum	4

DISCUSSION

The findings of this study shed light on the complex landscape of gastrointestinal malignancies presenting as acute abdominal emergencies. Several key points emerge from the analysis of the data, including the incidence of malignancies, demographic associations, and clinical presentation patterns.

Incidence of Gastrointestinal Malignancies

The study revealed that 24% of patients admitted with acute abdominal emergencies had gastrointestinal malignancies confirmed through histopathological reports. This finding underscores the significance of considering malignancy as a potential cause in patients presenting with acute abdominal symptoms. While previous research has indicated an increasing global incidence of gastrointestinal cancers,^[1,2] our study specifically emphasizes the relevance of these malignancies in the context of acute emergencies.

Demographic Characteristics

Demographic factors such as age and sex played a notable role in the presentation of gastrointestinal malignancies. Age-wise, the highest incidence of acute abdominal emergencies occurred in the 36–45 and 46–55 age groups. These findings are consistent with the established trend of increasing cancer incidence with age.^[3] Furthermore, the study population was predominantly male (75%), aligning with previous research that suggests a higher prevalence of gastrointestinal malignancies in men.^[4] These demographic associations highlight the importance of tailored screening and diagnostic strategies, particularly for individuals in high-risk groups.

Clinical Presentation Patterns

The modes of presentation in our study varied, with large bowel obstruction (30%) and gastric perforation (29%) being the most common. These findings are in line with existing literature,^[5,6] indicating that malignancies in these regions of the gastrointestinal tract often lead to acute emergencies. Notably, while gastric perforation was relatively less common, it carried a high mortality risk. This emphasizes the need for early recognition and intervention in such cases.^[7]

Site of Malignancy

The most frequent site of malignancy was the colon (67% of gastrointestinal malignancies), followed by rectal malignancies (17%). This distribution is consistent with the known prevalence of colorectal cancers within the gastrointestinal tract.^[8] The predominance of colon malignancies further

underscores the importance of screening and early detection for colorectal cancer, as delayed diagnosis can lead to acute complications.

Limitations

Several limitations of this study should be acknowledged. Firstly, the exclusion of patients who did not undergo surgery for malignancy-related complications may have led to an underrepresentation of cases with malignancies that were initially managed medically. Additionally, the relatively short duration of the study limited the ability to conduct long-term follow-up, which could provide valuable insights into post-operative outcomes for these patients.

CONCLUSION

In conclusion, our study highlights the significance of gastrointestinal malignancies as potential causes of acute abdominal emergencies. Recognizing the demographic factors influencing presentation patterns and understanding the modes of presentation is crucial for early diagnosis and improved patient outcomes. These findings underscore the importance of continued research and awareness in the field of gastrointestinal oncology to enhance early detection and management strategies.

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