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**Original Research Article**

# Epidemiological and clinical patterns of presentation of surgical oncological emergencies of abdomen at a tertiary institution

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## ABSTRACT

**Background:** Oncological surgical emergencies of abdomen pose a typical problem for surgeons with respect to the choice of curative and palliative treatments and procedures in absence of opportunity for proper evaluation and support of multidisciplinary approach. For appropriate management, it is important to understand the epidemiological and clinical profile of this disease complex.
**Methods:** A prospective analysis of abdominal emergencies encountered in emergency surgery department was done over a period of two years at a single institution and the malignancies were studied with respect to the pattern of clinical presentation and epidemiological characteristics.
**Results:** At our centre, the incidence of intraabdominal oncological emergencies requiring surgery was found to be 6.56% of total emergent presentations excluding abdominal trauma cases. The overall mortality for study duration was 29% and the perioperative mortality within 30 days was 24%. Colonic malignancies (62%) and gastric malignancies (28%) were the most common to present as emergency. It was noted that small bowel (5%) and ovarian malignancy (5%) were not common. Perforation peritonitis was the only presentation as acute emergency in carcinoma stomach. In colonic malignancies, obstruction was the most common emergency presentation (92.5%) and perforation was an uncommon mode of presentation (7.5%).
**Conclusions:** Surgical intervention appears to be unavoidable in the situation of a malignancy presenting as an emergency case, despite the awareness that most of these patients are going to have a limited life expectancy. A high rate of perioperative mortality is observed in emergent presentations of oncological abdominal emergencies.

**Keywords:** Abdominal, Cancer, Emergencies, Epidemiological, Malignancies, Oncological, Surgical

## INTRODUCTION

Over the years the management of cancers has undergone vast changes. Improvements in technology, screening and diagnostic techniques permit an early identification and management of cancers. Despite recent advances, the presentation of a cancer as a surgical emergency is a common phenomenon and may be attributed to poor public awareness for early cancer symptoms, problems of healthcare access, inappropriate health seeking behaviour and lacunae at primary healthcare level.[1,2] These emergencies pose a typical problem for surgeons with respect to the choice of curative and palliative treatments in absence of opportunity for proper evaluation and support of multidisciplinary approach. For appropriate management it is important to understand the epidemiological profile of this disease complex. An oncological surgical emergency can be defined as an acute and potentially life threatening condition resulting from a malignancy or its treatment which requires emergency surgical intervention.[3] The extra abdominal emergencies are more common than the intraabdominal ones. Extra abdominal emergencies are commonly managed effectively with medical management alone.[4] A

surgical consultation is commonly required to deal with abdominal emergencies. This descriptive study was undertaken to understand the pattern of common clinical presentations and epidemiological characteristics for abdominal oncological emergencies at a 1000 bedded government hospital.

## METHODS

In this study a prospective analysis of abdominal emergencies encountered in emergency surgery department was done over a period of two years in a single institution. The malignancies were studied with respect to the pattern of clinical presentation and epidemiological characteristics.

The total number of abdominal emergencies in the study period was 320 (excluding abdominal trauma cases) out of which 21 cases were diagnosed to have malignancies and were taken for epidemiological analysis during the stipulated period. Patient records, operative notes and histopathology reports were reviewed. Postoperative morbidity and mortality in the immediate 30 days was recorded. All patients were followed up for hospitalizations for chemotherapy, radiotherapy or problems related to complications related to the malignancy.

## RESULTS

A total number of 21 cases were diagnosed to have malignancy during the study period (Table 1). The incidence of intraabdominal oncological emergencies was found to be 6.56% of total emergent presentations. The number of male patients was 15 and the number of female patients was 6 (ratio 2.5:1). All emergency patients with gastric malignancies were males (Figure 1). In case of colon malignancies, 62% were males and 38% Females (Figure 1). The age of patients ranged from 32 years to 70 years with mean age of manifestation being 51.86 years.

At our centre, colonic malignancies (62%) and Gastric malignancies (28%) were the most common to present as emergency (Figure 2). It was noted that small bowel (5%) and ovarian malignancy (5%) were not common. Perforation peritonitis was the only presentation as acute emergency in carcinoma stomach (Table 2). The perioperative mortality in perforation associated with gastric malignancy was 50% in our study. Amongst the colonic malignancies, the site was found to be sigmoid colon in 6 patients, caecum in 3 patients, rectum in 2 patients and 1 each for hepatic and splenic flexure of colon. Obstruction was the most common emergency presentation in colonic malignancies (92.5%) and perforation was an uncommon mode of presentation (7.5%) (Table 2). Mortality rate in colonic malignancies presenting as obstruction was found to be 23% in our study. Out of 12 cases of colonic malignancies presenting with obstruction, 11 were taken up for surgery. Among them, 8 had a resectable growth whereas 3 were unresectable. Amongst the resectable cases 3 underwent Hartmann's procedure and 5 underwent primary anastomosis. Early postoperative mortality for unresectable growth was 66 %.

**Table 1: Summary of data.**

| Variable | Data summary |
|---|---|
| Age | Age Range: 32 years - 70 years |
| | 31years - 40 years: 19% |
| | 41 years - 50 years: 28.6% |
| | 51 years - 60 years: 28.6% |
| | 61 years - 70 years: 23.8% |
| Sex | M: 71.4% |
| | F: 28.6% |
| Comorbidities | No comorbidities: 52.4% |
| | Medical comorbidities: 47.6% |
| Diagnosis | Colonic malignancy: 62% |
| | Gastric malignancy: 28% |
| | Small bowel malignancy: 5% |
| | Ovarian malignancy: 5% |
| Procedure intent | Curative: 56.5% |
| | Palliative: 43.5% |
| Outcome | Recovered well: 61.9% |
| | Recovered with complications: 9.5% |
| | Expired (within 30 days): 23.8% |
| | Expired (Total): 28.6% |

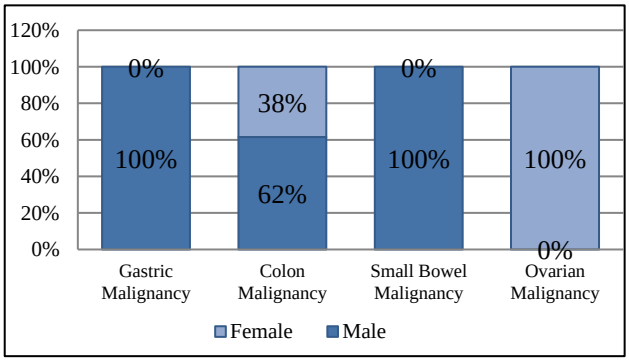


**Figure 1: Sex distribution.**

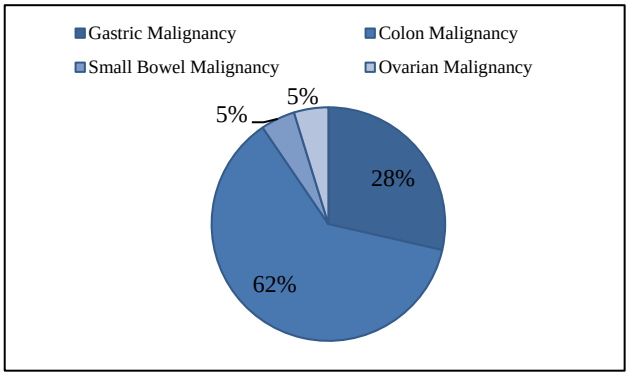


**Figure 2: Oncological emergencies by malignancy type.**

The management approach was with palliative intent in 43.5% cases and with curative intent in 56.5% cases which shows a significantly high proportion of advanced unresectable malignancies. The overall mortality for study duration was 29% and the perioperative mortality within 30 days was 24%. Septicaemia, septic shock, myocardial infarction and sudden cardiac arrest were the causes of mortality observed in this study.

**Table 2: Malignancy by type of clinical presentation.**

| Malignancy type | Peritonitis | Acute obstruction | Total cases |
|---|---|---|---|
| Gastric malignancy | 6 (100%) | 0 (0%) | 6 |
| Colon malignancy | 1 (7.7%) | 12 (92.3%) | 13 |
| Small bowel malignancy | 0 (0%) | 1 (100%) | 1 |
| Ovarian malignancy | 0 (0%) | 1 (100%) | 1 |
| **Total** | **7 (33.3%)** | **14 (66.7%)** | **21** |

## DISCUSSION

Oncological surgery emergencies present a big challenge to surgeons. These operations are not only difficult but also carry a high morbidity and mortality.[5] Various studies have reported a mortality ranging from 11.1% to 25.5%.[6,3] Our study reports a 30 day perioperative mortality of 24%. Most of the malignancies today are managed after a proper diagnostic workup and discussion in a multidisciplinary tumor board and then going ahead with the best possible treatment modality. But in an acute setting, the opportunity for a multidisciplinary discussion is often not available. Also, there are no clear guidelines of management available for management of these malignancies in acute scenarios. Common presentations of oncological abdominal emergencies are intestinal obstruction, hollow viscus perforation, bleeding, biliary obstruction and neutropenic enterocolitis.[4,6]

The most common surgical presentation is intestinal obstruction.[7] In this study the colon and gastric cancers were commonest to present with an incidence of 62% and 28% respectively. Other studies also reported colon (42%) and stomach (17.3%) as common cancers presenting as abdominal oncological emergencies.[6] Based on a large North Carolina (US) population study (N=27,644), colon was overall the most common GI cancer to present as emergency.[8] In acute setting we found a very high fraction of unresectable locally advanced disease (43.5%) which led to a resorting towards surgeries for palliative intent rather than curative intent. This may be attributed to silent progression of these malignancies to advanced stage, problems of healthcare access, inappropriate health seeking behaviour, lacunae at primary healthcare level and improved survival rates amongst cancer patients.

## CONCLUSION

Surgical intervention appears to be unavoidable in the situation of a malignancy presenting as an emergency case, despite of the awareness that most of these patients are going to have a limited life expectancy. A high rate of perioperative mortality is observed in emergent presentations of oncological abdominal emergencies. Overall intestinal obstruction and perforation peritonitis are two common clinical patterns of presentation in surgical oncological emergencies of abdomen. Colonic and gastric cancers form the major chunk of malignancies requiring emergency surgery.

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