AN ANALYSIS OF MALIGNANCIES PRESENTING AS ACUTE GENERAL SURGICAL EMERGENCIES

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ABSTRACT

BACKGROUND

Malignancies in the setting of acute general surgical emergencies are rare to present. The commonly presenting malignancies to the general surgeon in emergency conditions are perforation, obstruction, haemorrhage or urinary retention. Though their incidence when compared to benign conditions presenting with same clinical presentations are rare, they should never be neglected. The general surgeon must be aware of such presentations and hereby decide the management and follow up according to the malignancy he encounters on the operation theatre. The management should aim at radical procedures and regular follow up if needed with chemotherapy or radiotherapy and also should be well informed of the morbidity and mortality following intervention considering the malignancy grade, age of patient, duration of presentation and co-morbid conditions.

MATERIALS AND METHODS

In this study, we consider all patients taken up in emergency operative procedures, study their findings on operation theatre, correlate with their biopsy report for any malignancy and follow up during their immediate postop up to <30 days and also late post beyond the procedure and bring about the incidence, common modes of presentation, malignancies encountered, age and sex distribution and the perioperative morbidity and mortality rates of the those malignancies.

RESULTS

The incidence of malignancies presenting as acute abdominal emergencies in this study was found to be around 8.27%. The number of males who presented with such malignancies outnumbered females in a significant manner in the ratio 1.6:1. Among the malignancies, gastric (25%) and colonic malignancies (59.38%) were the most common. Perforation was the only presentation as acute emergency in carcinoma stomach. Incidence of malignancy in gastric perforation was 57.14% when compared to that reported by Emer Ergul et al that about 10-16% of all gastric perforations are caused by gastric carcinoma.[11] Perioperative mortality in gastric malignancy perforation was 50%, well within range of 0-82% reported in various studies.[5] Obstruction was the most common presentation in colonic malignancies (95%) and perforation was the only other mode of presentation (5%). Mortality rate in colonic malignancies presenting acutely was found to be 21.05%. Out of 10 patients who died in the perioperative period one had history of pulmonary TB, one had only DM, one had CAD alone, whereas six patients had both DM with CAD. Among all the co-morbid factors, the presence of cardiac disease appears to affect survival to the maximum.

CONCLUSION

The conclusion from this study is that every patient is a textbook and that it is impossible to rule out malignancy in any patient presenting in emergency merely by his/her age and that the general surgeon be aware and deal with the malignancy accordingly.

KEYWORDS

Adenocarcinoma, Obstruction, Perforation, Laparotomy, Malignancy, Biopsy.

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BACKGROUND

The study deals with malignancies encountered by us, as an emergency, in the Department of General Surgery, Government Royapettah Hospital and Kilpauk Medical College during the period between April 2014 and September 2014.

This study shows us the various malignancies that we have encountered in the study period, their pattern of distribution, modes of presentation and methods of management.

Acute abdominal pain is a term, which generally refers to previously undiagnosed pain that arises suddenly and is of less than 7 days, but usually less than 48 hours duration.[1] It may be caused by a great variety of intraperitoneal disorders, many of which call for surgical treatment and as well as by a range of extraperitoneal disorders, which typically do not call for surgical treatment.[2] The presence of abdominal pain for more than 6 hours is usually caused by disorders of surgical significance.[3]

True oncological emergencies[4] are rare and often do not require surgery such as Superior Vena Cava (SVC) syndrome, spinal cord compression and paraneoplastic syndromes. However, surgeons are often asked to consult on how to manage patients with malignancies who have complications from tumour progression or from cytotoxic therapies.

Aim

The study aims to identify the following-

- To know the incidence of malignancies in adult emergency surgery.
- To identify the most common malignancies in adult emergency surgery.
- To assess whether there is a difference between distribution of such malignancies between male and female patients.
- To assess the most common modes of manifestation in such malignancies.
- To know the prognosis of these patients when compared to benign causes with similar presentation.
- To know whether the presence of co-morbid factors affects survival rate.

MATERIALS AND METHODS

This study is a prospective analysis of malignancies encountered in emergency surgery from the period of April 2014 to September 2014 at Government Royapettah Hospital and Kilpauk Medical College Hospital in which 32 patients (22 male:10 female) were analysed.

Inclusion Criteria

- Adult patients (above the age of 12 years).
- Abdominal emergency surgery (surgery for laparotomies, intestinal obstruction, perforation peritonitis, haemorrhage).

Exclusion Criteria

- Paediatric cases (below the age of 12 years)
- Elective surgeries and patients who were previously worked up suspecting such malignancies.

Limitations

Being a study of malignancies in emergency surgery, this study gives a general idea of the incidence of only those cases that present with complications either resulting due to these malignancies or due to some other cause. Most patients with malignancies do not present with such problems. They are diagnosed rather with their classical features of presentation pertaining to the organ involved.

This study involves only the cases that primarily present with surgical complications, whereas there is another set of patients who are diagnosed with malignancies and are on treatment and develop complications due to the treatment or in the later course of the disease due to malnutrition or paraneoplastic syndromes or metastasis, which are not included.

Moreover, a greater subset of patients with medically treatable complications is not dealt with as the physician and the medical oncologist in our institution mainly treat these.

Due to a limited number of cases, statistical analysis could not be done.

Analysis of the Study

Based on the data collected from the emergency surgeries performed in Kilpauk Medical College Hospital and Government Royapettah Hospital combined for a period of about six months between April 2014 and September 2014, the following parameters were obtained;

- The total number of abdominal emergencies in the study period was 387 of which 22 were due to trauma.
- A total number of 32 cases were diagnosed to have malignancy and were taken up for analysis within the stipulated study period.
- The number of male patients was 22 and the number of female patients was 10; the male-female ratio being 2.20:1.
- The age of the patients ranged from 32 years to 69 years.
- The mean age of manifestation was 50.75 years.
- The median age of the selected study group was 52 years.

RESULTS

- The incidence of malignancies presenting as acute abdominal emergencies in this study was found to be around 8.27%.
- The number of males who presented with such malignancies outnumbered females in a significant manner in the ratio 1.6:1.
- Among the malignancies, gastric (25%) and colonic malignancies (59.38%) were the most common.
- Perforation was the only presentation as acute emergency in carcinoma stomach. Incidence of malignancy in gastric perforation was 57.14% when compared to that reported by Emer Ergul et al that about 10-16% of all gastric perforations are caused by gastric carcinoma.
- Perioperative mortality in gastric malignancy perforation was 50% well within range of 0-82% reported in various studies.
- Obstruction was the most common presentation in colonic malignancies (95%) and perforation was the only other mode of presentation (5%).
- Mortality rate in colonic malignancies presenting acutely was found to be 21.05%.

- Out of 10 patients who died in the perioperative period, one had history of pulmonary TB, one had only DM, one had CAD alone, whereas six patients had both DM with CAD. Among all the co-morbid factors, the presence of cardiac disease appears to affect survival to the maximum.

CONCLUSION

The conclusion from this study is that every patient is a textbook and that it is impossible to rule out malignancy in any patient presenting in emergency, merely by his/her age and that the general surgeon be aware and deal with the malignancy accordingly.

The various modes of presentation of malignancies are as follows-

	Peritonitis	Acute Intestinal Obstruction	Haemorrhage	Urinary OBS Truction
Total	9	20	1	2
Male	9	11	0	2
Female	0	9	1	0

Table 1

The various causes for laparotomies (excluding trauma) and the number of malignancies diagnosed among them were as follows-

	Gastric Perforation	Colonic Perforation	Small Bowel Obstruction	Colonic Obstruction	Others
Total	14	2	26	39	283
Malignancy	8	1	2	18	0
Incidence	0.57	0.5	0.077	0.46	0

Table 2

The commonest malignancies are described in the table below-

	Oesophageal Malignancy	Gastric Malignancy	Small Bowel Malignancy	Colonic Malignancy	Ovarian Malignancy	Carcinoma Penis	Carcinoma Prostate
Total	1	8	1	19	1	1	1
Male	0	8	1	11	0	1	1
Female	1	0	0	8	1	0	0

Table 3

One case of oesophageal malignancy referred to the institute for further management presented with massive haematemesis on the day of admission and could not be revived.

The incidence of complicated gastric malignancy is as under-

	Perforation	Obstruction/others
Male	8	0
Female	0	0
Total	8	0

Table 4

Only one case of small bowel obstruction in a 69-year-old male was found to harbour malignancy.

The incidence of complicated colonic malignancy is as under-

	Perforation	Obstruction/others
Total	1	18
Male	1	10
Female	0	8

Table 5

The age wise distribution of malignancies is described under this table-

Age in Years	Total	Male	Female
<40	5	2	3
40-59	20	13	7
>=60	7	7	0

Table 6

Description of age and sex distribution of colonic malignancy is described in the table-

	Male	Female
<40	2	2
40-59	6	6
>60	3	0
Total	11	8

Table 7

Mortality in these cases and the presence of co-morbid factors in the cases under study-

Co-Morbid Factors	Oesophageal Malignancy	Gastric Malignancy	Small Bowel Malignancy	Colonic Malignancy	Ovarian Malignancy	CA Penis	CA Prostate
DM	0	3	0	5	0	0	1
HT	0	2	0	1	0	0	0
CAD	0	4	0	3	0	0	1
Pt	0	2	0	1	0	0	1
CKD	0	0	0	1	0	0	1
Death <30 Days	1	4	0	4	0	0	1

Table 8

Perioperative mortality (<30 days postop).

Out of 10 patients, eight expired in the postoperative period after a major surgery, one could not be resuscitated from the shock at presentation and another could not tolerate per rectal decompression alone.

Based on the above data, the following were calculated-

Parameter	Overall Value	Value in Male	Value in Female
Incidence of malignancies	8.27%	5.68%	2.58%
Incidence of oesophageal malignancies	0.26%	0%	0.26%
Incidence of gastric malignancies	2.06%	2.06%	0%
Incidence small bowel malignancies	0.26%	0.26%	0%
Incidence of colonic malignancies	4.91%	2.84%	2.07%
Incidence of genitourinary malignancies	0.52%	0.52%	0%
Incidence of malignancies in gastric perforation	57.14%	57.14%	0%
Incidence of malignancies in colonic obstruction	46.15%	25.64%	20.51%
Incidence of malignancies in colonic perforation	50%	50%	0%
Perioperative mortality in gastric malignancy	50%	50%	0%
Perioperative mortality in colonic malignancy	21.05%	10.53%	10.53%

Table 9

DISCUSSION

The incidence of malignancies presenting in emergency are on the rise when compared to previous studies and clinical trials. The general surgeon must keep in mind their presentations in the acute setting and act according to the needs, its management, follow up and adjuvant therapy. Though intra-abdominal malignancies are the most encountered by the general surgeon, their management is of great challenge and wider aspect of knowledge with regards to the development of ideal management and adjuvant therapy is needed. Their clinical symptoms vary from frank haematemesis, acute abdomen to lower GI bleed, which needs attention and intervention.

The oesophageal malignancies presenting in the emergency are rare and their usual presentations are haematemesis, oesophageal perforation with mediastinitis and oesophageal obstruction. The management in the control of acute upper GI bleed usually consists of resuscitating the patients with crystalloids and blood followed by immediate upper GI scopy to identify the source of bleed and intervention by either cauterisation or laparotomy to arrest the site of bleed. In oesophageal obstruction, gastrostomy or feeding jejunostomy is the ideal procedure to maintain enteral nutrition as debulking the primary often leads to injury of vital structures around and mortality. In oesophageal perforation, an upper GI scopy confirms the site of perforation and a thoracotomy might be needed to repair the defect. In our setting, a case of oesophageal malignancy presented with upper GI bleed and hypovolaemic shock who expired in spite of resuscitative measures.

Gastric malignancies in the acute setting usually present with perforation, obstruction or haematemesis. Perforation peritonitis is the commonest presentation needing acute intervention for which live omental patch repairs to gastrojejunostomy and feeding jejunostomy have been found to temporary measures to alleviate the condition. The patient should undergo adjuvant procedures or therapy following the acute intervention to avoid further complications and spread of disease. In our hospital, all patients presenting with gastric perforation were treated with live omental patch repair following biopsy of the edges and considered adjuvant therapy and follow up. Morbidity and mortality are usually high as the tendency to uptake the patch is low in malignancy.

Small bowel malignancies presenting with obstruction or perforation are rare and needed complete surgical resection of the involved segment followed by imaging studies follow up and adjuvant therapy. In our setting, only one jejunal stricture presenting with intestinal obstruction was proved to be malignant and resection followed by primary anastomosis completely cured the patient from local as well as systemic disease. He is on regular follow up with imaging studies and doesn't need any adjuvant therapy at present.

In the outset of colonic malignancies, the cases present with perforation, obstruction or bleeding per rectum. Although, the bleeding per rectum is usually associated with chronic anaemia and needed a colonoscopic evaluation, the acute need for intervention with a laparotomy is proceeded with obstruction and perforation. Radical resection of the colonic segment followed by trial of primary anastomosis is the procedure of choice, followed by adjuvant therapy, a need for ostomy is warranted in cases of fecal soiling of the peritoneum or a perforation peritonitis and re-closure of the stoma at a later laparotomy. In our institution, only one colonic perforation at caecum due to obstructive dilation presented with malignancy, whereas 18 cases presented with obstruction alone. Each were managed with radical resection of the tumour with adequate margins and anastomosis or stoma done according to the clinical scenario. Adjuvant therapy and follow up were done and mortality were comparatively even when considered to benign conditions of colon presenting with obstruction or perforation.

Ovarian malignancies presenting with peritoneal deposits leading to obstruction was another case encountered in our emergency setting. Hysterectomy with bilateral salpingo-oophorectomy was done followed by biopsy of the peritoneal seedlings. The patient recovered well and is on follow up.

Genitourinary malignancies presenting with urinary retention are rare. In our institute, we came across two cases of malignancy causing acute urinary retention. Carcinoma penis who underwent total penectomy at a later date following suprapubic catheterisation recovered well, whereas the prostatic carcinoma who underwent interval prostatectomy succumbed to the radical procedure as well as his multiple co-morbidities.

The final outcome of this study was that malignancies can be managed appropriately according to the clinical scenario and their outcome prolonged with better follow up and adjuvant therapy provided to keep in mind, the morbidity and mortality rates, which are quite high to the procedures done when compared to benign conditions with complications.

SUMMARY OF FINDINGS

From the data mentioned earlier, the salient findings are made out-

- The incidence of malignancies presenting as acute abdominal emergencies in this study was found to be around 8.27%.
- The number of males who presented with such malignancies outnumbered females in a significant manner in the ratio 1.6:1. This suggests a strong tendency for males. Similar studies done elsewhere have not shown any definite male predisposition.
- It was noted the oesophageal, small bowel and urinary tract malignancies are rare to present as emergencies.
- Among the malignancies, gastric (25%) and colonic malignancies (59.38%) were the most common.
- Perforation was the only presentation as acute emergency in carcinoma stomach. Incidence of malignancy in gastric perforation was 57.14% when compared to that reported by Emer Ergul et al that about 10-16% of all gastric perforations are caused by gastric carcinoma.
- Perioperative mortality in gastric malignancy perforation was 50%, well within range of 0-82% reported in various studies.[5]
- Obstruction was the most common presentation in colonic malignancies (95%) and perforation was the only other mode of presentation (5%).
- Mortality rate in colonic malignancies presenting acutely was found to be 21.05%. It has been shown that non-resectional procedures lead to high mortality reaching 66%-72% in cases of diffuse peritonitis.[6] The only case with colonic perforation in our study expired on the first postoperative day.
- Gastric malignancies like gastric perforations were seen only in males, whereas colonic malignancies were more common in males than females in the ratio of 1.375:1.
- Out of 10 patients who died in the perioperative period, one had history of pulmonary TB, one had only DM, one had CAD alone, whereas six patients had both DM with CAD. Among all the co-morbid factors, the presence of cardiac disease appears to affect survival to the maximum.
- Similar studies do not exist for a satisfactory comparison. Other studies do not individually document incidence rates with reference to emergencies.

CONCLUSION

Though the number of cases encountered by the general surgeon is not many, these malignancies pose an interesting problem in management. The gastric and colonic malignancies form the major bulk of these malignancies. The gastric malignancies present with peritonitis and hence have a poor outcome and high mortality rate. The presence of co-morbid illness increases it further, whereas the colonic malignancy presenting with obstruction appears to have a better prognosis. Perforation of colon was found to be rare and invariably fatal as described in various studies. Men were found to be more common in presentation than women though we found no similar study to justify our finding. Finally, the presence of co-morbid factors greatly influences the outcome and cardiac disease seems to be the most important. Presence of peritonitis appears to have a major role in recovery both in terms of morbidity as well as mortality.

The conclusion from this study is that every patient is a textbook and that it is impossible to rule out malignancy in any patient, merely by his/her age.

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