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ORIGINAL ARTICLE

CLINICAL STUDY AND MANAGEMENT OF PERITONITIS SECONDARY TO GASTROINTESTINAL PERFORATION

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ABSTRACT: Perforation peritonitis is the most common surgical emergency in India. Peritonitis due to upper gastrointestinal tract perforation constitutes majority of these cases. Despite advances in surgical techniques, antimicrobial therapy and intensive care support, management of peritonitis continues to be highly demanding, difficult and complex. . In contrast to western countries where lower gastro-intestinal tract perforations predominate, upper gastro intestinal tract perforations constitute the majority of cases in India[1]. Earlier Rawlinson in the year 1727 was the first to give a clear description of the signs and symptom of gastric ulcer and peritonitis.[2] **MATERIALS AND METHODS:** All patients having GI perforation admitted in all surgical units of Basaweshwar Teaching and General Hospital, Gulbarga were considered for the study. A total of 50 cases were studied over a period of 18 months from Dec 2009 to May 2011.Data was entered in the proforma made for the study and analyzed **RESULTS &CONCLUSION:** Patient group more than 50yrs were the most commonly affected group and duodenal ulcer perforation (60%) was the most common. Males (92%) were affected more than females. Most common symptom was vomiting (68%). Guarding and rigidity were present in 90% patients. Laparotomy with closure of the perforation with omental patch is the commonest operative management for perforated peptic ulcer. The overall mortality was 4%.
KEYWORDS: - peritonitis, duodenal ulcer perforation, omental patch.

INTRODUCTION: Peritonitis due to gastro intestinal perforation is commonly encountered in surgical practice. The different modes of presentation of cases may be misleading the diagnosis of its origin. Peritonitis secondary to perforation of the gastro intestinal tract, a common occurrence in this country, requires emergency surgical intervention and is associated with significant morbidity and mortality rates. In case of peritonitis i.e. early surgery has got advent ages over the late surgery. Non-operative management is successful in patients identified to have a spontaneously sealed perforation proved by water soluble contrast gastroduodenograrn. Operative management consists of time honored practice of omental patch closure, but this can also be done by laparoscopic method.

OBJECTIVE OF THE STUDY: clinical study and management of peritonitis to gastrointestinal perforation.

MATERIALS AND METHODS: This study has been based on the analysis of 50 cases of gastro intestinal perforation admitted to BTGH, Gulbarga, from December 2009 to May 2011, patients (cases) fulfilling the criteria were randomly selected for the study. All went emergency laparotomy and the site of perforation, its pathological condition and the amount of peritoneal contamination, were determined. The procedures adopted in the management were omental patch closure, simple closure, resection anastomosis and loop ileostomy. Each patient was examined thoroughly, after

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taking a detailed history. The diagnosis and examination was made with history, clinic features and X-ray abdomen erect posture to support the diagnosis each case was studied at per the following proforma. The statistical test performed was Chi-square test.

RESULTS:

Age group (years)	Frequency	Percentage
20-29	15	30
30-39	5	10
40-49	10	20
>50	20	40
Total	**50**	**100**

Table 1: Distribution of sample by age

In this study most of the patients with gastro intestinal perforation were above the age of 50 years followed by the age group of 20-29 years group.

Gender	Frequency	Percentage
Male	46	92
Female	4	8
Total	**50**	**100**

Table 2: Distribution of sample by sex

In this study maximum number of patients was found to be males (92%) and the females constituted about 8%. The table given below shows percentage of male and female within sex.

Anatomical site involved	Frequency	Percent
Stomach	4	8
Duodenum	30	60
Jejunum	2	4
Ileum	14	28

Table 3: Anatomical sites of perforation

The commonest site involved in gastro intestinal perforation in this study was duodenal ulcer perforation (60%) followed by ileal perforation (28%).

Site of pain	Frequency	Percent
Diffuse	39	78
Epigastric	10	20

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Right hypochondriac	1	2.0
Total	**50**	**100**

Table 4: Distribution of the site of pain

Symptoms	Frequency	Percentage	Chi square	Significance
Vomiting	34	68	6.480	.011
Fever	27	54	.320	.572
Past history of pain	19	38	42.000	.000

Table 5: Distribution of symptoms

Vomiting is present in 34 cases and it is most commonly observed in patient presenting more than 2 days after the onset of symptoms. Most of the patients with the duodenal ulcer perforation the patient had previous history of abdominal pain suggestive of peptic ulcer disease.

Signs	Frequency	Percentage	Chi-square	Significance
DA	25	50	000	1.000(NA)
Dehy	35	70	8.000	.0005 (s)
G&R	45	90	32.000	.000(s)
OLD	37	74	11.520	.001(s)
FF	32	64	3.920	.048(s)
BS	22	44	.720	.396(NS)

Table 6: Distribution of signs

In this study guarding and rigidity was present in 90% of the patients, obliteration of liver dullness was present in 74% of cases

Pneumoperitoneum	Frequency	Percent
Present	38	76.0
Absent	12	24.0
Total	**50**	**100.0**

Table 7: Distribution of pneumoperitoneum in X-ray abdomen

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Gas under diaphragm was seen in 38 cases (76%) irrespective of the site of perforation which was statistically significant (Chi square test-13.520, p<.000(S))

Type of operation	Frequency	Percent
OPC	35	70
SC	10	20
R&A	3	6
LI	2	4
Total	**50**	**100**

Table 8: Distribution of types of operation

The most common procedure done was omental patch closure (OPC) (70%) and simple closure (SC) was done in 20% of cases. Resection and anastomosis(R&A) was done in 6% of cases and loop ileostomy (LI) was done in 4% of cases.

DISCUSSION: This study was conducted in BTGH, Gulbarga. A total of 50 patients admitted with particular criteria fixed during the study period were taken as the universe and cases were selected randomly. The age distribution is as shown in Table 1. The highest number of patients encountered in this series were in the age group 50 years and above followed by the age group of 20-29 years. The mean age group in this study was 38.56 years. This is comparable with the study by Rajender Singh Jhobta who studied 504 cases of perforation peritonitis in which the mean age was 36.8 years.' In this present study, duodenal ulcer perforation was more common in the age group of above 50 years.

SEX DISTRIBUTION: The ratio of men to women with all types of perforation irrespective of site and pathological condition was 5.25:1 in the present study. In the present study the number of male patients with duodenal ulcer perforation were 29 and the number of female patients with duodenal ulcer were 1. Different authors have found variable results with regard to sex ratio. The frequency of anatomical site involved in gastro intestinal perforation is as shown in the table 3.

The commonest site involved in this study was duodenal ulcer perforation (60%) followed by ileal perforation (28%). A study done by Dorairanjan LN et al in AIIMS, New Delhi, reported incidence of peritonitis in multifactorial patients and concluded that duodenal ulcer is the most common cause of perforation peritonitis, unlike lower GI perforation in western series.[3]

CLINICAL FEATURES: In case of peptic ulcer perforations, pain abdomen and vomiting were the predominant symptoms. Tenderness, guarding rigidity, obliteration of the liver dullness were the predominant signs. In the present study, pain abdomen was present in all cases. Guarding and rigidity was present. In 21 patients of duodenal ulcer patients, liver dullness and obliterated in 20 patients of duodenal ulcer perforation. Liver dullness was not obliterated in 6 patients of duodenal ulcer perforation. Probable reasons suggested. Are sealing of the perforation or lack of gas at the site of perforation or adhesions around the site of perforations.

Peritonitis is a life threatening complication of peptic ulcer disease. Diagnosed is made clinically and confirmed by the presence of pneumoperitoneum on radiographs. Perforated peptic ulcer is a common surgical emergency and a major cause of death in elderly patients. Operative

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management consists of time honored practice of omental patch closure. Gas under diaphragm in X-ray abdomen standing is an important finding and helpful in diagnosis.

Figure 1: Gas under Diaphragm

OPERATIVE MANAGEMENT: All patients of perforative peritonitis were treated as a surgical emergency. Preoperatively all patients had broad spectrum antibiotic coverage, nasogastric suction and management of fluid and electrolyte imbalance and oxygen supplementation when necessary. Anemic patients required blood, transfusion. Postoperatively parenteral antibiotics were continued and after that oral antibiotics were given for 5 days. Thirty cases of duodenal ulcer perforation underwent closure as described by Graham (Omental patch closure).Double layer closure of the jejunal and ileal perforation was done in 2 and 10 cases respectively using 2-0 vicryl and 2-0 silk.

Two patients of ileal perforation underwent loop ileostomy. Resection of terminal ileum with end to end anastomosis was done in 3 cases of gangrenous bowel with perforation. In all cases of peritonitis thorough peritoneal lavage was given with 0.9% saline and drains were kept in the pelvis and the site of perforation which were usually removed on the third and fifth postoperative day or when the drainage <50 ml. Nasogastric tube and usually removed on the second and third postoperative day and started orally on fourth day depending on bowel sounds. All patients were started on chest physiotherapy from the first postoperative day.

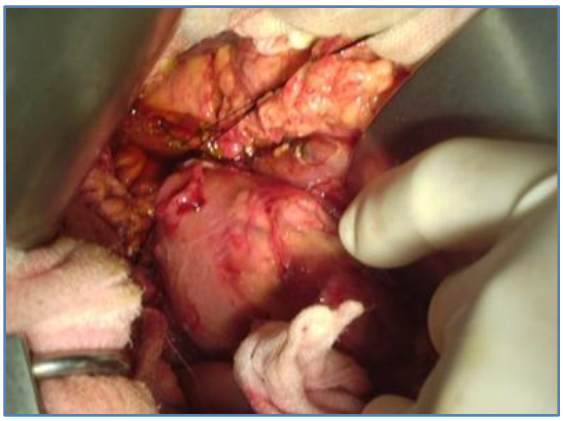

Figure 2: Duodenal Perforation

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Figure 3: Ileal Perforation

Figure 4: Resection and anastomosis for ileal Perforation

POSTOPERATIVE COMPLICATIONS: In the present study, the postoperative morbidity was towards higher side because of late presentation to the hospital, poor build and malnourishment, associated anemia and dehydration at presentation. Most common complication developed by patients was lower respiratory tract infection. One patient developed septicemia and was expired.

Mortality: In the present study, the mortality rate was 4%. Dandapat MC et al. recorded a mortality rate of 15.8%. Mathikere Lingaiah Ramachandra in his study found the mortality rate as 1 4%.[4]

Follow up: Most of the patients did not turn up after one month in the study so long term outcome of procedure could not be made out.

CONCLUSION:

- The most common age group affected is 50 years and above.
- Duodenal ulcer perforations were more common in the age group of 50 years and above.
- 92% of the patients were male patients and 8% of the patients were females.
- Duodenum (60%) is the most common site of perforation followed by ileal perforation (28%), gastric perforation (8%) and jejunal perforation (4%).
- Duodenal ulcer (52%) is the most common cause of perforative peritonitis. followed by small intestinal perforation.
- Guarding and rigidity was present in 90% of patients.
- Diagnosis is made clinically and confirmed by presence of pneumoperitoneum (76%) on radiographs.
- Laparotomy with closure of the perforation with omental patch (70%) is the commonest operative management for perforated peptic ulcer.
- The overall mortality rate was 4%.

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