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Original Research Article

Modes of presentation and outcome of gastric ulcer perforation

Dr. Mayakonda Krishnamurthy Ramesh[1], Dr. Niyaz Ahmed[2], Praveen Kumar Mallangoudapatil[3]
[1]Professor, [2]Senior Resident, [3]Post graduate, Department of General Surgery, Bangalore Medical College, Bangalore, Karnataka, India

***Corresponding author**
Dr. Mayakonda Krishnamurthy Ramesh
Email: ramspsm@gmail.com

Abstract: The treatment of perforation still continues to be controversial. Just closure of perforation may save life, but chance of recurrence of ulcer is too high and patient may not turn up for a second curative surgery. The study was conducted in Victoria Hospital, BMCRI, Bangalore, from NOV 2011 to MAY 2013. During this period the number of cases admitted and selected for analyzing the data was 30. These 30 cases were studied thoroughly according to the proforma. The details of 30 patients were arranged in the master chart for convenience of presentation. Distension was most commonly observed in cases with >24hrs history of symptoms in all cases and in all cases after 48hrs.Rigidiry was present in all cases. Abdomen was board like and tense in all the cases. Size of perforation, has a significant role in prognosis.

Keywords: Gastric ulcer, Perforation, Clinical Presentation

INTRODUCTION:

Gastric ulcer is also more likely to occur in elderly patients, and admissions for bleeding gastric ulcers have increased during the past several years [1].

Ulcer disease continues to exact a heavy personal and financial toll. Currently, the personal toll of ulcer disease is seen mainly in the complications of perforation and bleeding [3]. Gastric ulcer has a higher mortality than duodenal ulcer because of its increased prevalence in the elderly. Recent studies have shown an increase in the rates of hospitalization and mortality in elderly patients for the peptic ulcer complications like bleeding and perforation. Presumably this is due to the increasingly common use of NSAIDs and aspirin in this elderly cohort, many of whom have H. pylori infection [2].

The treatment of perforation still continues to be controversial. Just closure of perforation may save life, but chance of recurrence of ulcer is too high and patient may not turn up for a second curative surgery. So, there is a school of thought, which recommends definitive surgery in a perforated gastric perforation. This may to a certain extent reduce the mortality and morbidity of the patient, because patients have to risk a major operation when the general condition is not good. On the other hand it saves the patient of further surgery.

When acute or chronic gastric ulcer perforates into peritoneal cavity, three components require treatment viz., the ulcer, the perforation and the resultant peritonitis. The perforation and resultant peritonitis are immediate threats to the life; the ulcer in itself is not. The therapeutic priorities thus are treatment of peritonitis and securing the closure of perforation, which may be achieved with surgical procedure.

In spite of better understanding of disease, effective resuscitation and prompt surgery under modern anesthesia techniques, there is high morbidity (36%) and mortality (6%). Hence, attempt has been made to analyze the various factors, which are affecting the morbidity / mortality of patients with gastric perforations.

Gastric perforation is now a common complication. It was rare until the end of the 19th century, but since then its frequency has increased progressively. Moreover, there was a curious change in incidence in the 19th century, most perforations were gastric perforations and the majority affected women, especially girls aged from 10-28 years. By 1959, duodenal perforations greatly exceeded gastric, men were affected more than women and most cases occurring between 25-45 years

METHODOLOGY:

The study was conducted in Victoria Hospital, BMCRI, Bangalore, from NOV 2011 to MAY 2013. During this period the number of cases admitted and selected for analyzing the data was 30. These 30 cases were studied thoroughly according to the proforma. The

details of 30 patients were arranged in the master chart for convenience of presentation.
The diagnosis was made on clinical findings supported by investigations like plain x-ray abdomen erect posture. In cases managed surgically, confirmation was made on the operation table only and intra-operative edge biopsy taken to look for malignancy and H.Pylori.

A detailed history was taken when the condition of the patient is stable. In critically ill patients, the patients were resuscitated and history was taken after the patient was stabilized. The hospital records were also reviewed to obtain appropriate epidemiological information regarding age, sex, occupation, and clinical presentation, duration of symptoms, past history of chronic gastric ulcer, investigations and mode of treatment.

For selecting a case for definitive surgery most times general condition of the patient taken up for surgery and also operating findings were taken into consideration. In those cases, where both these conditions were satisfactory, definitive surgery was performed, giving weightage to the choice of the surgeon. In all other cases of perforation, surgery was done to close the perforation expect where condition of the patient was very poor (shock at the time of

Examination:

All the patients with suspected peptic ulcer perforation were examined thoroughly and base line findings were recorded, repeated examination of the patient was done resuscitation and till the diagnosis is confirmed.

Tachycardia associated with fever, tenderness in the epigastrium and abdominal rigidity pointed towards the diagnosis of peritonitis. I examined all the patents as per the proforma. In the all patients, with peptic ulcer perforation complete physical examination to rule out associated disease was done.

Investigations:

Relevant investigations were done like plain x-ray erect abdomen, blood grouping and typing, CBC, BT, CT, blood urea, serum Creatinine, Serum. Electrolytes, ultrasound of abdomen.

Paracentesis:

Diagnostic peritoneal tap was done. Fluid drawn was found to be turbid and bile stained indicating peptic ulcer perforation and in few cases with pus and flakes as tap content. Intra operative biopsy of ulcer for H.Pylori infection and malignancy

Prognostic scoring system to mention about the general condition of the patient

General Condition:

1) Good-Patient is conscious and cooperative.
-Pulse rate < 90/min
-BP 120/80mm Hg.
- Urine output good
- No associated medical problems like-hypertension, diabetes mellitus, tuberculosis or Myocardial infraction.

2) Average- Patient conscious
- Pulse rate 90-110/min.
- BP 120/80mm Hg.
-Urine-Oliguria
- No anyone associated medical illness.

3) Poor - Patient conscious and poor orientation
- Hippocratic facies
- Pulse rate-tachycardia > 120/min and low volume
- BP-systolic < 80mm Hg or not recordable
- Urine – anuria
- Medical illness may or may not be present

Outcome of the patient (recovery):

1. Good – Discharge at 7^{th} – 9^{th} postoperative day, without intra or postoperative complications.
2. Average – Intraoperative anaesthesia complication – Postoperative complications like brouncho pneumonia, wound gaping, wound infection, but recovery before discharge.
3. Poor – Patient survived with burst abdomen / enterocutaneous fistula / severe malnutrition.
4. Death – In the postoperative period.

RESULTS:

Pain was the presenting symptom in all cases and onset was acute in all of them. In most cases pain was situated at the epigastrium, and right hypochondrium. Vomiting was present in 18 cases started along with the pain abdomen and contained food particles and bile. Distension was most commonly observed in cases with >24hrs history of symptoms in all cases and in all cases after 48hrs.

Rigidity was present in all cases. Abdomen was board like and tense in all the cases. Liver dullness was obliterated in 28 cases. In two cases there was no obliteration of liver dullness. None obliterated of liver dullness may be due to adhesion to some inflammatory pathology earlier. Bowel sounds were either sluggish or absent in most of the cases

Table1: Mode of presentation: Symptoms:

Symptoms	No.of cases
Pain abdomen	30
Distension of abdomen	27
Vomiting	20
Fever	10

Table 2: Mode of presentation: signs

Signs	No.of cases
Dehydration	16
Shock	11
Pallor	15
Distension	30
Tenderness	30
Rigidity	30
Obliteration of liver dullness	28
Absent bowel sounds	30

INVESTIGATIONS:

The higher hemoglobin could be due to hemo concentration. Total count was raised above 11,000 cell/mm3 in 18 patients. Six patients were in pre renal type of acute renal failure. Altered liver function test was demonstrated in two patients. In erect abdomen X-ray Gas under the diaphragm was observed in 24 patients (80%).

Table 3: X ray

Plain x-ray abdomen (erect)	No.of cases
Positive	24
Negative	06

All patients were put on drip and suction, antibiotics consisting of a Cephalosporin, aminoglycoside and an antimicrobial against anaerobes (Metronidazole). A watch was kept on vital signs and abdominal girth. All patients were taken up for emergency laparotomy.

Table 4: Type of Anesthesia

Type of Anesthesia	No of cases
General Anesthesia	27
Epidural Anesthesia	03

Midline incision made in all 30 cases.

Table 5: Peritoneal Fluid

Type of Peritoneal fluid	No of cases
Greenish	24
Feculent	None
Purulent	02
Flakes	04

Peritoneal fluid varied from 500ml to 2 liters.

Table 6: Site Of Perforation

Site Of Gastric Perforation	No Of Cases	Percentage
Pyulorus	10	33.33
Prepyloric	12	40
Antral	07	23.33
Lesser Curvature	01	3.33

Table 7: Size of Perforation

SIZE	NUMBER OF CASES	SHOCK
<0.5cm	12	01
0.6-1cm	15	06
>1cm	03	02

POST OPERATIVE MANAGEMENT:

Ryle's tube aspirate is average for 2 days for all the patients. V-fluids given are dextrose, dextrose with saline, ringer lactate, normal saline, isolate G.

Antibiotics used – Cephalosporins, Anti anerobics were used. Electrolytes imbalance-ten patients developed electrolytes imbalance, two developed acute renal failure, managed conservatively and recovered.

Table 8: Complications

Complications	No Of Cases.	Average days of hospitalization
Bronchopneumonia	04	15
Wound infection	05	14
Residual abscess	01	21
Burst abdomen	01	21
No complications	19	08

Among 30 patients studied, 11 patients developed complication and remaining 19 patients had smooth recovery. Most common postoperative complication was wound infection in about 5 cases. 4 patients had broncho pneumonia, one had residual abscess managed by ultrasound guided and one patient had burst abdomen. 2 patients died within 48-72hrs of postoperative period. These patients presented with severe shock and septicemia and died because of multiorgan failure.

Out of 30 patients studied in our series, 2 patients died. All 28 patients were advised anti-H-pylori treatment with omeprazole, amoxicillin and metranidazole for one week followed by omeprazole 20mg OD. For 3 months and follow up every month. In the follow up of 3 months period only 4 patients out 28 patients who came for follow-up complained of pain abdomen, suggestive of peptic ulcer disease. They were advised endoscopy and definitive surgery and put on medical line of treatment. Out of 4, only 1 turned up for definitive surgery.

DISCUSSION:

Walgenbach S and Bernhard G [3] analyzed that time interval between onset of acute symptoms and surgery was less than or equal to 2 hours mortality rate is 12% and if more than 24 hours the mortality rate is 21%. The mortality risk for a patient who is operated on more than 24 hours after the onset of acute symptoms is 4.9 times to that of a patient operated within 24 hours.

So the interval between the time of perforation and surgery has a very strong significance in deciding the mode of treatment i.e. type of surgery to be planned and outcome of the disease [4]. 60% of patients reached the hospital >24hrs after the onset of symptoms. Most of our patients are from rural area, probably be the reason for the delay.

Table 9: Duration of symptoms before presentation of hospital

Duration (in hours)	De Bakey Series [5]	Bharati C Ramesh *et al.;* [6]	Present series
0-6	50.83%	12.00%	0%
7-12	13.02%	12%	10%
13-24	4.73%	24%	30%
>24	13.60%	64.00%	60%

Tsugawa K *et al.;* reviewed that three risk factors: pre-operative shock, delay to surgery over 24 hours and medical illness, was shown by the progressive rise in the mortality rate with the increasing number of risk factors [7]. Boey John *et al.;* revealed concurrent medical illness, pre-operative shock and delayed operation (>48hours) as significant risk factors that increase mortality in patients with perforated duodenal ulcers [8]. In the present study (2005) we reported that age, site of perforation, size of perforation, duration of perforation, H-pylori infection, pre-operative shock are the risk factors for the outcome of perorated peptic ulcer. The mortality and morbidity are increased whenever, perforation exceed 12 hours because of the peritoneal infection [9, 10]. In the presence of gross contamination, late exploration (after 48hours) carried a high mortality i.e.50% *et al.;* [8]. The importance of the peritoneal spoilage and duration of perforation is mentioned as a risk in the outcome of the perforation of duodenal ulcer [11]. Bharati C Ramesh *et al.;* [6] reported than 12% of patients reached the hospital within 12 hours, 40% reached hospital within 25-48 hours and 24% after 48 hours [6]. In the present series (2005) 35% patients presented to hospital after 24 hours and the mortality in patients who presented to hospital after 24 hours is found to be 8.5%.

CONCLUSION:

Perforation of more than 0.5cm size has high a morbidity of, which indicates that size of perforation, has a significant role in prognosis

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