

The Spectrum Of Perforation Peritonitis - Central India Experience

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Abstracts: Introduction: Peritonitis secondary to gut perforation is one of the most common surgical emergencies in India and is associated with high morbidity and mortality. The aim of this study was to recognize the spectrum of perforation peritonitis as managed at Govt. Chhattisgarh Institute of Medical Sciences hospital Bilaspur Chhattisgarh, in central India. **Method:** A retrospective analysis of 618 patients was done, in terms of clinical presentation, duration, seasonal variation, operative findings and post operative morbidity and mortality, admitted at Chhattisgarh Institute of Medical Sciences hospital Bilaspur. Chhattisgarh, over a period of 03 years. All the patients had undergone emergency laprotomy and the site of perforation was identified. **Results:** The most common site of perforation was prepyloric (393 cases. 63.6%). In 22.16% of the cases the perforation was associated with typhoid fever and in 2.7% cases with abdominal Koch's. Trauma however showed perforation in only 5.6% cases, mainly jejunal. The overall mortality was 12.13%. **Conclusion:** Non traumatic upper gastrointestinal perforation peritonitis is common in our place. In contrast to the west, where lower gastrointestinal tract perforations predominate, in India upper gastrointestinal tract perforations constitute the majority of cases. [Bhargav RA NJIRM 2014; 5(3) :18-21]

Key Words: Perforation peritonitis, central India, chhattisgarh

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Introduction Perforation peritonitis is one of the most common emergencies attended in the surgical wards all over the world. The spectrum of perforation peritonitis differs in the east from its western counterparts.¹ Despite advances in the surgical technique, antimicrobial therapy and intensive care support, the management of peritonitis continues to be highly demanding, difficult and complex. The majority of patients present late with purulent peritonitis with septicemia. There is a paucity of data from India regarding its etiology, prognostic indicators, morbidity and mortality patterns.²

Our study was designed to recognize the spectrum of perforation peritonitis as encountered by us at Chhattisgarh Institute of Medical Sciences hospital Bilaspur Chhattisgarh, in central India.

Material and Methods: A retrospective analysis of 618 patients was done, admitted at Chhattisgarh Institute of Medical Sciences hospital Bilaspur. Chhattisgarh, over a period of 03 years.

Inclusion Criteria : All cases found to have perforation peritonitis of any part of the gastrointestinal tract, at the time of surgery were included in the study.

Exclusion Criteria: All cases with either primary peritonitis or those due to anastomotic leak were excluded.

All the patients, following investigations and diagnosis underwent exploratory laparotomy after proper resuscitation, in emergency setting. During surgery the source of contamination was identified and closed. The peritoneal cavity was thoroughly lavaged with normal saline and drains were placed in required cases only, left to the discretion of the operating surgeon. The abdomen was closed with non absorbable suture material. All the patients received appropriate antibiotic cover but the regime was not uniform.

All the cases were studied in terms of clinical presentation, radiological investigations, operative findings and post operative course. The data was collected from indoor patient records and operative notes.

Result: A total of 618 patients were studied. The mean age was 40.9 years (range 5-85years) with a majority of patients being males(82.2%). 67.15% of the patients were in the age group less than or equal to 55 years and 40.29% of the patients had one or more preexisting medical illness.

The time taken by the patients for presentation in the hospital, from the onset of symptoms was less than 24 hours in 67.47% of the cases. The required time for a diagnosis, resuscitation and preparation of the patient for surgery was less than 12 hours in 72.49% of the cases. The clinical presentation of the patients and the coexisting diseases are described in the table no 1& 2.

Table 1: Clinical Presentation

Presentation	Number of cases	% of total
Pain abdomen	573	92.7%
Vomiting	412	66.6%
Abdominal distention	600	97.8%
constipation	358	57.9%

Table2: Co-Existing Diseases

Medical condition	Number of cases
Diabetes mellitus	145
COPD	214
ALD/ESLD	73
ESRD	14

On exploration in the operation theater the site of perforation was prepyloric most commonly (393 cases. 63.6%).In 22.16% of the cases the perforation was associated with typhoid fever and in 2.7% cases with abdominal Koch's. Trauma however showed perforation in only 5.6% cases, mainly jejunal. Table no 3.

Table 3: Cause Of Peritonitis

Site of perforation	Number of cases	% of total
Pre pyloric/gastric	393	63.6%
Duodenal	13	2.1%
Jejunal	28	4.5%
Ileal	122	19.7%
Appendicular	57	9.3%
Large bowel	5	0.8%

APD was the most common cause in cases of gastric and duodenal perforations (67.79%) and typhoid fever was the most common cause in the cases with ileal perforation (22.16%).Large bowel perforation was seen in 0.8% of cases mainly associated with malignancy and trauma.

In the majority of patients there was generalized peritonitis with biliary(69%), purulent (30.2%)or fecal(0.8%) contamination . Primary closure of peptic and duodenal perforations was the mainstay of management in exploratory laparotomy in 440 cases; gastrojejunostomy was done in 27 cases. Resection and anastomosis was done in 116 cases with small intestinal perforations and stoma was created in 38 cases.

Table 4: Operative Procedure

Procedure	Number of cases
Primary closure	440
Gastro jejunostomy	27
Resection ansatamosis	116
Colostomy	3
Ileostomy	35

On assessing the season wise distribution of the presentation of the patients it was observed that 73.78% of the cases presented in autumn/winter and 26.22% in the spring /summer season. Patients with non-vegetarian dietary habitus had more than two fold incidence of perforation peritonitis (71.5%) as compared to vegetarians (28.5%). Smokers and patients consuming alcohol comprised 46.73% of all cases.

Post operative complications were seen in 191 patients. The incidence of post operative complications was higher in the cases with intestinal perforation (75.9%) as compared to gastro-duodenal perforation (24.1%).

The overall mortality rate in our study was 12.13%, septicemia along with MODS was the most common cause in 53.3% of the cases, followed by respiratory complications in 26.6% and anastamotic leak in 14.6% of the cases.

Discussion: Perforation peritonitis is the most common surgical emergency attended mainly affecting the young adults in the prime of life.³ The mean age in the study is 40.9 years, compared to 37 years in the other study and 45-60 years as in the studies from the west.⁴

Majority of patients in the study were males and the male to female ratio was 5:1 which is comparable to the other studies.⁵

The signs and symptoms were typical and it was possible to make a clinical diagnosis in majority of the patients. In majority of the patients the time taken for presentation to the hospital, from the onset of symptoms was less than 24 hours and the time taken for diagnosis, resuscitation and definitive management was less than 12 hours in most of the cases.

The perforation of the proximal gastrointestinal tract was more common than perforation in the distal part in our study which is consistent with the studies from India but a contrast with the studies from the west possibly due to lower incidence of diverticulitis and traumatic perforations in India.^{1,6}

The order of most common site of perforation in our study is peptic, ileal, appendicular, jejunal, duodenal and large bowel, which is not comparable to other studies where appendicular and duodenal perforations have a higher incidence.^{7,8}

Not only the site but etiology of perforation also shows wide geographical variation. The most common cause of perforation here is peptic ulcer which is comparable to other studies but in contrast to study by Khanna et al. which showed typhoid perforation as the most common cause.⁹ In the west, non-traumatic perforation due to Crohn's disease, foreign body and radiation enteritis are more common.¹⁰ Noon et al. from Texas, studied 430 patients of gastro-intestinal perforation and found that 210 cases to be due to trauma, 92 due to appendicular perforation and 62 due to peptic ulcer. This indicates the importance of trauma in the western countries.¹¹

The socioeconomic status, irregular food habits and infection bear more importance for the common peptic ulcer perforation in our region. Not to be forgotten that non-vegetarian diet, addiction and spicy food plays an important role in peptic ulcer disease and perforation later.

The seasonal variation in the incidence of perforation is similar to the study by Nomani et al.¹²

Gastric ulcer perforation to duodenal ulcer perforation ratio was 30:1 in our study, which is a contrast to the ratios observed in the other studies.^{13,14} The common site of perforation due to trauma was jejunum followed by ileum which is comparable to the study by Sule AZ.¹⁵

In absence of generalized peritonitis with faecal contamination, primary closure in the cases of traumatic perforation is done safely. Primary closure with omental patch followed by H.Pylori eradication is effective in managing peptic ulcer perforation with low morbidity and mortality despite late presentation.

Simple closure of duodenal ulcer perforation with Kocherisation is safe, in cases of ileal and large bowel perforation, simple closure or resection anastomosis with or without stoma, as per the condition of the gut and the decision of the surgeon should be done according to the status of the patient.

The over all mortality in our study is 12.13%, which is comparable to other studies with septicemia and MODS as the main cause. (13.16.17.)

Conclusion: To conclude, the aetiology of perforation in the region is mainly non traumatic, with peptic ulcer being the major cause of generalized peritonitis. Early recognition, aggressive resuscitation and early definitive management are required to avoid major morbidity and mortality.

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