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Perforation Peritonitis: A Study of Clinical Profile, Management and Outcomes in a Tertiary Care Hospital in Western India

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ABSTRACT

INTRODUCTION - Perforation peritonitis is one of the most common surgical emergencies encountered in India and despite many advances it continues to cause significant morbidity and mortality. The present study was done to find out the spectrum of disease in terms of age, sex, clinical presentation, intraoperative findings and complications. METHOD- A hospital based observational study was conducted at a tertiary care hospital in Pune including all patients diagnosed with perforation peritonitis and undergoing exploratory laparotomy between January 2022 and January 2023. RESULT - The most common cause of perforation peritonitis in this study was appendicular perforation followed by duodenal perforation. Males were affected more than females and the peak incidence was seen in 2nd and 3rd decades of life. CONCLUSION - Early presentation, prompt diagnosis and appropriate treatment decreases the mortality and morbidity of perforation peritonitis.

KEY WORDS - perforation peritonitis, acute abdomen, morbidity, mortality

INTRODUCTION

Perforation peritonitis is one of the most common surgical emergencies encountered in India and despite advances in surgical techniques, antimicrobial therapy and intensive care support, management of peritonitis continues to be highly demanding, difficult and complex.[1]

Perforation can occur in any part of the gastrointestinal tract and clinical presentation varies according to the site of perforation.[2]

Most commonly peritonitis presents as an acute abdomen. Local findings include abdominal tenderness, guarding or rigidity, distension, diminished bowel sounds. Systemic findings include fever, chills or rigor, tachycardia, sweating, tachypnea, restlessness, dehydration, oliguria, disorientation and ultimately shock.[3]

Confirmation of diagnosis can be made on chest and abdominal X-ray, ultrasonography or on CT scan.

The most accepted protocol of treatment for patients with secondary peritonitis due tohollow viscus perforation is resuscitationof the patient, removing the source of contamination as soon as possible along with the appropriate antimicrobial therapy.[4]

MATERIALS AND METHODS

It is a hospital based observational study conducted at a tertiary care hospital in Pune.

All patients diagnosed with perforation peritonitis and undergoing exploratory laparotomy between January 2022 and January 2023 were included in the study.

Patients with primary peritonitis, tertiary peritonitis and those with pancreaticobiliary tree or genitourinary perforation were excluded from the study.

Patients who were not willing to be included in the study were also excluded from the study.

After proper and detailed clinical history, patients were examined for signs of peritonitis and investigated for confirmation of peritonitis. After proper resuscitation of patients with intravenous fluids, nasogastric suction and IV antibiotics, patients were subjected to exploratory laparotomy. Operative findings were noted, and appropriate surgical procedure carried out. Thorough peritoneal lavage was given, abdominal tube drains were put, and closure done after confirming hemostatsis.

Post operatively standard care was given to all patients and complications if any were noted.

Statistical analysis was done.

RESULTS

A total of 116 patients were included in the study.

AGE DISTRIBUTION	
15-20 years	2
21-30 years	35

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AGE DISTRIBUTION	
31-40 years	37
41-50 years	22
51-60 years	15
>60 years	5
TOTAL	116

The age of the patients ranged from 16 years to 76 years, with maximum number of patients belonging to the age group of 21-40 years (62%). The mean age was 37.56 years.

GENDER DISTRIBUTION	
MALE	85
FEMALE	31

85 patients were male as compared to 31 females (2.7:1).

TIME OF PRESENTATION	
Within 24 hours	50
>24hrs	66

50 patients presented to the hospital within 24 hours of onset of symptoms.

CHIEF COMPLAINTS	
Abdominal pain	116
Abdominal distension	73
Fever	56
Vomiting	88
Constipation	29

Abdominal pain was the presenting complaint in all the patients followed by vomiting (75.8%), distension (62%), fever (48%) and constipation (25%).

RADIOLOGICAL FINDINGS ON XRAY ABDOMEN	
Gas under diaphragm	77
Multiple air fluid levels	18

77 patients had air under diaphragm in X-ray findings while 18 patients had multiple air fluid levels.

PERFORATION SITE	
Appendicular perforation	39
Duodenal perforation	36
Jejunal perforation	11
Ileal perforation	14
Gasric perforation	9
Sigmoid perforation	7
Total	116

The most common site of perforation was appendix (33.6%) followed by duodenum (31%), ileum (12%), jejunum (9.4%), stomach (7.7%) and sigmoid colon (6%).

PROCEDURE PERFORMED	
Appendectomy	39
Primary closure	45
Resection and Anastomosis	22
Ileostomy/Colostomy	10

All the patients with perforated appendicitis underwent appendectomy, those with upper gastrointestinal (GI) perforation underwent primary closure with omental patch. Patients with lower GI perforation underwent resection anastomosis or Ileostomy/colostomy depending upon the site of perforation and bowel edema.

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COMPLICATIONS	
Surgical site infection	46
Respiratory complications	31
Burst abdomen	8
Anastomotic leak	4
Mortality	16

Surgical site infection (39.6%) was the most common complication in this study followed by respiratory complications (26.7%), burst abdomen (6.8%) and anastomotic leak.
Mortality was seen in 13.7 % (16) patients.

DISCUSSION

Generalized peritonitis is one of the most common surgical emergencies encountered across the world and is a major cause of mortality and morbidity and warrants prompt diagnosis and treatment.

In our study most of the cases belonged to age group of 31-40 years (31.8%), followed by 21-30 years (30%) and 41-50 years (18.9%). In this study we observed that majority of the study cases were less than 50 years of the age group (82.7%). Similar observations were found by Jhobtaet al.,[1] Sharmaet al.[5] and Gupta et al.[6] where they reported higher incidences of perforation peritonitis in younger age groups as compared to older age groups.

This is likely due to higher incidences of smoking, alcohol and drug abuse in younger age groups.

73% of the patients in our study were male as compared to 27% females. This was similar to the studies done by Lohithet al(86% Male)[4], Vyaset al(78% Male)[7], Hameed et al (76.5% Male)[8].

Majority (56.8%) of the patients came to the hospital beyond 24 hours after onset of symptoms which was associated with more feral contamination and contributed to higher incidence of complications and mortality.

Abdominal pain was the presenting complaint in all the patients (100%). Abdominal distention was found in 62% along with vomiting in 75.8% and constipation in 25% cases. Only 66% had evidence of pneumoperitoneum on X-Ray done in erect posture.

Unlike other studies. the most common site of perforation in this study was appendix (33.6%) followed by duodenum (31%), ileum (12%), jejunum (9.4%), stomach (7.7%) and sigmoid colon (6%)

This was in contrast to studies done by Sharma et al.[5], Vellapanet al.[9] and Jhobtaet al.,[1] which reported duodenal perforation as the most common site of perforation. This might be due to increased use and easy availability of proton pump inhibitors.

The procedures performed depended upon the site of perforation, general condition of the patient and contamination.

In this study surgical site infection was the most common complication occurring in 39.6% of the patients. This might be because of late presentation and greater intraperitoneal contamination. Respiratory complications were seen in 26.7% of patients and were much more common in older patients.

Postoperative anastomotic leak was seen in 4 patients.

Mortality rate was 13.7% in this study and was associated with old age, comorbidities and late time of presentation.

CONCLUSION

Perforation peritonitis is one of the common emergencies a surgeon encounters. Early presentation, prompt diagnosis and appropriate treatment decreases the mortality and morbidity of this disease.

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