

## A Retrospective Study of Perforation Peritonitis In A Tertiary Care Hospital In Jamshedpur

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### Abstract

**Introduction:** Perforation peritonitis is the peritoneal inflammation due to reaction of peritoneal cavity to the contents of perforated viscus, namely, gastro intestinal tract, the biliary system, pancreas or genitourinary tract. Gastrointestinal perforations constitute one of the commonest surgical emergency encountered by surgeons.1,2 Since the perforations could be because of injury or lesions of viscus, these are amenable to surgical therapy. Management of these patients continues to be highly demanding despite advances made in diagnosis, surgical management, antibiotics therapy, correction of electrolyte balance and intensive care support.

**Materials and Methods:** Present study was done on total 100 cases of perforation peritonitis, which were admitted in the department of general surgery of M.G.M Medical College and Hospital Jamshedpur, Jharkhand in a period of 1 year, From December 2016 to November 2017.

**Results:** Total 100 cases of perforation peritonitis were included in this study. Age of the patients ranged from 16 years to 88 years, and 50 (50 %) patients were of more than 50 years of age. 34 (34 %) patients of this study were having one or more preexisting medical illness like respiratory disease, diabetes, hypertension etc. Majority of patients in this study were males (78%).

**Conclusion:** Spectrum of perforation peritonitis is quite different between India and western countries. Upper gastrointestinal perforation (duodenal mainly) are fairly common in India. In present study, NSAIDs consumption is the most important cause of perforation. Wound infection and septicemia are the major causes of mortality. Early surgical intervention, undercover of broad spectrum antibiotics, preceded by prompt resuscitation measures and correction of electrolyte imbalance are the cornerstone in achieving good outcomes and reducing morbidity and mortality rate.

**Key Words:** perforation peritonitis, NSAIDs, Wound infection and septicemia

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### I. Introduction

Perforation peritonitis is the peritoneal inflammation due to reaction of peritoneal cavity to the contents of perforated viscus, namely, gastro intestinal tract, the biliary system, pancreas or genitourinary tract. Gastrointestinal perforations constitute one of the commonest surgical emergency encountered by surgeons.1,2 Since the perforations could be because of injury or lesions of viscus, these are amenable to surgical therapy. Management of these patients continues to be highly demanding despite advances made in diagnosis, surgical management, antibiotics therapy, correction of electrolyte balance and intensive care support.

Thus the management remains challenging through improvements in outcomes of such cases in respect to morbidity and mortality has been achieved. The causes of perforation are wide apart between Asian populace and their western counter parts.3-5 Majority of patients reported to hospital fairly late often with complications such as purulent peritonitis and septicemia.2

### II. Materials And Methods

Present study was done on total 100 cases of perforation peritonitis, which were admitted in the department of general surgery of M.G.M Medical College and Hospital Jamshedpur, Jharkhand in a period of 1 year, From December 2016 to November 2017.

#### Inclusion criteria:

- It included all cases which were found to have peritonitis due to perforation of any part of gastrointestinal tract.

#### Exclusion criteria:

- The cases of primary peritonitis and those which had peritonitis due to anastomotic dehiscence were excluded from this study.

All cases of this series were studied in terms of clinical presentation, radiological findings, biochemical investigations, operative findings and post-operative course. After receiving adequate resuscitation, all patients of this series underwent exploratory laparotomy in emergency setting. During surgery, the source of contamination was found and was managed by appropriate surgical procedure. Before closing the abdomen, peritoneal cavity was irrigated by 5-6 liters of warm normal saline with povidone-iodine solution. Abdomen was closed by non-absorbable continuous suture in single layer, after inserting abdominal tube drains. All patients had received broad spectrum antibiotics regimens in postoperative period. Appropriate antibiotic or antitubercular treatment was started post-operatively, depending upon the pathology and cause of perforation.

### III. Results

Total 100 cases of perforation peritonitis were included in this study. Age of the patients ranged from 16 years to 88 years, and 50 (50 %) patients were of more than 50 years of age. 34 (34 %) patients of this study were having one or more preexisting medical illness like respiratory disease, diabetes, hypertension etc. Majority of patients in this study were males (78%). 32 (32%) patients had arrived to the hospital in less than 24 hours of onset of symptoms, while the remaining patients had presented at variable times beyond 24 hours of onset of symptoms. Time taken for pre-operative resuscitation was variable, as it depended on the presenting condition of the patients. In 87 (87%) patients, initial resuscitation, investigations and pre-operative preparation were done in less than 12 hours. were of more than 50 years of age. 32 (32 %) patients of this study were having one or more preexisting medical illness like respiratory disease, diabetes, hypertension etc.

Site of perforation	Number of cases(N=100)
Duodenal	40(40%)
Pre-Pyloric	10(10%)
Small Bowel	20(20%)
Appendicular	24(24%)
Colon	6(6%)

**Table 1: Site of perforation**

Etiology of perforation	Number of cases(N=100)
Acid peptic disease	50(50%)
Appendicular	17(17%)
Enteric	12(12%)
Traumatic	12(14%)
Tubercular	8(8%)
Strangulation	1(1%)

**Table 2: Etiology of Perforation Peritonitis**

Definitive procedure	Number of cases(N=100)
Primary closure	67(67%)
Appendectomy	19(19%)
Resection and anastomosis	9(9%)
Resection without anastomosis	5(5%)

**Table 3: Definitive procedures performed**

Post Operative Complications	Number of cases(N=100)
Wound infection	28(28%)
Anastomotic leak	4(4%)
Burst abdomen	11(11%)
Abdominal Collection	8(8%)
Pneumonia	24(24%)
Septicemia	9(9%)
Acute Renal Failure	3(3%)
Morbidity	46(46%)
Mortality	8(8%)

**Table 4: Post Operative Complications**

### IV. Discussion

Peritonitis as results of perforation of a viscus is one of the commonest emergencies seen in surgical department. Management of perforation peritonitis not only requires prompt resuscitation measures and improved surgical strategies but also intensive medicare including specific antibiotics and maintenance of proper electrolyte balance, only then an improved outcome will be achieved.

Approximately 62% cases had distension of abdomen, and 39% had pain and tenderness. Almost similar type of symptomatology was also noted by other investigations and thus corroborated our observations.<sup>6-8</sup>

In our study large number of cases had associated comorbid conditions. Common associated comorbid conditions included chronic obstructive pulmonary disease (COPD) followed by NSAID intake, hypertension, diabetes, TB and malignancy. Bali et al in their study also observed COPD, renal disease, diabetes and hypertension as comorbidities.<sup>6</sup>

Majority of patients in present study exhibited positive findings on investigations such as evidence of pneumoperitoneum on X-ray chest and air fluid levels on X-ray chest and air fluid levels on X-ray abdomen and dyselectrolyolemia. Memon et al contested our observations and noted that investigations have dubious reliability.<sup>8</sup> Supporting our observations in respect to investigations results, other investigations have also observed a positive role reporting 50% of cases had pneumoperitoneum. We observed positive findings in various investigations conducted. Consistent with our observations, Bali et al also noted that 79% patients had pneumoperitoneum on chest x-ray and multiple air fluid levels on abdominal X-rays. <sup>6</sup> Similar to our findings, these authors also noted altered electrolyte balance.

Most patients (177) took more than 24 hours to reach hospital despite onset of symptoms. Memon et al in their series also observed that majority of patients presented late from 12 hours to 6 days with average 3.5 days.<sup>8</sup> Kaur et al also observed a delay in seeking surgical treatment as an important cause of high morbidity.<sup>9</sup> We observed that the diagnosis of peritonitis could be clinched clinically. Abdominal distention, pain, tenderness, vomiting were some important symptoms. Other investigations also noted similar symptomatology in their studies.<sup>8,10</sup>

More commonly the perforations involved the proximal part of gastrointestinal tract.<sup>6,11-13</sup> This observation was in contrast to observations of Memon et al, Qureshi et al and Dorairajan et al who noted distal gastrointestinal tract was the common site of perforation.<sup>8,14,15</sup> Our observations are also in contrast to studies from western countries where perforations were more common in the distal part.<sup>16,17</sup>

It may be noted that then spectrum of perforation peritonitis in India continues to be different from western counterparts. Although there is a paucity of data from our country about perforation peritonitis with respect to etiological factors, prognostic indicators, morbidity and mortality patterns yet with passage of time one could clearly observe the changing patterns with wide geographical variations even in our own country regarding etiology etc. If earlier studies pattern are compared with the present studies.

In our study the most common cause of perforation was duodenal ulcer. This observations is in line with other investigation is in line with other investigations in the field.<sup>7,22</sup> Chakma et al noted an occurrence of 54.29% as far as perforation of duodenal ulcer was concerned. <sup>23</sup> Same results were shown by other studies. <sup>21,22</sup>

## V. Conclusion

Spectrum of perforation peritonitis is quite different between India and western countries. Upper gastrointestinal perforation (duodenal mainly) are fairly common in India. In present study, NSAIDs consumption is the most important cause of perforation. Wound infection and septicaemia are the major causes of mortality. Early surgical intervention, undercover of broad spectrum antibiotics, preceded by prompt resuscitation measures and correction of electrolyte imbalance are the cornerstone in achieving good outcomes and reducing morbidity and mortality rate.

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