

An Observational Prospective Study of Pathophysiology and Outcomes of Perforation Peritonitis at Tertiary Care Centre

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Abstract

Background: perforation peritonitis still leading cause of morbidity and mortality in the present era of modern surgery. The objective of study was to evaluate pathophysiology and its outcomes associated with perforation peritonitis. **Methods:** This prospective observational study was conducted in the Department of General Surgery of Rohilkhand Medical College and Hospital, Bareilly, between June 2016 and Dec 2017. A total of 60 patients were enrolled in these studies. **Results:** A total of 60 patients of perforation peritonitis were included in the study with 40% of patients belong to age group of 31 to 40 years. The most common etiology was Peptic ulcer disease (37%), enteric perforation (30%) and Tubercular (16%).

Conclusions: most of the patients of perforation peritonitis required aggressive resuscitation, correction of electrolyte imbalance and early surgical intervention.

Keywords: laprotomy, Perforation peritonitis, pain abdomen

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I. Introduction

Peritoneum is the largest serous smooth membrane of human body with a surface area of about 2 m², approximately to surface area of skin.¹ Peritonitis may be acute or chronic, septic or aseptic, primary or secondary, localized or generalized. Perforation peritonitis is the most common emergency faced by general surgeon in India.² It is associated with a high morbidity and mortality.³

Since the perforations could be because of injury or lesions of viscus, these are amenable to surgical therapy. Contributory causes are delay in seeking the surgical advice, infection, toxemia, old age, associated illnesses and post-operative complications.⁴ Changes in lifestyle like reduced physical activity, excessive intake of high calorie diet, smoking, alcoholism and drugs have added to the problem. In developing countries, perforation of small bowel due to typhoid and tuberculosis is common.^{5,6} Perforation of ileum due to typhoid is one of the commonest causes in developing countries, most probably due to low socio-economic condition, poor sanitation and poor personal hygiene. It is one of the most common causes of ileal perforation, which occur in 2nd and 3rd week of illness.

Present study was conducted with an objective to evaluate the mortality and morbidity in cases of acute peritonitis, and to evaluate the factors affecting the outcome of peritonitis.

II. Aims And Objectives

To find out incidence of the various causes of acute peritonitis and causes of mortality and morbidity and factors influencing it.

III. Materials And Methods

This prospective observational study was conducted in the Department of General Surgery of Rohilkhand Medical College and Hospital, Bareilly, between June 2016 and Dec 2017. The work was started after the review and approval of protocol of study by Institutional Ethics and Research Committees.

This study comprises of 60 cases of acute peritonitis coming to R.M.C.H, Bareilly.

A pre-tested proforma was used to collect the relevant information by history, clinical examination of patients, relevant investigations required and treatment. Proper consent from the patient was taken for his/ her inclusion in this study.

Patients were admitted as and when they presented with the following inclusion and exclusion criteria.

Inclusion criteria

In study, all the cases that were provisionally diagnosed with acute peritonitis And subjected to relevant investigations and underwent surgery were included.

Exclusion criteria

- Cases who were ruled out after investigations.
- Age group <18 years
- Cases that were treated conservatively.

Subject underwent X -ray erect abdomen, and blood investigations like CBC, Blood urea, serum creatinine, urine routine and

Microscopy. Serum amylase, lipase and Widal test was done if pancreatitis or enteric fever Was suspected respectively.

Laparotomy was done under general anaesthesia or epidural anaesthesia.

Postoperatively patients were followed till discharge from hospital and reviewed in OPD at the interval of 1, 2 &3 month.

Mortality in this study refers to death of the patient in the hospital during same admission as episode of peritonitis.

Statistical Analysis

The mean and percentage value were calculated by using simple statistical methods. The final data was presented in the form of tables.

IV. Results

The table shows the distribution of patients according to age group. There were 2 (3%) patients in the age group < 20 years, 9 (15%) were in the age group of 21 - 30 years, 24 (40%) were in the age group of 31 - 40 years, 15(25%) were in the age group of 41 - 50 years, 6 (10%) were in the age group of 51 - 60 years and 4(6%) were in the age group more than 60 years.

Table 1. Distribution of patients according to Age Group.

Sr.No.	Age Group	Number	Percentage
1.	< = 20 years	2	3
2.	21- 30 years	9	15
3.	31- 40 years	24	40
4.	41- 50 years	15	25
5.	51-60 years	6	10
6.	>60years	4	6

In our study peptic ulcer in 26 (43%), typhoid in 18 (30%), tuberculosis in 10 (16%) and ischaemic bowel disease in 2 (6%) patients are the most common causes of perforation.

Table 2. Etiology of Perforation

Sr.No.	Etiology of Perforation	Number	Percentage
1.	Typhoid	18	30
2.	Tuberculosis	10	16
3.	Peptic ulcer disease	26	43
4.	Appendicular	2	3
5.	Malignancy	4	6
	Total	60	100

32 (53%) cases had undergone primary repair, 14 (23%) resections and exteriorisation of bowel followed by 10 (16 %) resections and primary anastomosis (N= 60).

Table 3. Distribution according to types of Surgical Procedure Performed.

Procedure	Number	Percentage
Primary repair	32	53
Resection and primary anastomosis	10	16
Resection and exteriorisation of bowel	14	23
Palliative drainage	4	6
Total	60	100

There were 8 (14%) deaths in our patients, while 52 (86%) patients were discharged. Majority of the patients in our study were discharged (N= 60).

Table 4. Distribution of patients according to outcome.

Outcome	Number	Percentage
Death	8	14
Discharged	52	86
Total		

Figure: Showing multiple ileal perforation

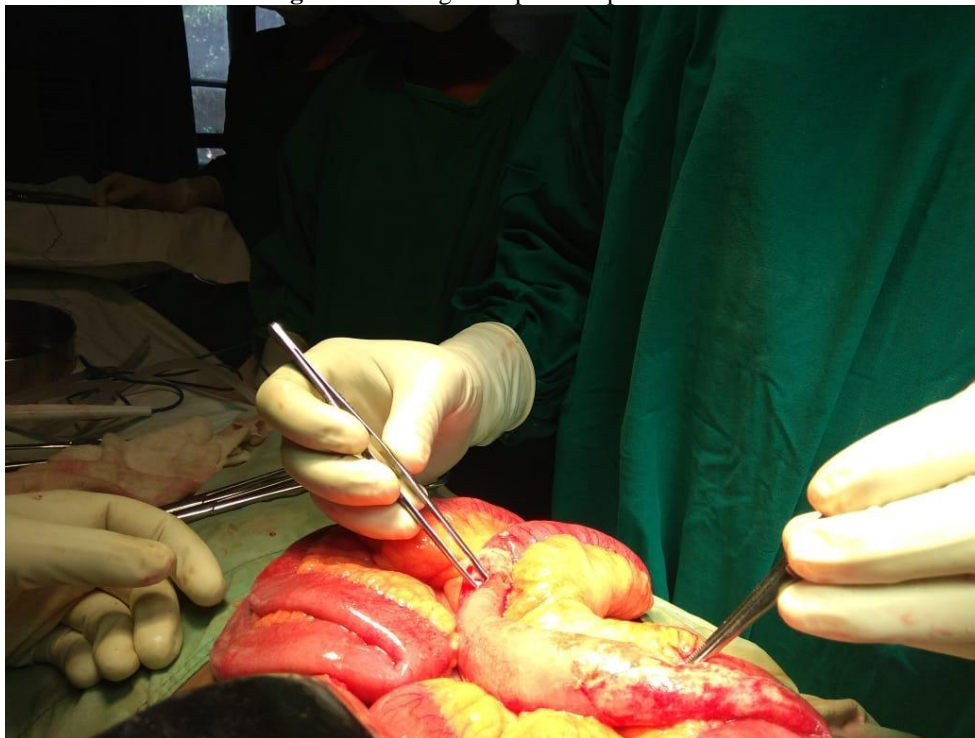


Figure: Showing Resection & Anastomosis



V. Discussion

Perforation peritonitis is one of the most common surgical emergencies that we are dealing daily and especially in developing nations like India⁷. Poor socioeconomic status and insanitation is responsible for the high prevalence of *Helicobacter pylori* infection and perforation in the first part of the duodenum. This is in sharp contrast to the developed countries where *Helicobacter Pylori* infection is rapidly declining as is the incidence of duodenal perforations.⁸

This study outlines the etiology, clinical feature, and outcomes of surgically managed peritonitis in a tertiary care center in Rohilkhand Medical College and Hospital, Bareilly.

Most of the patients 40% presented in the fourth decade of life in the age group 31-40 years with a male preponderance which is similar to 39% in the same age group reported by Akireddy RGR and Kumar KS in their case series of 100 patients of perforation.⁹ Mewara BC et al reported a mean age of 40.29 years and Atamanalp et al a mean of 36.3 years¹⁰.

In our study peptic ulcer disease (37%) was most common cause of perforation peritonitis followed by enteric perforation (30%) and tubercular perforation. Most of the patient of peptic ulcer diseases is due to prolonged intake of NSAIDs. In a study by LA Desa¹¹, 32.29% cases were of duodenal ulcer perforation, 27.33% were ileal perforation and 18% were of appendicular perforation. The most common complaint noticed in the study was abdominal pain followed by fever, abdominal distension, vomiting and constipation and the same being reported by Abdullah et al (2011).¹² Ambikavathy et al (2013)¹³ and Shaikh et al (2009)¹⁴. In this study all the patient of duodenal perforation was managed surgically by modified GRAHAM'S PATCH repair, Enteric Perforation was treated by ileostomy in most cases with primary closure in young and early cases. In some cases of multiple ileal perforation we did resection of perforated portion portion of ileum and then end- end anastomosis of ileum I two layer with vicryl (2-0). In present study mortality rate was 14% which is similar to many studies being done in Indian subcontinent and western countries. Various comparable studies have observed the overall in present study patient in whom duration of illness was more than 24 hours; mortality rate was more than those who were operated early. Patients presented late mainly because of poor socioeconomic status, poor transportation facility and misdiagnosed patient. The mortality and morbidity in perforations can be reduced by interplay of a large number of factors which include early admission to the hospital, early diagnosis, prompt resuscitation, early surgical intervention and good surgical technique.

VI. Conclusion

A total of 60 patients were studied. Peptic ulcer disease was most common cause of peritonitis. Since most of the patients arrive at tertiary care centre after an interval of 1-2 days, so prompt diagnosis and management of such patients are required to prevent mortality.

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