



A RETROSPECTIVE CLINICAL STUDY OF PERFORATION PERITONITIS IN RURAL AREA IN ANDHRA PRADESH

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ABSTRACT

Background Peritonitis due to perforation of the gastrointestinal tract is the most common surgical emergency all over the world [1]. The spectrum of etiology of perforation differs from its western counterpart [2]. The majority of patients present late, with purulent peritonitis and septicemia [3]. Surgical treatment for perforation peritonitis is highly demanding and very complex. The combination of improved surgical technique, antimicrobial therapy, and intensive care support has improved the outcome of such cases [4]. Objective of this study was to highlight the clinical presentation, causes of perforation, site, surgical treatment, postoperative complications, and mortality at government medical college, Kadapa which is a teaching hospital. **Methods** This retrospective clinical study was conducted in government medical college, Kadapa, Andhra Pradesh, India over a period of 2 years from November 2020 to October 2022 in 50 pts who are admitted and operated for perforation peritonitis. **Results:** The most common cause of perforation peritonitis in our study was a duodenal ulcer (~42%) followed by typhoid (24%), traumatic (16%), appendicular (6%), and tubercular (4%), malignancy with perforation (1%) cases. Male:Female ratio was 1.7. Peak incidence was noted between 40 to 50 years and the mean age group 46 years with standard deviation 10.8. **Conclusion:** Spectrum of perforation peritonitis cases in this part of world is different from developed western countries. It is different in respect of younger age at presentation, site of perforation, and etiological factors. Infective pathology makes up to a quarter of total cases in the developing world. The developing world has more perforation peritonitis cases involving the upper gastrointestinal tract, while the western world has a predominance of lower gastrointestinal tract perforations.

KEYWORDS : Gastrointestinal tract, perforation, peritonitis, etiology, pneumoperitoneum, exploratory laparotomy, seasonal variation

INTRODUCTION

- Perforation peritonitis is one of the commonest surgical emergencies in our country as well as in the RIMS hospital. Despite advancements in surgical techniques, anti-microbial therapy and intensive care, management of peritonitis continues to be highly demanding, difficult and complex (5,6)
- Peritonitis usually 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 (7).
- The diagnosis is based mainly on clinical grounds. Plain Xray, ultrasound and CT scan are the tools that can ascertain the diagnosis. However diagnostic laparoscopy can be helpful in some cases. The study has been carried out to evaluate various etiological factors, modes of clinical presentation, morbidity and mortality pattern of different types of perforation peritonitis presented in RIMS Hospital.

MATERIALS AND METHODS

This retrospective study included 50 patients admitted in GMC, Kadapa perforation peritonitis, conducted in the surgical unit, Department of General Surgery, India, over a period of 2 years

Inclusion Criteria

- All cases of peritonitis due to perforation of the gastrointestinal tract were included in this study.

Exclusion Criteria

- All cases of primary peritonitis, corrosive, and postoperative peritonitis leakage were excluded from the study.

Methodology

All patients were studied in terms of clinical presentation, cause of perforation, site of perforation, treatment, redo surgery, postoperative complications, and mortality. After establishing the clinical diagnosis of perforation peritonitis, all patients were resuscitated and prepared for exploratory laparotomy. All these patients underwent emergency exploratory laparotomy. After opening the abdomen, the source of peritonitis was found and controlled. With adequate procedures, the abdomen was washed with 3-5 l of warm normal saline, drain placed in the abdominal cavity, and abdomen closed with Prolene No.1. All patients were followed in the ward or ICU (intensive care unit) postoperatively with the cover of broad-spectrum antibiotics (cephalosporin + aminoglycoside + metronidazole) along with fluid and electrolyte balance. Drug regimen was not uniform in all patients. Data were collected and recorded on a predesigned research proforma made for this study, and SPSS 10 version was used to analyze the data.

Preoperative Data

- A total of 50 patients were studied. The mean age was 46 years (ranges from 16 to 72 years) and the standard deviation was 10.8. Majority of patients were males (32 males and 18 females). The male-to-female ratio was 1.7. The majority of patients presented with the history of abdominal pain (100%), abdominal distention (84%), altered bowel habit (80%), nausea or vomiting (62%), fever (66%), and shock (56%) due to septicemia. Clinical presentation of patients varied according to the site and cause of perforation. Patients of duodenal ulcer perforation usually had a short history of pain originated in the epigastric region or upper abdomen. About 18% patients gave the positive history of NSAID.
- Patients with ileocecal tuberculosis mostly presented with the history of abdominal pain, abdominal distention, altered bowel habit, and nausea or vomiting. Patients with

small bowel typhoid perforation also presented with the history of pain in the abdomen along with prolonged history of fever. Patients with perforated appendix presented with the typical history of pain starting in the periumbilical region then shifting to the right iliac fossa, or originating directly in the right iliac fossa, and then spreading all over the abdomen. 92 % patients had an evidence of pneumoperitoneum on chest X-ray in erect posture. Cases of multiple air fluid levels on abdominal X-ray in erect position were 6 %, electrolyte imbalance and hypokalemia 11 %, hyponatremia 14%, and raised blood urea and creatinine 21 %.

- The time taken for resuscitation, diagnosis, and optimizing the patient for surgery was less than 12 h in 31 % while more than 12 h in 19%

Age distribution in years

Table 1

AGE	MALE	FEMALE	TOTAL
<20	2	0	2
21-30	7	2	9
31-40	5	3	8
41-50	8	4	12
51-60	6	4	10
61-70	3	5	8
>70	1	0	1

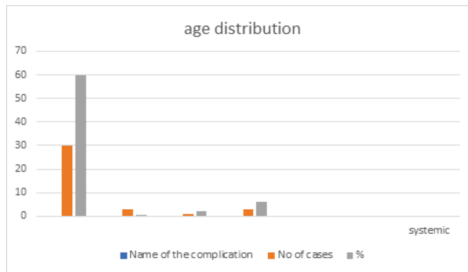


diagram 1

Preoperative data

Table 2

S NO	Variable	Number	Percentage
1	clinical presentation		
	abdominal pain	50	100%
	abdominal distention	42	84
	altered bowel habit	40	80
	nausea/vomiting	31	62
	fever	33	66
	septicemia	28	56
	positive history of nsaid	9	18
2	positive findings on investigations		
	pneumoperitoneum	46	92
	air fluid level	3	6
	hypokalemia	11	22
	hyponatremia	14	28
	raised blood urea and creatinine	21	42
3	time for resuscitation		
	>12 hours	31	62
	<12 hours	19	38
4	associated comorbidities		
	family history of tuberculosis	3	6
	pulmonary tuberculosis	5	10
	renal problem	6	12
	diabetes mellitus	9	18
	jaundice	-	-
	hypertension	9	18

Discussion In our study the most common cause of gastrointestinal perforation was peptic ulcers (21cases) followed by typhoid (12 cases), trauma (8 cases), acute appendicitis (3 cases), and tuberculosis (2 cases),in that order. Other causes were Meckel's diverticulitis(1), non-specific perforation(2), perforation with malignancy(1).

In peptic ulcer perforation, the most common site of perforation was first part of the duodenum. The site of typhoid perforation was the distal ileum, within two feet of the ileocecal junction. The sites of traumatic perforation were stomach, jejunum, ileum, colon, duodenum, and rectum, jejunum being the most common of all (8 cases). 66% of appendicular perforations occurred at the tip of the appendix and the rest at the base of appendix. The most common site of tubercular perforation was the terminal ileum (2cases)

In peptic ulcer perforation, primary closure with an omental patch repair was completed. In most enteric perforation cases with fecal peritonitis or with septic shock, an ileostomy was performed, primary repair with resection and anastomosis was performed in younger patients (<40 years) who had minimal fecal contamination and were hemodynamically stable with their biochemical parameters in a normal range. In traumatic

CONCLUSION

In conclusion, the spectrum of perforation peritonitis in India continues to differ from western countries. Perforations are seen mostly in the small bowel rather than the large bowel. Majority of perforations are noticed in the duodenum due to acid-peptic disease and small bowel typhoid followed by small bowel tuberculosis. Majority of perforations in the large bowel are due to tuberculosis and perforated appendix. Malignancy was the least common cause of perforation peritonitis in our setup. Aggressive resuscitation and early minimum surgery are required to avoid the high morbidity and mortality. Major complications noticed are the wound infection and wound dehiscence. Overall mortality was 5 %.

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Competing Interests

The authors declare that they have no competing interests.

Intraoperative findings

Table 3

INTRAOPERATIVE FINDINGS WITH ETIOLOGY AND SITE OF PERFORATION	N% TOTAL=50
A. PEPTIC ULCER PERFORATION	21(42%)
1. GASTRIC	7
2. DUODENAL	14
B. TYPHOID PERFORATION	12(24%)
1. DISTAL ILEUM(WITH IN 1.5 FEET FROM IC JUNCTION)	12(24%)
C. TRAUMATIC PERFORATION	8(16%)
1. STOMACH	1
2. DUODENUM	-
3. JEJUNUM	4
4. ILEUM	2
5. COLON	1
6. RECTUM	0
D. APPENDICULAR PERFORATION	3(6%)
1. TIP OF APPENDIX	2
2. BASE OF APPENDIX	1
E. TUBERCULAR STRICTURE PERFORATION	2(4%)
1. JEJUNUM	0
2. ILEUM	2
F. MALIGNANCY WITH PERFORATION	1(2%)

1. TRANSVERSE COLON	1
2. DESCENDING COLON	0
G. AMOEBIC PERFORATION	0
1. CAECUM	0
H. MECKEL'S DIVERTICULITIS WITH PERFORATION	1(2%)
1. MECKEL'S DIVERTICULUM	1
I. NON SPECIFIC PERFORATION	2(4%)
1. JEJUNUM	0
2. ILEUM	2

Post operative complications

Table 4

local	Name of the complication	No of cases	%
	Wound infection	30	60
	Paralytic ileus	3	6%
	Abdominal dehiscence	1	2
	Intra-abdominal abscess	3	6
	Fecal fistula	0	0
	Intestinal obstruction	0	0
systemic			
	Respiratory	7	14
	Renal	1	2
	Cardiovascular	1	2
	MOSF	1	2
	Septicemia	2	4

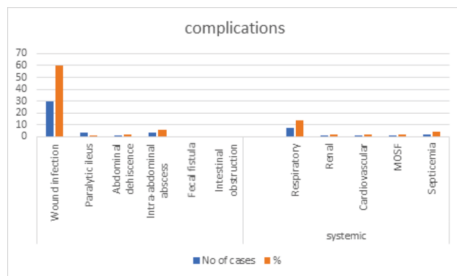


diagram 2

Mortality

disease	cause of death
typhoid perforation	ARDS
typhoid perforation	Septicemia
traumatic perforation of colon	Septicaemia
appendicular perforation	Septicaemia
malignant perforation	ARDS

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