



General Surgery

A CLINICAL STUDY AND MANAGEMENT OF PERITONITIS SECONDARY TO HOLLOW VISCUS PERFORATION

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ABSTRACT Peritonitis is defined as inflammation of the serosal membrane that lines the abdominal cavity and the organs contained in it. The introduction of infection into the sterile peritoneal environment through a bowel perforation and introduction of a chemically irritating material like gastric acid from a perforated ulcer causes peritonitis.

KEYWORDS : Peritonitis, Bowel Perforation, Peptic Ulcer, Management, Surgery, Followup

INTRODUCTION

Peritonitis is defined as inflammation of the serosal membrane that lines the abdominal cavity and the organs contained in it. The introduction of infection into the sterile peritoneal environment through a bowel perforation and introduction of a chemically irritating material like gastric acid from a perforated ulcer causes peritonitis. The spectrum of the etiology of perforation in tropical countries is different from its western counterpart. In contrast to western countries where lower digestive tract perforations predominate, upper gastrointestinal tract perforations constitute the majority of cases in India. 1 Important risk factors for perforation are smoking and the use of nonsteroidal anti-inflammatory drugs. 2 The different modes of presentation of cases may be misleading the diagnosis of its origin. Diagnosis is made by clinical examination and confirmed by the presence of pneumoperitoneum on radiographs. Perforation of the gastrointestinal tract leading to peritonitis, a common occurrence in this country, requires emergency surgical intervention as it is associated with significant morbidity and mortality rates.

AIMS AND OBJECTIVES

To study the frequency of peritonitis secondary to hollow viscus perforation in relation to - age, - sex, - anatomical location, - symptoms and signs, - reliability of investigation like Erect x-ray abdomen. To study the surgical management of peritonitis secondary to hollow viscus perforation in Government General Hospital, Kurnool. To study the variety of surgeries for peritonitis. To study the post-operative complications of peritonitis.

MATERIALS AND METHODS

This is a prospective study based on the analysis of 50 cases of hollow viscus perforation admitted to Government General Hospital, Kurnool, from October 2018 to February 2020. All patients admitted to the general surgical wards of Government General Hospital, Kurnool with signs and symptoms of peritonitis were included in the study. Peritonitis secondary to perforation of the esophagus, gall bladder, reproductive tract, and traumatic perforations were excluded from the study. All 50 patients admitted were evaluated by documenting the history, thorough clinical examination, routine laboratory investigations and specific investigations like erect X-ray abdomen and ultrasonography of abdomen. All 50 patients underwent emergency laparotomy, and the site of perforation, its pathological condition, and the amount of peritoneal contamination was determined. The operative procedures adopted were simple closure, omental patch closure, open appendectomy, resection, and anastomosis of bowel with loop ileostomy, primary closure of perforation with a loop ileostomy.

RESULTS

Fifty patients presenting to Government general hospital, Kurnool with peritonitis secondary to hollow viscus perforation were studied.

AGE INCIDENCE

In this study, most of the patients with hollow viscus perforation were above the age of 50 years, followed by the age group of 30-39 years.

AGE (YEARS)	FREQUENCY	PERCENTAGE
<19	1	2%
20-29	7	14%
30-39	11	22%
40-49	7	16%
>50	23	46%
TOTAL	50	100

SEX INCIDENCE

In this study, the maximum number of patients were found to be males (82%). Females constituted about 18% of the study group.

GENDER	FREQUENCY	PERCENTAGE
MALE	41	82%
FEMALE	9	18%
TOTAL	50	100

FREQUENCY OF ANATOMICAL SITE OF PERFORATION

The commonest site involved in hollow viscus perforation in this study was duodenal ulcer perforation (52%). The least common site of perforation in this study was jejunum (2%).

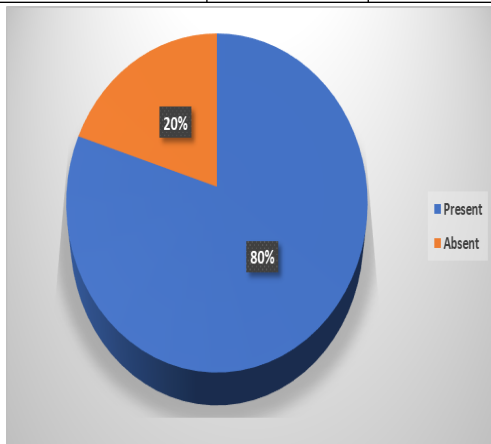
ANATOMICAL SITE INVOLVED	FREQUENCY	PERCENTAGE
STOMACH	7	14%
DUODENUM	26	52%
JEJUNUM	1	2%
ILEUM	4	8%
APPENDIX	10	20%
LARGE INTESTINE	2	4%
TOTAL	50	100

CLINICAL FEATURES

In this study, the most common presenting symptom was abdominal pain, which was seen in all the cases. The pain was diffuse in most of the cases. The second most common symptom was vomiting (80%). It is most commonly observed in patients presenting more than two days after the onset of pain. Fever is seen in nearly half of the cases.

DISTRIBUTION OF SIGNS

SIGNS	FREQUENCY	PERCENTAGE
Abdominal distention	38	76%
Guarding and rigidity	19	38%
Free fluid	47	94%
Dehydration	42	84%
Absent bowel sounds	40	80%
Obliteration of liver dullness	35	70%

**Pneumoperitoneum in X-ray abdomen****RISK FACTORS**

44% of the cases have multiple risk factors like drugs, smoking, alcohol, diabetes mellitus. Smoking and drugs (NSAIDs) are the most common risk factors. Twenty-three cases of the present study have smoking as a risk factor followed by drugs (20 cases), alcohol (17 cases) and diabetes mellitus in 8 cases

TYPES OF SURGERIES PERFORMED

The most common procedure done was omental patch closure in 33 cases (66%). The most commonly performed surgery for duodenal ulcer perforation was omental patch closure.

TYPE OF SURGERY	FREQUENCY	PERCENTAGE
Omental patch repair	33	66%
Primary closure alone	2	4%
Open appendicectomy	10	20%
Resection and anastomosis with ileostomy	1	2%
Primary closure with ileostomy	4	8%
total	50	100%

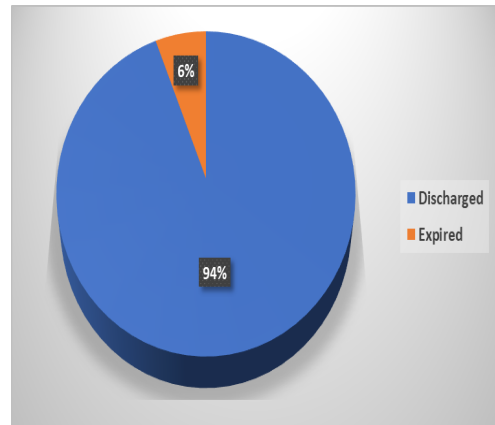
MORTALITY

In our study, the percentage of mortality is 6 %. Out of 50 cases, 3 cases expired (1 large intestinal perforation, one gastric ulcer perforation, and one duodenal ulcer perforation). One patient of large intestinal perforation due to ascending colon growth presented eight days after the onset of the pain abdomen. The patient was in hypovolemic and septic shock at the time of the presentation. The patient died because of electrolyte imbalance, ARDS, septicemia, and multiorgan dysfunction postoperatively. One case of gastric ulcer perforation had a previous history of coronary artery disease. The patient postoperatively developed supraventricular tachycardia and sudden cardiac arrest.

DISCUSSION

This study was conducted in the Government General Hospital, Kurnool. A total of 50 patients admitted to the department of General Surgery who satisfy inclusion criteria fixed during the study period were selected randomly. In this study, most of the patients with hollow viscous perforation were above the age of 50 years, followed by the age group of 30-39 years. The youngest patient in this study was 18 years who was having appendicular perforation, and the oldest patient is 80 years with appendicular perforation. In this study, duodenal ulcer perforation was more common in the age group of above 50 years, constituting 12 cases out of 26 cases of duodenal ulcer perforation. Most of the patients in our study are from a rural background and low socioeconomic status, which makes them

less to reach medical care. Hence the age of presentation is slightly greater when compared to other studies.

**OUTCOME FOLLOW UP**

Most of the patients did not turn up after two months in the study. So long term outcomes of the procedure could not be made out.

CONCLUSION

- Peritonitis secondary to hollow viscus perforation is more common in males
- The most common age group affected is 50 years and above.
- Most of these patients present with clinical signs of peritonitis 48 hours after the onset of pain.
- Duodenum (52%) is the most common site of perforation followed by appendicular perforation (20%), gastric perforation (14%), ileal perforation (8%), large intestinal perforation (4%) and jejunal perforation (2%). Diagnosis is made clinically and confirmed by the presence of pneumoperitoneum (80%) on radiographs.
- Laparotomy with the closure of the perforation with an omental patch (66%) is the commonest operative management for perforated peptic ulcer.
- The most common postoperative complication observed was wound infection.
- The overall mortality rate was 6%.

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