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Peritonitis Due To Hollow Viscus Perforation, A Clinical Retrospective Study in A Tertiary Health Care

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ABSTRACT

Background - 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.

Aim and Objective - 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.

Material and Method - This is a retrospective study based on the analysis of 50 cases of hollow viscous perforation admitted to General Surgery Department, F.M.Medical College and Hospital, Balasore, Odisha from December 2023 to November 2024.

Results - Most of the patients with hollow viscous perforation were above the age of 50 years, followed by the age group of 30-39 years. Maximum number of patients were found to be males (82%). Females constituted about 18% of the study group. Most common presenting symptom was abdominal pain.

Conclusion - Laparotomy with the closure of the perforation with an omental patch (66%) is the commonest operative management for perforated peptic ulcer.

Keywords: *Peritonitis, Bowel Perforation, Peptic Ulcer.*

1. 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 **[1,2,3]** . Important risk factors for perforation are smoking and the use of nonsteroidal anti-inflammatory drugs **[4]** .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 **[5,6]** .

2. AIMS A ND 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 General Surgery Department, F.M.Medical College and Hospital, Balasore, Odisha. To study different types of surgeries and post-operative complications of peritonitis.

3. MATERIALS A ND METHODS

This is a prospective study based on the analysis of 50 cases of hollow viscous perforation admitted to General Surgery Department, F.M.Medical College and Hospital, Balasore, Odisha from December 2023 to November 2024 . All patients admitted to the general surgical wards 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 speciifc 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. 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%).

4. RESULTS

Fifty patients presenting with peritonitis secondary to hollow viscous perforation were studied.

5. AGE INCIDENCE

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.

Age in Years	Frequency	Percentage (%)
<19	1	2
20-29	7	14
30-39	11	22
40-49	8	16
>50	23	46
TOTAL	50	100

6. 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

7. FREQUENCY OF A NATOMICAL 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

8. 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 sound	40	80
Liver dullness obliteration	35	90

PNEUMOPERITONEUM IN X-RAY ABDOMEN

Pneumoperitoneum	Frequency	Percentage (%)
Present	40	80
Absent	10	20
TOTAL	50	100

9. 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

10. 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.

11. DISCUSSION

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 80years 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 **[7]** .

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.

12. CONCLUSION

- Peritonitis secondary to hollow viscus perforation is more common in males
- T he 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.
- T he overall mortality rate was 6%.

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