

Clinical Evaluation and Management of Ileal Perforation

Pushpalatha Tanakala, K. L. Narasimha Rao, Malsur

Abstract: ***Introduction:** Perforation in the ileum is a common surgical emergency noted in the Indian subcontinent. The most common etiology is salmonella infection. In western countries, the most common etiology is neoplastic, traumatic, and mechanical in the decreasing order of incidence (1, 2, 3). The availability of modern facilities and advances in treatment regimens have not led to a decrease in the high mortality and morbidity associated with ileal perforation. **Materials and Methods:** All consecutive patients presenting to the hospital with signs of hollow viscus perforation at GSL Medical College and General Hospital during the period of September 2017 to August 2019 will constitute the material for the study. All patients operated for Ileal perforation who satisfy both inclusion and exclusion criteria during the above time period will be included after taking consent. All statistical analyses will be performed using SPSS 20.0 version and MS EXCEL-2007. All descriptive values will be presented as Mean \pm Standard deviation and percentages. A chi-square test will be performed to find association categorical variables. For all statistical analyses, $p < 0.05$ is considered statistically significant. **Results:** Thirty-one patients who were diagnosed to have Ileal Perforation have been admitted between September 2017 to August 2019 were included in this study. Patients have been grouped into etiological categories. Namely, typhoid, non-specific, tuberculosis, blunt trauma, stab injury, roundworms, and Meckel's diverticulum. **Conclusion:** Etiology, presentation, management and outcome of patients with ileal perforations were studied with emphasis on typhoid, non-specific, TB, round worms, meckels, stab injury and traumatic perforations and the factors that influenced the prognosis. The type of surgical procedure did not influence outcome, either morbidity or mortality.*

Keywords: ileal perforation, etiology, evaluation, management, typhoid, emergency surgery

1. Introduction

Perforation in the ileum is a common surgical emergency noted in the Indian subcontinent. The most common etiology is salmonella infection. In western countries, the most common etiology is neoplastic, traumatic, and mechanical in the decreasing order of incidence^(1, 2, 3).

Recent advances have led to a definite change in the trends in ileal perforations in terms of causes, management, and outcomes.

The availability of modern facilities and advances in treatment regimens have not led to a decrease in the high mortality and morbidity associated with ileal perforation.

In the presence of advanced anesthesia of today and tremendous improvement in resuscitative measures, every patient diagnosed to have ileal perforation is universally recommended to be treated surgically. The purpose of the operative protocol is to correct the pathology while avoiding severe accidents and to adopt a surgical procedure that is associated with minimal complications⁽⁴⁾.

This study has been undertaken in order to contribute to the improvement in the Knowledge of this disease. This study aims to study clinical features, management, complications, and prognostic factors affecting the outcome in ileal perforations⁽⁴⁾.

Aim

To determine the clinical manifestations and predisposing factors leading to ileal perforation and factors which determine the need for emergency surgery.

Objectives

1) To assess the incidence of ileal perforation.

- 2) To evaluate the presenting symptoms in patients with ileal perforation.
- 3) To assess the predisposing factors leading to ileal perforation.
- 4) To find out the determinants for emergency surgery.

2. Materials and Methods

All consecutive patients presenting to the hospital with signs of hollow viscus perforation at GSL Medical College and General Hospital during the period of September 2017 to August 2019 will constitute the material for the study. All patients operated for Ileal perforation who satisfy both Inclusion and exclusion criteria during the above time period will be included after taking consent.

Inclusion criteria

- 1) Patients presenting to the hospital with signs of hollow viscus perforation
- 2) Patients with an intra-operative finding of Ileal perforation
- 3) Patients who consented for emergency exploratory laparotomy.

Methodology

- Demographic Data of all Patients presenting with hollow viscus perforation will be recorded in a proforma.
- Patients with ileal perforation will be identified from the group after doing a clinical examination and USG abdomen & X-ray abdomen
- Patients with a history of typhoid fever and tuberculosis in the past will be identified.
- Patients with signs of peritonitis, shock, and septicemia will be considered for emergency surgery.

Statistical analysis

All statistical analyses will be performed using SPSS 20.0 version and MS EXCEL-2007. All descriptive values will be presented as Mean ± Standard deviation and percentages. A chi-square test will be performed to find an association between categorical variables. For all statistical analyses, p <0.05 is considered statistically significant

3. Results

Etiology

The commonest cause of ileal perforation was typhoid, followed by the nonspecific, roundworm, TB, stab, Meckel's, and blunt trauma causing perforation.

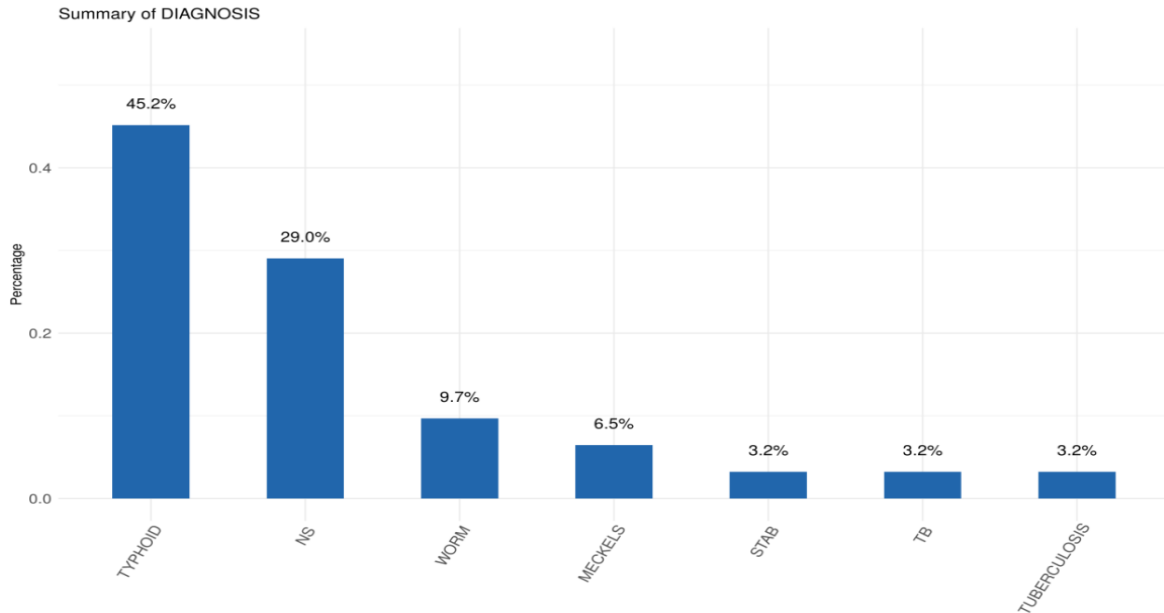


Diagram: 1

Table 16: Etiology of Ileal Perforations

Diagnosis	Frequency	Percent
Typhoid	14	45.16
Nonspecific	9	20.03
TB	2	6.45
Stab injury	1	3.22
Roundworms	3	9.67
Meckel's	2	6.24
Total	31	100

Table 2: Age and Sex Incidence in Ileal Perforations

Age	Number	Percentage
21 - 30	3	9.67
31 - 40	18	58.06
41 - 50	7	22.58
51 - 60	2	6.45
61 - 70	1	3.22
Total	31	100

Symptoms and Signs

Most of the patients presented with symptoms and signs of peritonitis. The commonest symptoms were abdominal pain, fever, and vomiting. The commonest signs were abdominal tenderness, guarding, intra-abdominal free fluid, distension, and dehydration. Most patients of typhoid gave a history of fever. Symptoms and signs are shown in. Most common presenting symptom in the study is diarrhea followed by fever.

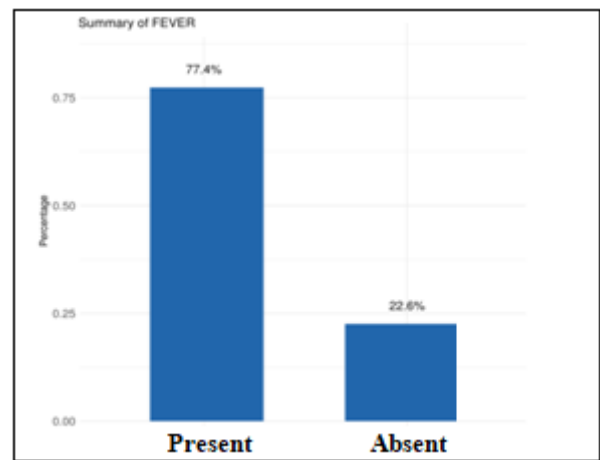


Diagram 4: Incidence of Fever

In this study 77.4% patients presented with fever and 22.6% patients did not have fever at the time of presentation

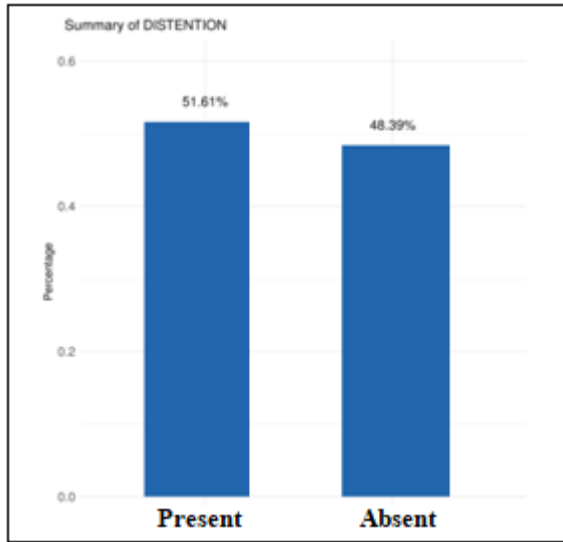


Diagram 5: Incidence of Distension of Abdomen

In this study 51.61% patients presented with constipation and 48.3% patients had no distension of abdomen.

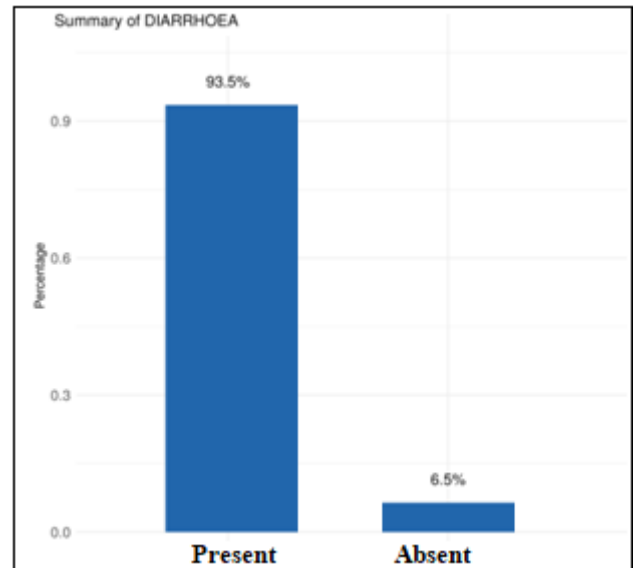


Diagram 7: Incidence of Diarrhoea

In this study 93.5% patients presented with diarrhoea and 6.5% patients had no diarrhoea.

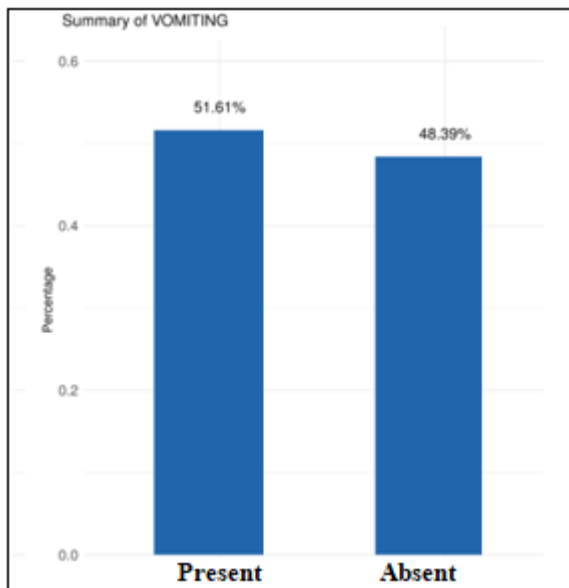


Diagram 8: Incidence of Vomitings

In this study 51.61% patients presented with vomiting and 48.39% patients had no constipation.

Table 19

Diagnosis	Number Of Perforations			Total
	1	2	3	
TYPHOID	10	2	2	14
NON SPECIFIC	9	0	0	9
STAB	0	0	1	1
TUBERCULOSIS	2	0	0	2
WORM	3	0	0	3
MECKELS	1	0	1	2
TOTAL	25	2	4	31

Table 18

Diagnosis	Surgery Done		Total
	2layered Closure	Resection and Anastomosis	
Typhoid	14	0	14
Non Specific	8	1	9
Meckels	0	2	2
Stab Injury	1	0	1
Tuberculosis	2	0	2
Worms	0	3	3

Table 20

Complications	Simple closure	Resection-anastomosis	Total
Wound Infection	7	4	11
Wound Dehiscence	3	1	4
Faecal Fistula	1	0	1
Respiratory	5	1	6
Mortality	3	0	3
Patients with complications	19(58.9%)	6(18.6%)	25(77.5%)

Table

Complications	Typhoid perforations			Nonspecific perforations		
	Simple Closure	Resection- Anastomosis	Total	Simple Closure	Resection-Anast	Total
Wound Infection	5	0	5	2	4	6
Wound Dehiscence	3	0	3	1	1	2
Faecal Fistula	1	0	1	0	0	0
Respiratory	4	0	4	1	1	2
Mortality	2	0	2	1	0	1
Patients with Complications	15	0	15	5	6	11

4. Summary and Conclusions

This study was conducted from September 2017 to August 2019. It includes thirty one cases of perforation admitted to G S L General Hospitals in that period. Etiology, presentation, management and outcome of patients with ileal perforations were studied with emphasis on typhoid, non-specific, TB, round worms, meckels, stab injury and traumatic perforations and the factors that influenced the prognosis.

Typhoid is the most common cause of Ileal perforation, followed by non-specific perforations. Patients have a male preponderance and are usually in the second and third decades of their lives. Widal serology is a useful test in the diagnosis of typhoid fever.

Histopathology is useful in the diagnosis of tubercular perforations but not very useful in the diagnosis of typhoid. Typhoid perforations have a significantly higher morbidity rate than non-specific, round worms, meckels, stab injury and traumatic perforations. Mortality is more in case of typhoid ileal perforation. Traumatic perforations have a good outcome. The type of surgical procedure did not influence outcome, either morbidity or mortality.

Morbidity was significantly influenced by age greater than 50, hypoalbuminemia, azotemia

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