

EPIDEMIOLOGICAL STUDY OF ILEAL PERFORATION IN PATIENTS PRESENTING TO TERTIARY CARE CENTRE IN NORTH-WEST RAJASTHAN

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ABSTRACT

Objective: We organized an investigation to study epidemiology and various factors affecting morbidity and mortality of ileal perforation.

Methods: This study is a hospital-based prospective and descriptive study of patients admitted from November 2020 to October 2021. Fifty patients of ileal perforation who were admitted in P.B.M. Hospital during this period have been included in the study.

Results: Typhoid fever accounting for 34% of total cases, 42% were treated by ileostomy, 34 had complications. Out of 50 cases, 34 had complications around half cases had wound dehiscence. Ileostomy was the most common (n=21, 42%) surgical procedure done in cases of ileal perforation. Wound dehiscence was the most common (n=19, 55.88%) post-operative complication observed among study subjects.

Conclusion: Early diagnosis is essential since a proper diagnosis and its therapy are essential to the prognosis. Traumatic perforations have a positive outcome since the lag time is usually short. The kind of surgery performed has no effect on the death rate; however, stoma development is linked to less problems.

Keywords: Epidemiology, Ileal perforation peritonitis, Morbidity, Mortality.

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INTRODUCTION

One of the most common emergency procedures performed in a surgical practice for a case of acute abdomen is a hollow viscus perforation leading to peritonitis. One of the most common surgical emergencies that surgeons deal with is intestinal perforations [1,2]. In underdeveloped nations, ileal perforation peritonitis is a common surgical emergency [3]. There are two types of ileal perforations: Traumatic and non-traumatic.

Typhoid fever, intestinal tuberculosis, round worm infestation, malignant small intestinal tumors, etc. are etiological variables linked to non-traumatic perforations [4]. Traumatic perforations can occur as a result of piercing abdominal trauma or blunt abdominal trauma, both of which can cause ileal perforation. Other abdominal viscera may or may not also be injured [5]. Typhoid fever incidence is declining globally, although it is still endemic in India [6]. The most frequent causes of ileal perforation include typhoid, TB, trauma, and nonspecific enteritis [7]. Typhoid fever has a documented incidence of perforation ranging from 0.8% to 18% [8]. After typhoid fever, tuberculosis is the second most common cause of minor intestinal perforations in India, accounting for 5 to 9% of all cases [9].

Due to both the rising incidence of gastritis in the general population and the rising use of over-the-counter NSAIDs, which eliminate prostaglandins' gastroprotective properties, perforations are becoming more common. When a hollow viscus perforation is identified on an erect X-ray abdomen, the mainstay of treatment is an emergency exploratory laparotomy and perforation closure. Despite the fact that early detection and treatment have significantly reduced perforation-related death rates, the condition's associated morbidity and the need for further surgery continue to be major health concerns. The aim of this investigation was to study epidemiology and various factors affecting morbidity and mortality of ileal perforation.

METHODS

Study setting

This was a hospital-based study.

Study design

This was a prospective and descriptive study.

Study duration

The duration of the study was 12 months, November 2020–October 2021.

Study place

The study was conducted at Department of General Surgery, S. P. Medical College, Bikaner.

Sample size

Fifty patients of ileal perforation who were admitted in P.B.M. Hospital during this period have been included in the study.

Inclusion criteria

Patients with both traumatic and non-traumatic ileal perforation and confirmed on laparotomy were included in the study.

Exclusion criteria

Age <14 years was excluded from the study.

Study strategy

In our study, the clinical characteristics, investigations, surgical techniques, post-operative morbidity, mortality, and the result of ileal perforation were all examined. Traumatic perforations were documented with regard to the manner of damage, the timing of the injury, and in particular the presence of pain, fever, vomiting, abdominal distension, and constipation. The following were noted: Vital signs, level of hydration, abdominal distension, discomfort, guarding, and rigidity, liver dullness obliteration, and presence of free fluid. A thorough peritoneal lavage was performed and the intraoperative findings, including the location, number, and size of perforations, the severity of peritonitis, and the condition of the gut, were noted. Operative steps were taken in accordance with the situation. Several surgical methods, including primary repair of perforation, resection and anastomosis, stoma formation, and stoma formation combined with resection and anastomosis, were performed in our study.

Ethical approval

The study begun after obtaining ethical approval from the Ethical Committee of the medical college.

Data analysis

Frequencies, numbers, proportions, and measures of central tendency were utilized to examine the data using Microsoft Excel and the statistical program SPSS.

RESULTS

The most common cause of ileal perforation in our study was typhoid fever accounting for 34% of total cases followed by non-specific enteritis 32%. Typhoid fever was the most common cause of ileal perforation in tropical countries. Maximum 42% were treated by ileostomy followed by primary repair in (30%). Out of 50 cases, 34 had complications around half cases had wound dehiscence.

Ileostomy was the most common (n=21, 42%) surgical procedure done in cases of ileal perforation followed by primary repair (n=15, 30%) and resection and anastomosis (n=11, 22%) (Table 2).

Wound dehiscence was the most common (n=19, 55.88%) post-operative complication observed among study subjects followed by respiratory complications (n=6, 17.64%) and burst abdomen (n=4, 11.76%) (Table 2).

DISCUSSION

Typhoid fever, which caused 34% of all ileal perforations in our sample, was followed by non-specific enteritis, which caused 32% (Table 3). In tropical nations, typhoid illness was most frequently to blame for ileal perforation. In the Karmakar series, 56.6% of cases of ileal perforation were caused by typhoid fever [10], 62.2% in a study by Wani *et al.* [11], and 65.62% in a study by Khalid *et al.* [12].

Table 1: Etiology of ileal perforations

Diagnosis	Frequency	Percentage
Typhoid	17	34
Non-specific enteritis	16	32
TB	11	22
Blunt trauma	2	4
Stab injury	1	2
Iatrogenic	1	2
Ulcerative colitis	2	4
Total	50	100

Table 2: Various post-operative complications

Complications	Frequency (n=34)	Percentage
Wound dehiscence	19	55.88
Burst abdomen	4	11.76
Abdominal collection	1	2.9
Post-operative leak	3	8.8
Fecal fistula	1	2.9
Respiratory complications	6	17.64
Total	34	100

Table 3: Various surgical procedure done in cases of ileal perforation

Procedure	Frequency	Percentage
Primary repair	15	30
Resection and anastomosis	11	22
Ileostomy	21	42
Ileostomy with resection and anastomosis	3	6
Total	50	100

In this study, non-specific perforation, which accounted for 32% of cases, was the second most frequent cause. In the series of Verma *et al.* (56%) [13] and Bhalerao, non-specific perforations were the most frequent cause of small bowel perforation. The male to female ratio in this study was 2.12:1, predominately male. Similar results have been reported in published literature, with reported ratios ranging from 2.3:1 to 6.1:10, [14,15]. In our study, no patients received conservative care; instead, every patient underwent an exploratory laparotomy. Primary repair of perforation, resection and anastomosis, stoma creation, and stoma formation together with resection and anastomosis were among the surgical treatments carried out in our study. Most common procedure done in our study was Exploratory laparotomy followed by stoma formation (42%) which is in consistent with Khalid *et al.* study, 69% of cases were managed by loop ileostomy [12].

About 64% of all patients in this series experienced complications overall. According to published research, the morbidity rate for typhoid perforations ranges from 28.5% to 81% [16-19]. Typhoid perforations had a 70% complication rate in this series. When compared to published studies, the most frequent problems were wound infection, wound dehiscence, fecal fistula, and respiratory difficulties [20,21]. Only one patient had a fecal fistula. In this series, mortality was 12%.

The morality rate among typhoid perforation patients was 16.6%. Rates place the percentage between 3 and 60%, though it has been declining. This difference displays a statistically significant tendency in favor of significance. Because of the shorter time gap between the injury and hospital admission, there was no death among patients with blunt trauma or stab perforation.

CONCLUSION

The most frequent cause of ileal perforation is typhoid, which is followed closely by non-specific enteritis. Patients tend to be male and are often in their second or third decade of life. In cases with multiple perforation widespread peritonitis and with longer lag times, morbidity is higher. Traumatic perforations have a positive outcome since the lag time is usually short. The kind of surgery performed has no effect on the death rate; however, stoma development is linked to less problems. Early diagnosis is essential since a proper diagnosis and its therapy are essential to the prognosis.

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AUTHORS' CONTRIBUTION

All the authors have contributed equally.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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