

# Ileostomy in the Treatment of Typhoid Enteric Perforation Among Patients Presenting Late in The Hospital

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## ABSTRACT

**Introduction:** Typhoid enteric perforation is a communal acute emergency of abdomen in our hospital settings. Maximum patients in Pakistan come from rural zones and have a serious illness when presented in the later final stages.

**Objective:** To govern the importance of an ileostomy in cases of late presentation with enteric perforation.

**Study Design:** A retrospective study.

**Place and Duration:** In the surgical Department of Islam Medical College and Teaching Hospital Sialkot for one year duration from July 2020 to July 2021.

**Methods:** 52 total patients of typhoid enteric perforation were included in our department. 5 to 32 years was the age range of patients with an average age of 16 years. Most of these patients have complaints of fever, abdominal pain, abdominal distension and vomiting

**Results:** 52 patients with late presentation of typhoid perforation were alienated into 2 groups. All cases of group A underwent laparotomy and perforation exteriorization was done as loop ileostomy. In group A, when exteriorization was performed as the first procedure, fecal fistula was later developed in 12 cases. Ten of these cases had to be re-examined and the second perforation was found to be close to the original one. The mortality was observed in three cases.

**Conclusion:** In a relatively normal-looking intestine, restoration of the margin, closure of the two layers of perforation, and ileostomy near the perforation are safer in the case of late onset of typhoid fever enteric perforation.

**Keywords:** typhoid perforation, double-layer closure and ileostomy

## INTRODUCTION

Typhoid enteric perforation is a communal acute emergency of abdomen in our hospital settings. Maximum patients in Pakistan come from rural zones and have a serious illness when presented in the late final stages with an average delay of 2-3 days from the inception of acute ailment<sup>1-2</sup>. These cases are associated with very high mortality.

Typhoid fever, also called intestinal fever, is a life-threatening multi-organ disease, mainly caused by *Salmonella typhi*, *Salmonella Paratyphi* and *Salmonella enterica* which may cause peritonitis and typhoid perforation<sup>3-4</sup>. Diagnosis is difficult because patients become ill some time before the perforation, which usually occurs in the second week of the disease. Typhoid intestinal perforation (TIP) mortality rate has been stated to be amid 6% and 63%. The mortality perioperatively rises to 80% in patients with delayed perforation<sup>5-6</sup>.

The intestinal perforation treatment is therapeutic and diagnostic challenge for surgeons working in countries with inadequate resources<sup>7-8</sup>. Surgical treatment is well-thought-out to be an optional treatment to expand the survival chances in patient's intestinal perforation, usually with a late onset. These patients' treatment poses numerous challenges for the specialist. Maximum of these cases were treated in rural hospitals, where very limited resources are given to the patients<sup>9</sup>. The effects of typhoid perforation management can be particularly tragic in countries which are under developing, where the disease is associated with poor sanitation, lack of clean water, inappropriate and massive use of antibiotics against *S. Typhi* and lack of diagnostic equipment<sup>10-11</sup>. Delayed admissions, delayed surgery, the number of perforations, insufficient preoperative resuscitation, and the fecal peritonitis extent have a substantial impact on the prognosis of the patient survival.

The purpose of the study is to govern the importance of an ileostomy in cases of late presentation with intestinal perforation.

## MATERIAL AND METHODS

This is a retrospective study held in the surgical Department of Islam Medical College and Teaching Hospital Sialkot for one year duration from July 2020 to July 2021. 52 total patients of typhoid enteric perforation were included in our department. 5 to 32 years was the age range of patients with an average age of 16 years.

Most of these patients have complaints of fever, abdominal pain, abdominal distension and vomiting (Table 1).

Table 1: Symptomatology of cases of enteric fever patients

Symptom	No. of Cases
Abdominal pain	52
Fever	38
Vomiting	39
Abdominal distension	43

As early as possible, doctors saw these patients, a quick history and clinical examination was performed. All patients were maintained with IV-line, nasogastric tube placement, and catheterization. Complete blood counts, random glucose, urea and electrolytes, hepatitis B surface antigen, hepatitis C virus antigen were done in all patients. Ultrasound abdomen and emergency chest radiography were accomplished in all patients. In all of these cases, there was gas under the diaphragm in the X-rays chest of the PA view. After proper hydration, a laparotomy was performed while the patient was stabilized.

## RESULTS

52 patients with late presentation of typhoid perforation were alienated into 2 groups. There were 26 patients in group A, 26 in B group. All cases of group A underwent laparotomy and perforation exteriorization was done as loop ileostomy. The group B patients endured laparotomy, refreshed the edges of the perforation, and the perforation was closed in two layers with vicryl suture. The healthy-looking proximal ileum exteriorization was completed as diverting loop ileostomy was performed routinely in every patient. In group A, when exteriorization was performed as the first procedure, fecal fistula was later developed in 12 cases. As the feculent material begins to flow from the drain. Ten of these cases had to be re-examined and the second perforation was found to be close to the original one. As seen in Table 2, mortality was observed in three cases.

Fecal fistula, which was treated with parenteral nutrition, conservative treatment and bowel rest developed in only two patients in Group B, and among these patients the perforation was

closed in double layers and a loop ileostomy was done from the proximal healthy ileum.

Table 2: Outcomes of treatment of enteric perforation patients presenting late

Complication	Group A	Group B
Wound infection	13	2
Partial wound dehiscence	4	2
Faecal fistulae	12	1
Re-exploration	10	None
Mortality	3	None

## DISCUSSION

Typhoid fever is quite common in some parts of our country, mainly due to poor sanitation and uncontrolled waste disposal system. Typhoid fever is a serious fever disease, mainly caused by *Salmonella typhi*<sup>12-13</sup>. The deadliest complications of typhoid fever are perforation of the intestine and intestinal bleeding as a result of Peyer's tufted necrosis in the terminal ileum. Typhoid ulcers can occur anywhere in the rectum from the stomach, but this mainly affects the terminal ileum because the number of Peyer patches in the terminal ileum has increased<sup>14-15</sup>. Typhoid fever can occur at any age. The highest incidence of this disease occurs between 5 and 19 years of age. From the age of 20, the incidence is declining, probably due to resistance to clinical or subclinical infections. Perhaps the safest and easiest treatment for an ileal perforation is to close the perforation by ileostomy. Other methods include closure of the primary perforation, wedge excision, or segmental resection, and anastomosis, as well as lateral ileo-transverse anastomosis after closure of the primary perforation<sup>16-17</sup>. Primary closure is performed only when the patient presents early and when the gut appears healthy. Sepsis and intestinal inflammation make the anastomosis dangerous, so primary closure should be avoided in patients who report late<sup>18-19</sup>. Our experience shows that instead of exteriorizing the perforation as loop ileostomy, the resection of multiple or very inflamed perforations in an ileum segment and exteriorizing both ends as mucus fistula and ileostomy, or double layered perforation closure in combination with relatively less inflamed ileum ileostomy is a safer choice in patients presenting late with typhoid enteric perforation<sup>20-21</sup>.

## CONCLUSION

We concluded that exteriorizing perforation carried by the ileum as loop ileostomy is not a very safe procedure, as the chance of a second perforation around the primary perforation is quite high in the highly inflamed terminal ileum causing very high mortality and fecal peritonitis. In a relatively normal-appearing ileum, we recommend marginal freshening, double-layer closure of the perforation with a bypass ileostomy approximately 15-20 cm proximal to the perforation as a safer procedure for the late presentation of typhoid enteric perforation.

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