

Original Research Article

A Prospective Study on Management of Typhoidal Ileal Perforation

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Received: 18-11-2020 / Revised: 19-12-2020 / Accepted: 19-01-2021

Abstract

Background: Enteric perforation is most frequent encountered acute surgical emergency in Northern India and immediate warrants operative intervention. But the kind of intervention, whether primary repair or ileostomy is always a topic of debate for a long era. **Aim:** To determine the role of ileostomy in the management of ileal perforations caused by typhoidal disease. **Methods:** Sixty cases of ileal perforation were studied prospectively over a period of 03 years from July 2016 to June 2019 at Anugrah Narayan Magadh Medical College and Hospital, Gaya and information had been accumulated on clinical presentation, demographic profile and laboratory data. Details were obtained for operative findings and appropriate method of operative intervention done and later postoperative course of the patients were follow up. **Results:** Ileal perforation occurred mostly in young males (age 28.2±10.9 years). Male and Female ratio has been found to be 5: 1. 67.3% of patients underwent primary closure, while 32.7% underwent ileostomy. Nature of clinical presentation, laboratory data and operative findings in both groups has been thoroughly analysed. **Conclusions:** Authors have carried out this study to label some of the preoperative and intraoperative factors, which can serve as a guideline for decision making in operative intervention in a specific patient.

Keywords: Ileostomy, Morbidity and mortality, Primary repair, Typhoid ileal perforation

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Introduction

Intestinal perforation is a common cause of peritonitis necessitating emergency surgical intervention. Perforation of the bowel from typhoid perforation is a serious abdominal complication. The prevalence of typhoid fever is gradually decreasing worldwide; however, it still remains endemic in the Indian subcontinent. Intestinal perforation continues to be the most frequent cause of its high morbidity and mortality[1-4]. In general, and perforation occur in the terminal ileum secondary to necrosis of Peyer's patches at 2-3 weeks after the onset of the disease. Mortality rates of typhoid intestinal perforation (TIP) cases are reported to be between 3% to 10%. Perforation of terminal ileum is a cause for acute obscure peritonitis, heralded by exacerbation of abdominal pain associated with tenderness, rigidity and guarding, more pronounced over right side of the lower abdomen. However, for many patients in a severe toxic state, there may be obscured clinical features with resultant delays in diagnosis and adequate surgical intervention.[5] While early surgical procedures are regarded as definitive treatments along with pre-operative resuscitation and post-operative intensive care, the methods that should be used in surgery are still contentious. Present study to evaluate morbidity and mortality of those patient who underwent surgical treatment either and with primary Ileostomy and Proximal diverting loop ilostomy after closer of the main perforation.

Material and Methods

This is a prospective, unicentric, comparative study was conducted at Department of Surgery, at Anugrah Narayan Magadh Medical College and Hospital, Gaya. The study was conducted over a period over a period of 03 years, from July 2016 to June 2019 A total of 60 patients with typhoidal perforation were included with this study.

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Inclusion criteria

1. Out patients presenting to present emergency with signs of hollow viscus perforation.
2. Patients with an intra-operative finding of Ileal perforation.
3. Patients who consented for emergency exploratory laparotomy.
4. Patient operated for pyoperitonium and found to have ileal perforation.

Exclusion criteria

1. Patients with hollow viscus perforation other than ileal perforation.
2. Patients who refused to undergo exploratory laparotomy.

All the patients initially presented to the casualty department as cases of acute abdomen. On the basis of history and clinical examination, a provisional diagnosis of intestinal perforation was made. Foley's catheterisation was done to monitor urine output. andryle's tube was introduced in all cases. Routine investigations like complete blood counts, blood sugar, electrolytes, blood urea, serum creatinine and viral markers were performed. All patients were actively resuscitated and started on IV fluids, third generation cephalosporin, metronidazole and Ciproflox IV. Supportive treatment. USG abdomen, X-ray chest and X - ray abdomen were done in all patients. With the confirmation of the initial diagnosis of intestinal perforation then was made. Laparotomy was planned in all cases. Patients were taken after written and inform consent in Operation Theatre and under suitable anesthesia (GA) laparotomy were done from midline incision. The decision to perform a diversion stoma was taken on the basis of various factors like number of ileal perforations, location of the perforations, status of the small bowel, extent of faecal contamination and patient's overall general condition. After proper peritoneal lavage, abdominal drains given. Post- operatively, all patients were given broad spectrum antibiotics and basic supportive measures. Patients were followed up from admission to discharge and for a minimum period of three months[6-10]. Complications were studied and Patients with stomas underwent closure of loopileostome after 3 to 4 months.

Results

60 patients which were admitted with typhoid perforation presenting late, were divided into two groups. Group A had 30 patients and group B had 30 patients. All the patients in group A had laparotomy and exteriorization of the perforation as loop ileostomy. In group B, all the patients had laparotomy and the edges of the perforation freshened and the perforation closure in two layers was performed

using vicryl suture. Exteriorization of the proximal healthy looking ileum as diverting loop ileostomy was routinely performed in all cases. The incident ileal perforation maximum occurred in the second to third decade (50.6%). Ileal perforation was more common in males with male: female ratio of 5:1. The patient was 9 years and oldest was 70 years (Table 1).

Table 1: Age and sex distribution

Age distribution (years)	Male	Female	Percentage
10-20	11 (22%)	0 (10%)	18.3
21-30	14 (28%)	4 (40%)	30.0
31-40	10 (20%)	3 (30%)	21.6
41-50	8 (16%)	2 (20%)	16.6
>51	9 (18%)	1 (10%)	16.6
	50	10	100
Total	83.3%	16.7%	

Most consistent clinical presentations were pain in abdomen, abdominal distension, fever respectively followed by vomiting, and constipation respectively. All the patients presented with pain which started in lower abdomen and later radiated to involve whole

abdomen. The average duration of pain was 3-5 days. 100 % of patients presented with fever with duration of average 8 days. Fever preceded the abdominal symptoms in these patients (Table 2).

Table 2: Clinical presentations

Symptom	No. of patients	Percentage
Pain in abdomen	60	100
Abdominal distension	52	86.6
Fever	57	78.3
Vomiting	36	60
Constipation	37	61.6

As per local complications were concerned local skin excoriation, wound infection stoma retraction and fistulation were more Common in Group A compared to Group B Patients (Table 3).

Table 3: Complications Stoma (local)

Complications	Group A	Group B
Wound infection	5	1
Local Skin excoriation	8	2
Ileostomy prolapsed	2	--
Ileostomy retraction	4	1
Stenosis	3	1
Ischaemia	3	1
Prastomal Hernia	1	--
Fistulation	2	--

In Group A where exteriorization was done as a primary procedure retraction of Stoma developed in 4 cases fistulation in 2 cases, wound infection in 5 cases, Local skin excoriation in 8 cases and stenosis in 3 cases. In group B No fistulation, Ileostomy retraction in 1 case,

wound infection in 1 case and local skin excoriation was present only in 2 cases. As per systemic complication is concerned pulmonary infection, septicaemia, and duration of hospital stay was more in group A patients compare to Group B patients (Table 4).

Table 4: Complication (systemic)

Complication	Group A	Group B
Electrolyte imbalance	02	--
Pulmonary infection	05	01
Septicaemia	04	01
Mortality	02	--

Discussion

Typhoid is quite common in our part of the country, primarily because of poor public sanitation and uncontrolled waste disposal system. Typhoid is a severe febrile illness caused primarily by salmonella typhi [6]. The most lethal complications of typhoid fever are ileal perforation and intestinal bleeding both arising, from necrosis of Peyer's patches in the terminal ileum. Typhoid ulcers occurs in lower part of ileum is mostly involved due to increased

number of Peyer's patches in the terminal ileum. Typhoid fever may occur in middle age. After the age of 20 years, the incidence falls, probably due to immunity from clinical or sub-clinical infections. Perhaps safest and easiest way of managing typhoid ileal perforation is exteriorizing the perforation as loop ileostomy. Other methods are primary closure of perforation, wedge excision or segmental resection and anastomosis. Primary closure is done only when patient presents early and bowel is healthy looking Sepsis and bowel oedema

make suturing hazardous so primary closure is to be avoided in patients presenting late. In our experience, instead of exteriorizing the perforation as loop ileostomy, either resection of highly inflamed or multiple perforations bearing segment of ileum and exteriorizing both ends as ileostomy and mucus fistula, or double layered closure of perforation combined with proximal ileostomy of relatively less inflamed ileum is a safer option in typhoid enteric perforation presenting late.

Conclusion

We conclude that exteriorizing perforation bearing ileum as loop ileostomy is not a very safe procedure as chances of second perforation in the vicinity of primary perforation in highly inflamed terminal ileum is quite high leading to faecal peritonitis and high morbidity. We suggest freshening of edges, double layered closure of perforation with diverting ileostomy approximately 15-20 cm proximal to the first perforation in relatively normal looking ileum as a safer procedure for typhoid enteric perforation presenting late.

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Conflict of Interest: Nil

Source of support: Nil