Original Article

Surgical Options in Typhoid Ileal Perforation

Comparison of Surgical Options in Typhoid Ileal Perforation at Tertiary Care Hospital

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ABSTRACT

Objective: To detect the outcomes of surgical management options in typhoid ileal perforations treated at tertiary care hospital.

Study Design: Comparative study

Place and Duration of Study: This study was conducted at the **S**urgical Department of PMC Hospital Nawabshah from January 2017 to December 2018.

Materials and Methods: This study included total 100 patients. All patients were admitted from surgical OPD and emergency department of PMCH, Nawabshah. Out of 100, 65 (65%) were females and 35 (35%) were male patients. Age ranged from 30 to 55 and 25 to 45 in females and males respectively. The common mode of presentation was mild to severe pain in abdomen along with distention of abdomen and intermittent/continuos low to high grade fever. Radiological investigations detected free air under right dome of diaphragm. Primary repair, resection, anastomosis and loop ileostomy were made and results were assessed according to condition of the patient.

Results: Out of 100, 45 (45%) were found single perforations of less than 1cm and 1.5 to 2 feet away from ileocecal junction whereas 30 (30%) patients had size of perforation less than 2.5 cm with less contaminated abdominal cavity, 25 (25%) patients had single and multiple perforations of more than 2.5cm size with contaminated abdominal cavity.

Conclusion: Primary repair is the best surgical option to treat ileal perforations. Ileostomy is the better option to treat large multiple perforation with contamination of abdominal cavity and septicemia patients as compared to resection and anastomosis because ileostomy has local complications and resction anastomosis has systemic complications.

Key Words: Ileostomy, Resection, Anastomsis, Primary repair, Typhoid ileal perforation

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INTRODUCTION

Humans can survive only 3 minutes without air and 3 days without water. Human body also works like a machine and it is necessary to accomplish its needs for its maintenance. Water is essential element to life. Human body is composed of 70% water so it is imperative for it to be hydrated. Fresh, clean, and alkaline water is to be used in order to hydrate body and maintain pH level to keep body healthy. If contaminated/infected water is used, many diseases erupt and the most common and fatal of all is typhoid fever.[1] Typhoid disease is caused by Salmonella typhi and salmonella paratyphi. It is very strange that human is the only reservoir of this organism. It is transmitted through feco-oral route.

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It harbors in intestine of a human especially ileum where it causes perforation of the ileum by causing ulcerations in Payers patches. This occurs in the third week of the disease process. Ulcers are usually located within 45 cms of ileoceacl junction.[2,3]

The incidence of typhoid ileal perforation is common in developing countries where contaminated water and food is used commonly owing to scarcity of water and fresh food. All African countries, Turkey, South America and Eastern European countries are the countries where the incidence of typhoid ileal perforation is highest.[4]

The common presentation is the abdominal pain, distention of abdomen, vomiting, tender abdomen, dehydration, anemia and tachycardia.[5] In most of the cases, X ray chest and abdomen shows free gas under right dome of diaphragm. Widal-Grube agglutination test is positive at 1:600 dilation.[6]

It is widely accepted now that typhoid ileal perforation is treated surgically only. There are many methods in this regard viz primary closure, excision and closure, resection and primary anastomosis, limited right hemicolectomy and loop ileostomy. These depend upon the size and number of perforations, contamination of abdominal cavity and condition of the small bowel as is

found per operatively.[7] So the choice of procedure depends upon the per operative finding of the disease. If the size of perforation is small one and condition of gut is well, primary closure is the better choice to treat. When the perforation is large one in size, number is one or two or more and abdominal cavity is contaminated apart from the edematous and ischemic gut, the choice only is the resection and anastomosis, limited right hemicolectomy and loop ileostomy.[8,9]

The rationale of our study is to compare the outcome of surgical options of typhoid ileal perforation in order to find out the better procedure in our set up for the betterment of populace.

MATERIALS AND METHODS

This is a comparative study of 100 patients admitted through Emergency/ Surgical Outpatient department (SOPD) in surgical Department of Peoples Medical College Hospital Nawabshah now converted into Peoples University of Medical and Health Sciences for Women (PUMHSW) Nawabshah. This study was conducted from January 2017 to December 2018. This is tertiary care hospital receiving and treating the patients of not only but also other provinces of Pakistan.

All the patients were suffering from abdominal pain, distention and fever, vomiting and tenderness of abdomen. Local examination of abdomen was done to diagnoses the disease and the systemic examination was to assess the general condition of the patient. X Ray Chest/ Abdomen along with Ultrasound of Abdomen was done to help confirm the diagnosis of the disease. X ray showed gas under right dome of diaphragm. They were treated accordingly.

RESULTS

In this study, total 100 patients were included from all surgical wards of PMCH Nawabshah. Out of 100, 65 (65%) were females and 35 (35%) were male patients.

Out of 100, 45 (45%) were found single perforations of less than 1cm and 1.5 to 2 feet away from ileocecal junction whereas 30 (30%) patients had size of perforation less than 2.5 cm with less contaminated abdominal cavity, 25 (25%) patients had single and multiple perforations of more than 2.5cm size with contaminated abdominal cavity as is shown in table 1 below. The age range of affected was between 25 to 55 years with average age of 40 years.

The procedure of primary repair had multiple complications. These were fistula formation, infected wound, paralytic illeus. Out of 45, only 3 (6.6%) patients presented with fecal fistula and only 4 (8.88%) developed postoperative wound infection, 6 (13.33%) patients developed prolonged paralyitic ileus that was relieved by treatment later on. No any presented with burst abdomen.

Out of 30 patients who were treated with resection and end to end anatomosis, 5 (16.6%) patients developed fecal fistula, 3 (10%) came with wound dehiscence, 6 (20%) had infected wound, 10 (33.3%) had paralytic illeus and only 2 (6.66%) developed intra-abdominal abscess as is shown in table 3 below.

Out of 25 patients who were managed by loop ileostomy, 5 (20%) developed skin excoriation, 3 (12%) had transient edema, 2 (8%) came with stomal prolapsed and 1 (4%) had retraction of stoma as is shown in table 4 below.

Table No.1: Size of perforation with surgical option done in patients.

S. No	No of pts	Percen-tage	Size of perforation	Surgical option done
1	45	45%	<1-1.5cm	Primary Repair
2	30	30%	<2.5cm	Resection anastomosis
3	25	25%	> 2.5cm	Ileostomy
Total	100	100%		

Table No.2: Complications in patients with percentage.

S.No	Complication	No of patients	Percentage
1	Fecal fistula	3	6.6%
2	Wound infection	4	8.88%
3	Paralytic ileus	6	13.33%
Total		13	28.7%

Table No.3: Complications in patients with percentage.

S.No	Complications	No of patients	Percentage
1	Fecal fistula	2	6.6%
2	Wound infection	3	10%
3	Paralytic ileus	3	10%
4	Wound dehiscence	2	6.6%
5.	Intra abdominal abscess	1	3.33%
Total		11	36.5%

Table No.4: Ratio of complications in patients with percentage.

S.No	Complications	No of patients	Percentage
1	Skin excoriation	5	20%
2	Transient edema	3	12%
3	Stomal prolapse	2	8%
4	Retraction	1	4%
Total		11	44%

DISCUSSION

Unlike West, Typhoid ileal perforation is still the common surgical emergency presented as acute abdomen in Pakistan. Its prognosis only depends upon symptoms/signs of the patient and the time of presentation either early or delayed. Fortunately, Early presentation has good prognosis with required surgical procedures. But irony is that there is delayed presentation of patients in state of marked sepsis. . Recent advances have proved that surgical treatment is the best option to treat the ileal perforation of typhoid. Various surgical procedures are done keeping in view the multiple factors found per operatively.[10]

In one study, male incidence was found to be increased as compared to females but in our study it is reverse.[11] Female incidence is 65% and male is 35%. One study showed the age ratio of patients suffering from ileal perforation was from 26-31 years. In another study conducted in Pakistan, the patients affected were commonly in their third decade of life [12] but in our study, the average age of patients is 40 years. The common affected in our study was in fourth decade of life.

Postoperative complications are the prognostic determinant of any surgery. One study showed higher rates of complications of primary repair when compared with ileostomy [13] but in our study, the complications rate is lower in the procedure of primary closure. It is 28% whereas in case ileostomy complications are higher upto 40%. But the main difference is that the complications of ileostomy are local and not fatal but the complications of primary repair and resection anstomosis involve systems of the body and patient usually undergoes second surgery. A study conducted in Pakistan showed better prognosis in primary repair as compared to ileostomy regarding the mortality of the patients.[14] The same is found in our study as none of patient died after primary repair.

Regarding the duration of hospital stay, a study showed the decrease in duration of hospital stay in case of loop ileostomy where as the patients of primary repair stayed more days. Same was also seen in another international study.[15] But in our study, the patient of resection and end to end anastomosis stayed more as compared to primary repair and ileostomy because of prolonged paralytic ileus and wound dehiscence/infected wound.

CONCLUSION

Primary repair is the best surgical option to treat ileal perforations. Ileostomy is the better option to treat large multiple perforation with contamination of abdominal cavity and septicemia patients as compared to resection and anastomosis because ileostomy has local complications and resction anastomosis has systemic complications.

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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