



## Outcome of Primary Repair versus Loop Exteriorization in Enteric Perforation

### KEYWORDS

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### INTRODUCTION-

Enteric fever is an endemic in India with high perforation rate and associated with high morbidity and mortality (1). Small intestinal perforation and gastrointestinal haemorrhage are the most common and dreadful complication of enteric fever (2). The incidence of enteric fever in Asia is around 274/100,000 persons per year (3). India has highest incidence worldwide (4). Poor nutrition, low immunity and unhealthy sanitary habits with unhygienic living conditions make a person more prone to this infection, as this disease is transmitted by faeco-oral route. Enteric perforation occurs usually at terminal ileum second to necrosis of Peyer's patches (5). Various operative procedures like, simple repair of perforation primary ileostomy, simple repair with omental patch and repair with ileotransverse Colostomy have been advocated by different authors. In the present study we did a comparative study of primary repair of enteric perforation with loop exteriorization is a satisfactory method to reduce the mortality in enteric perforation.

### METHODS AND MATERIALS-

This retrospective study was done in the Department of Surgery, of Jawaharlal Nehru Medical College, Hospital Bhagalpur (Bihar) between January 2015 to February 2015. Total 40 patients who were operated for enteric perforation were studied. Records of routine investigations were noted. General condition of patients were managed with intravenous fluids, nasogastric suction, broad spectrum antibiotics and foley's catheterisation. 20 patients were treated with primary repair of perforation and another 20 patients were treated with loop exteriorization. In primary repair, the perforation was repaired with polyglactin 3-0 on round body needle in two layers. In loop exteriorization, the involved loop of intestine was simply exteriorized by making a circular incision in right iliac fossa and fixing the serosa to rectus muscle, which was covered with a moist normal saline gauze and bandage, that was later replaced by ileostomy bag, when peristaltic activity resumed. Peritoneal lavage was done with warm normal saline in all cases. Two abdominal drains were given in all cases, one in right iliac fossa and other in pelvic cavity. All demographic details along with post operative complication and mortality were noted and percentages of incidence calculated.

### RESULTS-

Among the studied patients majority of our patients were in 21 to 40 years groups. 13(65%) of patients in ileostomy group were in this age group whereas 15 (75%) of the age group had undergone primary repair of the perforation. Male to female ratio of the enteric perforation was 5:1 (out the 40 patients only 6 were females). Regarding clinical presentation pain abdomen was the most common feature (96%). Almost 38 patients had complain of pain abdomen.

Abdominal distension was present in 27 patients (69%). 19 patients (49%) presented with fever and 21 patients (52%) had vomiting. In the loop exteriorization group of patients there was no mortality, all 20 patients had good recovery, while in primary repair group there was 3 mortality (15%). Regarding hospital stay, mean stay period was 15 days in primary repair group and it was 19 days in loop exteriorization group which included its closure. The average interval between ileostomy closures was 4 months. Post operative complication was more in case of primary repair group. Wound infection rate was 60% (12) in primary repair as compared to 41% (8) in loop exteriorization group. Wound dehiscence was also more common in primary repair patients (50%) 10 patients as compared to 21% (4 Patients) in exteriorization group. Systemic complication was also more common in primary repair, (10%) 2 as compared to (1) 6% in exteriorization group. Intra abdominal collection was seen more in primary repair group (3) 12% as compared to (2) 8% in ileostomy group. Fecal fistula was seen in 8 (40%) in primary repair group. Peristomal excoriation was complication in loop exteriorization group in 8 (40%) patients. X-ray abdomen showed free gas under diaphragm in 34 (85%) cases. Almost 35 (85.5%) patients had their presentation in 2<sup>nd</sup> week.

### DISCUSSION-

Enteric perforation is more common in low Socio-economic status because of low level of education, unemployment, they live in remote remote areas where accessibility to health care facility and awareness for disease and hygiene is very poor (7). Youth of economically productive age in twenties and thirties are the most vulnerable victims. (8) In our study 28 out of 40 patients (70%) were in age group 21 to 40 years. In the sex ratio male to female ratio was 5:1.

Study by Deepak Shrivastava et al (1) also had peak incidence in the age group between 21 to 30 years and male to female ratio was 6.38:1. Like our study Beniwal US et al (2) had maximum incidence of perforation in the second week of fever and gas under diaphragm was an important findings. Enteric perforation is best managed surgically as it prevents further peritoneal contamination by intestinal contents. After a proper peritoneal toileting correct management of perforation is the aim of surgeon. A wide variety operative procedures are done in enteric perforation but all have a high morbidity and mortality. In our study there was nil mortality in loop exteriorization as compared to (15%) 3 mortality in primary repair group. Moribund condition of patients, late referral from periphery are the factors behind high mortality and in this situation loop exteriorization is satisfactory alternative. Though patients had to undergo ileostomy repair operation after 3 to 4 months

but their lives are saved. K P Singh and Kohli (9) also reported no mortality in 8 patients of enteric perforation treated with temporary ileostomy, while overall mortality was 14.2%. Like ours abdominal pain was the most common clinical presentation in the study done by Shrivastava et al (1). Wound infection was the most common complication followed by wound dehiscence. Systemic complication similar to other study 36.67% in the study by mittal et al (10). Fecal Fistula (40%) in our study was higher than the study by Beniwal et al (16.5%) (2). Peristomal skin excoriation in our study was 40% which was comparable to (33%) the study by mittal et al (10). Our study showed that the loop exteriorization is a satisfactory primary step in reducing the mortality in a cases of enteric perforation. Mortality in cases of perforation perforation is around 9 % to 22% in developing world, when compared to developed world (0%-2%).The reason behind are inadequate resuscitation, lack of intensive care, antibiotic resistance, local taboos, delayed operation, number of perforation, fecal peritonitis and duration of disease (11). Study by Sushil Mittal et al (10) also showed the life saving role of salvage loop ileostomy.

#### CONCLUSION-

Loop exteriorization of the involved segment in enteric perforation is a life saving operation. It reduces the mortality. Though it requires a longer hospital stay and reoperation. It saves the precious life of an earning member of family. Therefore loop exteriorization should be preferred in enteric perforation.

#### REFERENCES-

1. Deepak Shrivastava et al. Typhoid intestinal perforation of 155 cases in resource limited setting. IJBAR (2014) 05 (12).
2. Uday Singh Beniwal, Comparative study of operative procedures in typhoid perforation, IJS (2003, Vol. 65 issue 2 172-177)
3. Crump JA, Luby SP et al; The global burden of typhoid fever. WHO Bull (2004, 82:346-53)
4. Siddique FJ, Rabbani F et al, Typhoid Fever in children. In J. Infect disease (2006 10(3): 215-222)
5. Hosoglu S, Aldemir M et al: Risk Factor for enteric perforation in patients with typhoid fever. AM J epidemiol (2004; 160:46-50)
6. Kotan C, Kosem M et al: Typhoid intestinal perforation: review of 1 cases. Kolan Rektum Hast Derg (2000; 11:6-10)
7. Adesun Kammi ARK; AJaooG: Prognostic Factorin typhoid ileal perforation: a prospective study in 50 patients. JR coll Surg Edinb (1997, 42:395-399)
8. WHO (2008) Weekly Epidemiological Record no. 6. 8<sup>th</sup> February 2008.
9. Singh KP, Singh; Choice of surgical procedure in typhoid perforation: Experience in 42 cases J. Ind. Med Asso. (1991, 89, 255-256)
10. Sunil Mittal et al. A comparative study between outcome of primary repair versus loop ileostomy in ileal perforation. Surg Research and practice. (Vol. 214 (2014) Article ID 729018)
11. Karmacharya B; Result of typhoid perforation management our experience in Bir Hosp.Nepal. Katmandu University Med J. (2006. 4:22-24)