ORIGINAL ARTICLE

Primary Repair in Enteric Perforation: Our Two Years Experience at Mayo Hospital

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ABSTRACT

Objective: To Evaluate the outcome of primary repair in enteric perforation.
Study design: Randomized Control Trial.
Setting: West Surgical Ward, Mayo Hospital, Lahore.
Duration of study: 1st June 2010- 31st May 2012.
Sample Size: 100 patients
Methods: Either sex with age between 18-60years and having single enteric perforation after being diagnosed clinically accompanied by signs of peritonitis.
Result: This study showed male to female ratio was 1.5:1 that is 60 males and 40 females. Maximum number of patients were found to be in their 3rd decade of life (58%) followed by 20% in 4th decade. Among various complications commonest were wound infection 23% followed by fecal fistula 14% while others were wound dehiscence leakage and septicemia. Mortality rate was 6%in this study.
Conclusion: The primary repair is the treatment of choice for enteric perforation. Early repair of the perforation is the better procedure due to its cost effectiveness and lower rates of complications as compared to other procedures.
Key words: Enteric perforation, primary repair

INTRODUCTION

Intestinal perforation is the most dreadful complication of enteric fever in developing countries leading to diffuse peritonitis[1,2]. Enteric fever is a severe febrile illness caused by Salmonella Typhi and affects 13-17 million people yearly and kills an estimated 600,000 internationally[3]. The perforation is common in 2nd and 3rd decades[4]frequently occurring in the terminal ileum. Early surgery is the best treatment option to prevent the source of further fecal contamination of the peritoneal cavity[5]. A wide variety of surgical techniques have been tried and none proved to be satisfactory as far as the morbidity and mortality are concerned[6].

Primary repair should be done in patients with short history of symptoms and pre-operatively minimal fecal contamination of the peritoneal cavity.[7]Simple repair of the perforation in two layers is the treatment of choice for enteric perforation[8] because the patient has to undergo surgery for a single time. This study was designed to determine the results of primary repair and to allay the panic of surgeons regarding leakage of enteric perforation repair.

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PATIENTS AND METHODS

This study was carried out in West Surgical Ward, Mayo Hospital Lahore which is a teaching hospital attached with King Edward Medical University Lahore during the time period of two years from 1st June 2010 – 31st may 2012. 100 patients fulfilling criteria of study were selected and informed consent was taken from all patients about the study and operative procedure. Patients with a single enteric perforation having short duration of symptoms that is 48 hours of peritonitis and hemodynamically stable accompanied by signs of peritonitis were included in the study. Patients having multiple perforations, age more than 60 years, having features of septic shock at the time of presentation along with co-morbid conditions like ischemic heart disease, Diabetes Mellitus or renal failure, unfit for surgery as by pre anesthesia assessment were excluded from the study.

Post-operative events were recorded for one week till the patient was discharged. Outcome of the procedure i.e., leakage from the repair, wound infection, septicemia and wound dehiscence were noted.

RESULTS

A total of 100 patients were selected for the analysis. The incidence of enteric perforation was slightly higher in males as compared to females. There were

60 males and 40 females selected for the study, hence, the male female ratio was 1.5:1(Table 1). The ages of the patients ranged from 18 to 58 years (Table-2). Out of these, the maximum no. of patients (58%) were in their 3rd decade followed by their fourth decade (20%). Patients of enteric perforation were admitted throughout the year with the highest number in the months of August and September. Majority (95%) of patients presented with a history of fever followed by sudden onset of pain in the abdomen. Other common findings were abdominal distension (93%), constipation, diarrhea and vomiting. Clinically generalized guarding, rigidity and tenderness were found in all the patients. Pneumoperitoneum was present in 91% of the patients as evidenced by x-ray abdomen in standing position. Out of all the patients, leukocytosis was present in 67% of the patients while leucopenia was present in 29% of the patients.

Table 1: Sex distribution (n=100)

=n	=n	%age
Male	60	60
Female	40	40

Male to Female ratio: 1.5:1

Table 2: Age distribution (n=100)

Age in years	=n	%age
18 – 28	58	58.0
29 – 38	20	20.0
39 – 48	8	8.0
49 – 58	14	14.0

Mean±SD=25±10.47

Table 3: Complications (n=100)

Complications	=n	%age
Leakage	3	3.0
Wound Infection	23	23
Wound Dehiscence	6	6
Septicemia	4	4
Fecal fistula	14	14
Mortality	6	6

Total Morbidity=50% Total mortality =6%

Various complications noted were found to be wound infection (23%), followed by fecal fistula (14%). While wound dehiscence, septicemia and anastomotic leakage accounted for the minority of the complications. Overall 6 patients expired within 30 days of the surgery (table-3). According to various international studies carried out on patients of enteric perforation and the different treatment options, ileostomy for enteric perforation holds a significantly higher risk of morbidity and mortality with mean score of 84% to 40% respectively. Moreover it also holds the morbidity associated with the second operation done for closure[9.] Other surgical treatment options include wedge resection and anastomosis and segmental resection and anastomosis. The risk of complications and mortality is significantly higher in both of the above mentioned procedures mounting upto 20% and 54% respectively according to previously done international researches[10.]

DISCUSSION

There is a universal consensus thattyphoid perforation is best treated surgically[11]. A wide variety of surgical treatments have been tried includingprimaryrepair, ileostomy and resection and end to end anastomosis. Primary repair of enteric perforation is still the treatment of choice. In our study, primary repair of enteric perforation is considered to be the most effective strategy as it proves helpful for the patient in a number of ways. It is a simple, quick and cost-effective procedure. Ileostomy is more expensive and all the patients carry the risk of morbidity caused due to re-operation for closure and moreover, it needs special care prior to closure.

Primary repair was found to be superior to other surgical procedures like ileostomy as far as the morbidity and the mortality are concerned and especially so in moribund patients presenting late in the course of illness where it proved to be a lifesaving procedure. It is a safe way of managing typhoid perforation and the best treatment option as it ceases the source of further fatal course of illness. The present study showed no mortality in primary repair of enteric perforation which was due to proper pre-operative workup, sound surgical technique and performance of procedure by experienced surgeon. Thus the operating surgeon has to take multiple factors into consideration before choosing the type of surgical procedure. Probably no single surgical procedure can be universally applicable to all patients with enteric perforation. Every procedure has its own advantages and disadvantages, however considering our clinical experience and comparing them with international studies primary repair proves to be the safest option in patients with single perforation, healthy bowel and minimal contamination.

In previously reported studies, mortality reported with repair of perforation was 48%by Bhansali[12], 14.6% by Purohitg and 28% by A.R.K. Adesunkanmill. K.P Singh and Kohli[13]reported no mortality in 8 patients of enteric perforation treated with temporary ileostomy while overall mortality was 14.2%. Shah A.A Wani and Wazir[14] reported 37.5% mortality with resection anastomosis. Thus in comparison with previous studies our mortality rate was very low in patients treated with primary repair of the perforation.

In short, the treatment of enteric perforation is always surgical. The patients should be operated upon as soon as possible along with associated vigorous resuscitation and suitable antibiotic therapy. Primary repair of the perforation is the treatment of choice in patients that present early in the course of the disease owing to least rate of complications, shorter hospital stay, quickest and simplest technique, least mortality rate and trouble-free post-operative care.

CONCLUSION

The primary repair of perforation in two layers is the treatment of choice for typhoid perforation. Extensive procedures such as resection anastomosis and right hemi-colectomy should be avoided in patients with poor general condition and toxemia.

Early surgery and adequate resuscitation is necessary for successful management of patients with typhoid perforation. Early repair of the perforation is a better procedure in enteric perforation due to its cost effectiveness and lower rate of complications as compared to other surgical procedures.

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