ORIGINAL ARTICLE

To Compare the Outcome of Ileostomy Versus Primary Repair in Enteric Perforation

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ABSTRACT

Intestinal perforation is the most dreadful complication of enteric fever in the developing countries leading to diffuse peritonitis. Enteric fever is a severe febrile illness caused primarily by the Salmonella typhi. The objective of this is to compare the outcome of primary repair with ileostomy in single enteric perforation. This randomized control trial study was carried out from 14th December, 2009 to 13th June, 2010 in Department of Surgical Emergency of Mayo Hospital Lahore. One hundred patients with enteric perforations, divided into two procedural groups, Group A (primary repair) and Group B (ileostomy) comprising fifty patients in each group. The mean age of patients in group A was 30.18±10.47 years and in group B was 29.28±10.49 years. Male to female ratio was 1.50:1 in group A and 2.57:1 in group B. The complications like wound infection were 28% in group A and 86% in group B, wound dehiscence was 14% in group A and 40% in group B and septicaemia was 8% in group A and 36% in group B. It is concluded that early repair of the perforation is a better procedure than temporary ileostomy in enteric perforation due to its cost effectiveness and absence of complications related to ileostomy.

Key words: Enteric perforation, Primary Repair, Ileostomy, Risk factors

INTRODUCTION

Intestinal perforation is the most dreadful complication of enteric fever in the developing countries leading to diffuse peritonitis[1,2]. Enteric fever is a severe febrile illness caused primarily by the Salmonella typhi. Enteric fever affects 13-17 million people yearly and kills an estimated 600,000 internationally[3]. Typhoid fever is a life-threatening problem in Pakistan especially due to the emergence of multi-resistant strains of Salmonella typhi[4,5]. Intestinal perforation is one of the most dreadful and common complication of typhoid fever, remarkably so in the developing countries where it usually leads to diffuse peritonitis[1,2].

Ileostomy should be considered as a treatment option in patients with unhealthy terminal ileum. Ileostomy is a life saving procedure to be used judiciously accepting its inconvenience to patient.[6,7] Primary repair should be done in patients with short history of symptoms and per-operatively minimal faecal contamination of the peritoneal cavity.[7] In cases with good reserves and early hospitalization, primary repair is certainly the procedure of choice.[8,9] Simple repair of perforation in two layers is the choice of treatment for enteric perforation because the patient has to undergo surgery for single time and the results are equivalent to that of ileostomy[4].

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PATIENTS AND METHODS

This randomized control trial study was carried out in Department of Surgical Emergency of Mayo Hospital` Lahore which is a teaching hospital attached with King Edward Medical University, Lahore during 14th December, 2009 to 13th June, 2010. Patients with a single enteric perforation diagnosed clinically having history of high grade fever for more than two weeks accompanied by signs of peritonitis were included and patients having perforation within 6cm from ileocaecal junction was excluded from the study. One hundred patients with age 18 to 60 years were included in this study. Patients were randomly divided into two procedural groups, Group A (primary repair) and Group B (ileostomy) comprising fifty patients in each group. Primary repair means refreshing the margins of perforation followed by repair in same setting. Postoperative events were recorded for one week till the patient is discharged. Outcome of two procedures i.e. wound infection (purulent discharge either from wound or drain placed accompanied by signs and symptoms of infection) and other complications i.e. wound dehiscence and septicaemia was also noted. For comparison of complication between both groups, Chi-square test was applied as a test of significance. P <0.05 was considered as significance.

RESULTS

The mean age of patients in group A (primary repair) was 30.18±10.47 years while in group B (Ileostomy)

was 29.28±10.49. In group A, 30 (60%) patients were male and 20 (40%) were female while in group B, 36 (72%) patients were male and 14 (28%) were female. Male to female ratio was 1.50:1 in group A and 2.57:1 in group B (Table 1). There were three complications, wound infection 14 (28%) patients in group A and 43 (86%) in group B, wound dehiscence was in 7 (14%) in group A while 20 (40%) in group B and septicemia in 4 (8%) patient in group A and 18 (36%) patients in group B. Statistically the difference between the two groups was significant [<0.01] (Table 2)

Table 1: Age and sex distribution of patients

Age in years	Primary repair (n=50)		Ileostomy (n=50)	
	n=	%age	n=	%age
18 – 28	29	58.0	30	60.0
29 – 38	10	20.0	10	20.0
39 – 48	4	8.0	6	12.0
49 – 58	7	14.0	4	8.0
Mean±SD	30.18±10.47		29.28±10.49	
Male	30	60.0	36	72.0
Female	20	40.0	14	28.0
Male:female ratio	1.50:1		2.57:1	

Table 2: Comparison of Complications in both groups

Complications	Chi square Value	Primary repair (n=50)		Ileostomy (n=50)	
		n=	%age	n=	%age
Wound infection	1.51	14	28.0	43	86.0
Wound dehiscence	7.11	7	14.0	20	40.0
Septicemia	5.82	4	8.0	18	36.0

P value > 0.05

DISCUSSION

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. A study done by Kouame[1] in which mean age was 34 years ranging from 5-63 years of age. Another study showed that mean age was 28.2 years range between 16–74 years[10]. Although Khan reported a mean age difference between patients with and without complications (30.2±8.4 versus 28.9±12.0 years) respectively, this difference was not statistically significant.[11] In a study carried out by Ramachandran[12], the mean age was 32 years. Whereas in the present study, all age patients were included with their mean ages 30.18±10.47 years in group A and 29.28±10.49 in group B which is comparable with above mentioned studies (Table 1). In the present study, there were 30 (60%) male patients in group A and 36 in group B, while 20 patients were female in group A and 14 patients were in group B with male to female ratio 1.50:1 in group A and 2.57:1 in group B (Table 1) which is comparable with national and international studies. In a study reported by Hussain[13], 47 (62.6%) were male and 28 (37.3%) were female patients with male to female ratio was 1.67:1. In another study carried out by Edino[14] there were 47 patients 35 patients were males and 12 patients were females with male to female ratio 2.9:1.

In the present study enteric perforation related complications were observed in both groups. However, in group A, 14(28%) patients had wound infection while in group B 43 (86%) patients which is statistically significant (p<0.01). Other complications like wound dehiscence in group A 7 (14%) while in group B 20 (40%) patient had wound dehiscence which is statistically highly significant (p <0.01). Four (8%) patients had septicemia in group A and 18(36%) patients had septicemia which is statistically significant (p <0.01) which is comparable with national and international studies. A study carried out by Edino[14] wound infection was the most common postoperative complication. In another study carried out by Beniwal[15] common postoperative complications including wound infection was (23%) and wound dehiscence (6%). Ileostomy is more expensive as all the patients have to undergo re-operation for closure of ileostomy and it further needs specialized care prior to closure. Ileostomy should be considered as a secondary procedure in patients who have developed fecal fistula. While primary repair was found to be superior to other surgical procedures as far as the morbidity and mortality is concerned and especially so in moribund patients presenting late in the course of illness, where it proved to be a life saving procedure. It is safe way of managing typhoid ileal perforation and the best treatment option by especially so in elderly patients presenting late in the consensus as it ceases the source of further fatal course of illness. The present study showed no mortality in primary repair of enteric perforation and ileostomy. It is due to proper preoperative work-up, sound surgical technique and performance of procedure by experienced surgeon.

CONCLUSION

Early repair of the perforation is a better procedure than temporary ileostomy in enteric perforation due to its cost effectiveness and absence of complications related to ileostomy.

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