

# Analysis of Conventional Ileostomy Closure Outcome in Enteric Perforation

K Vishal Vikas

Assistant Professor, Department of General Surgery, RVS Medical College, Chittoor, Andhra Pradesh, India.

## ABSTRACT

**Background:** The present study was conducted for assessing conventional ileostomy closure outcome in enteric perforation.

**Materials & Methods:** 50 patients were enrolled. All the patients underwent the closure of temporary ileostomy was carried out as per unit protocol after 8-12 weeks. Closure of temporary ileostomy was done under general/spinal anesthesia with a peristomal skin incision, mobilization, and a sutured anastomosis. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software.

**Results:** Procedures were carried out under spinal anesthesia in 70 percent of the patients. Mean operative time was 76.2 minutes. Perioperative bleeding was the most common perioperative complication found to be present in 20 percent of the patients. While postoperative pain was seen in 30 percent of the patients. Mean time to feeding postoperatively was 5.5 days.

**Conclusion:** Conventional stoma closure is safe and feasible when patients are selected appropriately.

**Keywords:** Ileostomy, Closure, Perforation.

## \*Correspondence to:

**Dr. K Vishal Vikas,**  
Assistant Professor,  
Department of General Surgery,  
RVS Medical College, Chittoor, Andhra Pradesh, India.

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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. Although, intestinal hemorrhage is the most common complication of typhoid fever yet intestinal perforation continues to be the most frequent cause of its high morbidity and mortality. In general, hemorrhage and perforation occur in the terminal ileum secondary to necrosis of Peyer's patches at 2-3 weeks after the onset of the disease.<sup>1,2</sup> Mortality rates of typhoid intestinal perforation (TIP) cases are reported to be between 5% to 62%. Perforation of terminal ileum is a cause for acute obscure peritonitis, heralded by exacerbation of abdominal pain associated with tenderness, rigidity and guarding, most pronounced over right iliac fossa. However, for many patients in a severe toxic state, there may be obscured clinical features with resultant delays in diagnosis and adequate surgical intervention. 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.<sup>3,4</sup> Hence; the present study was conducted for assessing conventional ileostomy closure outcome in enteric perforation.

## MATERIALS & METHODS

The present study was conducted in Department of General Surgery, RVS Medical College, Chittoor, Andhra Pradesh (India) for assessing conventional ileostomy closure outcome in enteric perforation.

All consecutive patients between the ages of 18 years and 70 years. Only those patients who underwent temporary ileostomy following bowel surgery for enteric perforation and which were Widal and/or Biopsy and/or Blood Culture proven enteric perforation were enrolled. 50 patients were enrolled. All the patients underwent the closure of temporary ileostomy was carried out as per unit protocol after 8-12 weeks. Closure of temporary ileostomy was done under general/spinal anesthesia with a peristomal skin incision, mobilization, and a sutured anastomosis. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software.

## RESULTS

Mean age of the patients was 35.3 years. 90 percent of the patients were males while the remaining were females. Mean hemoglobin, total protein and albumin levels were found to be 11.5 gm/dL, 6.5 gm/dL and 3.7 gm/dL respectively. Procedures were carried out under spinal anesthesia in 70 percent of the

patients. Mean operative time was 76.2 minutes. Perioperative bleeding was the most common peri-operative complication found to be present in 20 percent of the patients. While postoperative pain was seen in 30 percent of the patients. Mean time to feeding postoperatively was 5.5 days.

**Table 1: Biochemical variables**

| Biochemical variables | Mean | SD  |
|-----------------------|------|-----|
| Hemoglobin (gm/dL)    | 11.5 | 1.3 |
| Total protein (gm/dL) | 6.5  | 1.5 |
| Albumin (gm/dL)       | 3.7  | 0.8 |

**Table 2: Distribution of patients according to type of anesthesia**

| Type of anaesthesia | Number | %   |
|---------------------|--------|-----|
| GA                  | 15     | 30  |
| SA                  | 35     | 70  |
| Total               | 50     | 100 |

**Table 3: Operative time (mins)**

| Variable | Operative time |
|----------|----------------|
| Mean     | 76.2           |
| SD       | 13.8           |

## DISCUSSION

Typhoid fever, caused by *Salmonella typhi* and *paratyphi*, remains a serious systemic illness in underdeveloped and developing nations where unhealthy environmental conditions prevail as a result of poor public health measures. It is a multisystemic illness which is transmitted through the faecal-oral route by ingestion of contaminated food and/or water. Typhoid fever is characterised by fever, headaches, joint pains, profound weakness, diarrhoea, acute respiratory symptoms (cough), a maculopapular rash and abdominal pain.<sup>4-6</sup> While control of the infection has been achieved in developed countries by effective public health measures, developing countries continue to bear the burden of the disease, principally because many communities still fall short of standards for drinking water, hygiene and sanitation.<sup>7-9</sup> Intestinal perforation, most common in the ileum, is the most serious complication of typhoid fever and ileitis, with mortality rates ranging between 20% and 60% in the West African sub-region.<sup>10-12</sup>

Mean age of the patients was 35.3 years. 90 percent of the patients were males while the remaining were females. Mean hemoglobin, total protein and albumin levels were found to be 11.5 gm/dL, 6.5 gm/dL and 3.7 gm/dL respectively. Procedures were carried out under spinal anesthesia in 70 percent of the patients. Pandit N et al presented dual case of spontaneous closures of an ileostomy and a colostomy. Two male patients presented to the emergency surgical department with acute abdominal pain. One of them was diagnosed as having rectosigmoid perforation and underwent diversion sigmoid loop colostomy after primary closure of the perforation. The other was

a known case of carcinoma of the rectum who had already undergone low anterior resection with covering loop ileostomy; the patient underwent second loop ileostomy, this time for complicated intestinal obstruction. To the surprise, both the loop colostomy and ileostomy closed spontaneously at 8 weeks and 6 weeks, respectively, without any consequences. Spontaneous stoma closure is a rare and interesting event. The exact etiology for spontaneous closure remains unknown, but it may be hypothesized to result from slow retraction of the stoma, added to the concept of a tendency towards spontaneous closure of enterocutaneous fistula.<sup>12</sup>

Mean operative time was 76.2 minutes. Perioperative bleeding was the most common peri-operative complication found to be present in 20 percent of the patients. While postoperative pain was seen in 30 percent of the patients. Mean time to feeding postoperatively was 5.5 days. Ranjan Satish Kumar et al prospectively compared the morbidity and mortality associated with early closure and late closure. A total of 47 ileostomies were made for various indications. Patients were divided into two cohorts by the time of stoma closure. Early closure group in which stoma was closed within 4-6 weeks and late closure group in which stoma was closed after 90 days. No colostomy was closed early. So the observations are on early closure of ileostomy only. Total 15 patients were taken up for ileostomy closure between 4-6 weeks (EC group) and remaining 32 were late closure (LC group). Only 4 patients in early closure group had minor complication of skin excoriation. Whereas in late closure group 17 patients had minor complication of prolapse plus skin excoriation and 1 patient presented with obstruction requiring relaparotomy and re-stoma formation. There was no instance of anastomotic leak, intra-abdominal abscess, or mortality in EC group and only single case developed entero cutaneous fistula but was managed conservatively. The study clearly highlights the potential advantages of early closure of ileostomy without any added morbidity or mortality and is a feasible alternative to a more conventional delayed approach, provided careful selection of patients is done. This significantly cuts down the convalescence period of the patient and helps him to live a better quality of life much earlier.<sup>13</sup> Suryavanshi P et al retrospectively analyzed ileal perforation cases treated with either loop ileostomy or tube ileostomy at the centre during last 3 years. A total of 50 ileal perforation cases treated with ileostomy either tube ileostomy (n = 21) or conventional loop ileostomy (n = 29) were included for study and their immediate and late post operative complications were recorded and analysed. They found that tube ileostomy is a safe and effective mode of diversion and is associated with minimal stoma related morbidity like peristomal excoriation, hernia, retraction, prolapse, obstruction etc.<sup>14</sup>

## CONCLUSION

Conventional stoma closure is safe and feasible when patients are selected appropriately.

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