Original Article

Surgical Audit of Emergency Ileostomies

Muhammad Zulfiqar Ali, Khalid Munir, Ahmed Zaffar, Muhammad Idrees Anwar
Department of Surgery, Sheikh Zayed Hospital, Rahim Yar Khan

Abstract

Background: To evaluate the causes and management of emergency ileostomies

Methods: In this prospective descriptive study all patients requiring emergency ileostomy were included. Initially patients were resuscitated by administering intravenous fluids and electrolyte replacement. All patients were operated in emergency under general anesthesia. The preoperative indication of ileostomy was noted in all patients. Emergency Laparotomies where primary repair was performed were excluded from the study.

Results: Indications for emergency ileostomy creation were the conditions requiring small bowel or proximal colon resection, in which the integrity of a primary anastomosis would be compromised. This was due to a diffuse bowel injury (long-standing peritonitis or obstruction, radiation, Crohn's disease) creating friable tissues that could not hold a suture. Mean age of the patients was 36±12.59 years with a range of 12-61 years. Most common indication for ileostomy was typhoid intestinal perforation followed by tuberculosis of intestine. Skin excoriation was the most frequent complication noted in ileostomy patients.

Conclusion: Infective disease is the most common indication for emergency ileostomy.

Key Words: Emergency; Ileostomy.

Introduction

Fecal diversion by Ileostomy or colostomy represents an important treatment in colorectal surgery. Fecal diversion may be either temporary for decompression or permanent for palliation. The indications in western literature for faecal diversion include inflammatory bowel disease, familial adenomatosis polyposis, colorectal cancer, non gastro intestinal obstructing tumors, pelvic sepsis, trauma, diverticulitis, fistula, ischemic bowel disease, radiation enteritis, pseudomembranous enterocolitis, fecal incontinence and paraplegia. Defunctioning loop ileostomies are used commonly to protect low colorectal anastomosis and thereby reducing serious complications of leakage. While Ileostomy causes physical and emotional trauma to the patient, it is a life saving procedure. Complications associated with stoma are frequent and their impact ranges from simple inconvenience to life threatening. Complications related to stoma may occur early or late, intermittently or progressively and may be acute or chronic in nature. These complications can be prevented by adequate pre-operative preparation and sound surgical technique and a better rehabilitation to prepare the patient psychologically.

The role of stoma therapist / nurse is also important to minimize the incidence of complications and to prepare the patient psychologically.

Patients and Methods

This study was conducted in Surgical Unit-I Sheikh Zayed Hospital, Rahim Yar Khan from 1st January, 2010 to 30th November, 2010. Indications for emergency ileostomy creation were the conditions requiring small bowel or proximal colon resection, in which the integrity of a primary anastomosis would be compromised. This was due to a diffuse bowel injury (long-standing peritonitis or obstruction, radiation, Crohn's disease) creating friable tissues that could not hold a suture. Other emergent indications for an ileostomy due to haemorrhage, ischemia, perforation, or sepsis were studied. This included neonates who developed intestinal perforation due to necrotizing enterocolitis with resection of the involved segment and ileostomy. A total of 85 patients of ileostomies operated for various pathologies were evaluated. All patients were admitted through emergency department. All required investigations along with plain x-ray abdomen erect and supine including both domes of diaphragm were done.

Initially all patients were resuscitated by administering intravenous fluids and electrolyte replacement. Antibiotics were given preoperatively and continued post operatively. All patients were operated in emergency under general anesthesia. The preoperative indication of ileostomy in all patients was noted where required and later confirmed histopathologically. Emergency Laparotomies where primary repair was performed were excluded from the study.

Complications were divided into early
complications (upto 30 days after operation) and late complications (more than 30 days after operation). Ileostomy was considered to be retracted when it was 05 cm or more below the skin surface and required intervention. Prolapse was diagnosed if stoma increased in size after maturation and required change of appliance or surgical treatment. Poor siting was defined as any Ileostomy which subsequently was found in a skin crease and was associated with difficulties in fixing a stoma appliance. High output was defined when Ileostomy output was more than 1 litre in 24 hours. Detachment was recorded if any part of Ileostomy had detached from subcutaneous junction.

**Results**

Present study included a total of 85 patients in whom temporary Ileostomy was performed. Majority were male (74.1%). The mean age of patients was 36 ± 12.59 years with range of 12-61 years. Typhoid perforation was the commonest indication (Table 1). Skin excoriation and prolapse were the commonest complications (Table 2).

**Table 1: Indications of loop Ileostomy** (n=85)

<table>
<thead>
<tr>
<th>Indications</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typhoid perforation</td>
<td>45(52.9)</td>
</tr>
<tr>
<td>Tuberculosis of intestine</td>
<td>13(15.29)</td>
</tr>
<tr>
<td>Fire arm injury</td>
<td>5(5.88)</td>
</tr>
<tr>
<td>Post D &amp; C</td>
<td>5(5.88)</td>
</tr>
<tr>
<td>Abdominal trauma</td>
<td>4(4.71)</td>
</tr>
<tr>
<td>Malignancy</td>
<td>2(2.35)</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>11(12.94)</td>
</tr>
</tbody>
</table>

**Table 2: Emergency Ileostomies-Complications**

<table>
<thead>
<tr>
<th>Complications</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Excoriation</td>
<td>5(5.88)</td>
</tr>
<tr>
<td>Prolapse</td>
<td>3(3.53)</td>
</tr>
<tr>
<td>Stomal Stenosis</td>
<td>2(2.35)</td>
</tr>
<tr>
<td>Ileostomy Diarrhea</td>
<td>2(2.35)</td>
</tr>
<tr>
<td>Retraction</td>
<td>1(1.18)</td>
</tr>
<tr>
<td>Mortality</td>
<td>1(1.18)</td>
</tr>
</tbody>
</table>

Skin excoriation was managed by improving local hygiene, nutritional status and by applying good quality stoma appliance, with the use of stoma adhesive paste. Three (3.53%) patients developed prolapse, which was managed conservatively. Two patients developed stomal stenosis that was managed by gentle dilatation. Ileostomy diarrhea occurred in two patients that needed aggressive fluid management, institution of semisolid diet with reduction of liquids through mouth. One patient, with advanced pelvic malignancy died during the study. Parastomal hernia or bleeding was not observed in any case.

**Discussion**

Throughout the 18th century accepted management of intestinal perforation was to close any open abdominal wound. This treatment plan was associated with high mortality rates. The earliest stomas were actually fistula that developed spontaneously following bowel perforation. Advocates of temporary faecal diversion argue that a loop ileostomy decreases the incidence and severity of sepsis following a leak from anastomosis. Patients undergoing stoma formation are at risk of developing a wide range of complications following surgery.

Robertson et al reported stoma related complications rate between 10 and 70%, which may be because of varying length of follow up. The most common indication for Ileostomy in our study was enteric (typhoid) perforation (52.9%). Delayed presentation, marked sepsis and poor nutritional status were the common factors in these patients with typhoid perforation for which ileostomy was done. Most of typhoid perforations occur in terminal ileum. Unlike the west, typhoid is still common cause of ileal perforation in our country. Indeed there is a typhoid belt in our country as mentioned by local studies.10,11 Next common cause of non traumatic ileal perforation noted in present study was tuberculosis of intestine which is also in agreement with other studies. In a series of 170 patients of ileal perforation, typhoid and tuberculosis were found to be the leading causes with and incidence of 60% and 14.7% cases respectively.

In present study, the overall complication rate associated with loop Ileostomy was 16.47%. Majority of these complications were managed conservatively with early surgical intervention required in one case with prolapse. Complication rate of 16.47% was in concordance with international studies, but low as compared to local studies.15-17

Incidence of peristomal skin complication was 10-14%, due to improper location or construction of stoma and postoperative care or maintenance. It is reported that this can be prevented using appliances consisting of flange or bag design to fit closely and firmly the skin around the stoma, with the help of latex mixture, karaya gum, stoma - adhesive or other paste.18

Studies revealed link among higher body mass index and retraction, skin excoriation and overflow. Reason for retraction is thickened fatty mesentery,
which makes mobilization more difficult and due to well developed panniculus in obese patients, traction is exerted on the bowel wall, which may be the main cause of retraction. 

The probable causes for stoma stenosis include poor siting of stoma, vascular compromise i.e. managed by gentle dilation with gloved index finger. The modern techniques of Ileostomy designing with an everting spout and mucocutaneous suturing have virtually abolished this complication. Two patients in the present study developed stomal stenosis.

During the initial post operative period, fluid and electrolyte imbalance is main issue, which need great care. In some patients, the losses over several days can severely derange the water and electrolyte balance. Morbidity related to ileostomy construction was found low and this morbidity level is acceptable if compared with the morbidity associated with anastomotic breakdown or primary closure.

Inability of long term follow up and non-performance of blood cultures were the main impediments.

References