

# INDICATIONS AND COMPLICATIONS OF LOOP ILEOSTOMY

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## ABSTRACT

- Objective* To assess the indications and complications of temporary loop ileostomy.
- Study design* Descriptive study.
- Place & Duration of study* This study was conducted at Surgical Unit II, Civil Hospital Karachi between February 2005 and December 2007.
- Patients and Methods* All patients who had temporary loop ileostomy during that period were included in this study. During hospital stay and at follow up till the stoma reversed, the indications and various complications were noted.
- Results* One hundred and twelve patients fulfilled the selection criteria. The most common indication of loop ileostomy was typhoid (enteric) perforation accounting for about two third of all cases (n 74). Iatrogenic gut perforation, covering ileostomy for rectal cancers, following resection anastomosis, tuberculosis, blunt abdominal trauma, anastomosis leak and rectovaginal fistula were other indications. The most common complication was skin excoriation (n 24), while poor placement, transient edema, retraction and high output were other less common complications.
- Conclusion* Temporary loop ileostomy is the stoma of choice for temporary fecal diversion as most of its complications are manageable non-operatively.
- Key words* Loop ileostomy, Anastomosis leak, Intestinal fistula, Typhoid fever.

## INTRODUCTION:

Despite the major advancements in the field of intestinal surgery, construction of intestinal stoma is still a common and frequently performed procedure. It is mandatory to apply meticulously the sound surgical principles in order to achieve good results. Stoma formation can be temporary or permanent. The construction of intestinal stomas is a major part

of a surgical procedure. As most of the complications are preventable, careful preoperative planning by the surgeon in conjunction with an enterostomal therapist is important to minimize the incidence of complications and to help prepare the patient psychologically.<sup>1</sup>

Stomas are used to divert the fecal stream away from distal bowel in order to allow a distal anastomosis to heal as well as to relieve obstruction in emergency situation. Though a life saving procedure, it may result in significant number of complications. The purpose of this study was to find out the indications and complications of temporary loop ileostomy.

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**PATIENTS AND METHODS:**

This descriptive study was carried out at Surgical Unit II, Civil Hospital Karachi, from February 2005 to December 2007. All patients who had temporary loop ileostomy during that period were included in this study after getting the written informed consent. The age, gender and indications were recorded. Various complications were noted during postoperative hospital stay and subsequently during follow up till stoma was closed. Psychological and biochemical complications were excluded from the study. As no formal enterostomal therapist was available in our set up, the preoperative counseling and psychological preparation of the patients for stoma was done by operating surgeon.

Complications were divided into early complications (up to 30 days after operation) and late complications. Ileostomy was considered to be retracted when it was 0.5cm or more below the skin surface and required intervention. Prolapse was diagnosed if the stoma increased in size after maturation and required change of appliance or surgical treatment. Poor location was defined as any ileostomy which subsequently found in a skin crease and was associated with difficulties in fixing a stomal appliance. High output was labeled when the ileostomy output was more than one liter in 24 hours. Detachment was recorded if any part of the ileostomy had detached from the subcutaneous junction. The data was analyzed using SPSS 11.0 software program and statistical significance of the data was evaluated by applying the Pearson Chi-Square test.

**RESULTS:**

During the study period, 112 patients (78 males and 38 females) underwent diversion loop ileostomy. The mean age of the patients was 36±12.58 years. Typhoid (enteric) perforation was the most common indication accounting for 74 (66%) patients. The next common indication was iatrogenic perforation in 10.7% (n 12) of the cases. Eight of these occurred following dilatation and curettage (D & C) and two occurred during colonoscopy and retrieval of intra-abdominal retained small artery forceps. Other less common indications were tuberculosis, blunt abdominal trauma, anastomosis leak and rectovaginal fistula(table-I).

Poor location of stoma was the most common early complication noted in eight patients (7.1%). All these stomas were made in patients at emergency operation. Transient edema of ileostomy was found in six patients. All these six patients has distended edematous bowel. This edema subsequently

decreased once the stoma started working postoperatively. Six patients had retraction, two of these required surgical correction as a local procedure. The other four were managed non-surgically by using proper stoma appliances. Six patients had superficial bleeding from the ileostomy site wound. Bleeding in four patients was controlled by local measures and other patient required suturing under local anesthesia. Post operative skin excoriation was the most common late complication observed in 24 (21.4 %) patients.

The typhoid related ileostomies had four fold complication as compared to those observed with non-typhoid related ileostomy. This difference in complication rate was found statistically significant on applying Pearson Chi Square test.

**Table. I Indications of loop ileostomy**

| Indication  | Number of patients |
|---|--------------------|
| Typhoid perforation                               | 74                 |
| Iatrogenic perforation                            | 12                 |
| Gangrenous bowel following intestinal obstruction | 06                 |
| Covering ileostomy for low anterior resection     | 06                 |
| Anastomosis leak                                  | 04                 |
| Tuberculosis                                      | 04                 |
| Blunt abdominal trauma                            | 04                 |
| Rectovaginal fistula                              | 02                 |

**DISCUSSION:**

An intestinal stoma is an opening of the intestinal tract into the abdominal wall. The first surgical stoma was created more than 200 years ago.<sup>2</sup> the earliest stomas were actually unintentional ones, enterocutaneous fistulas resulting from penetrating abdominal injuries or complications of intestinal diseases such as incarcerated hernias.<sup>2</sup> The most common indication in this study was enteric (typhoid) perforation. Delayed presentation, marked sepsis and poor nutritional status were the common factors in these patients. Preference was given to temporary loop ileostomy over primary closure.

Inflammatory bowel disease and diversion loop ileostomy for colorectal diseases are other common indications.<sup>3</sup> Unlike the west, typhoid is still a common cause of ileal perforation in our country.<sup>4,5</sup>

Complication rates of temporary loop ileostomy range between 5-100%.<sup>2</sup> These rates vary due to varying length of follow-up.<sup>6</sup> Age of the patient, urgency of surgery, diagnosis and time of presentation are the factors associated with high levels of morbidity and mortality.<sup>7</sup> Majority of these were treated conservatively and only four patients required surgical intervention. Two had ileostomy retraction which was corrected under local anaesthesia and other had fistula which was re-explored. A complication rate of 41% associated with loop ileostomy construction, with 6% of all patients requiring surgical intervention has been reported.<sup>11</sup> Others had a complication rate of 25% related to loop ileostomy construction and all required surgical intervention.<sup>9</sup> Complication rate of 5.7-10.8% have been reported.<sup>10,11</sup> There are many factors suggested to predispose to stoma complications like high body mass index, inflammatory bowel diseases, use of steroids and immunosuppressant drugs, diabetes mellitus, old age, emergency surgery, surgical technique and surgeons' experience.<sup>12</sup> Skin excoriation was found to be a major late complication in this study, as has been reported in earlier local studies.<sup>4,5</sup>

In emergency situations, it is important to at least mark the future stoma site on the abdominal skin before the incision. Ileostomy should be avoided near a bony prominence, waist line, skin folds, scars and umbilicus, because all these interfere with appliance application and might subject the patient to complications. It is important to create a smooth protruding surface to allow proper appliance care when enterostomal therapist is not available.

A retrospective study of 1790 patients reported significantly lower incidence of early complications in patients who received counseling and evaluation by enterostomal therapist and were preoperatively marked for proper stoma site.<sup>13</sup> Another study reported a six fold decrease in stoma complications when enterostomal therapists were involved in the treatment of stoma patients.<sup>14</sup> However, others showed that the counseling by enterostomal therapist was not associated with reduction of the complication rate.<sup>12</sup>

Many surgeons consider loop ileostomy as preferred method for temporary fecal diversion. Loop ileostomy is considered generally easier to manage and is not

associated with a greater rate of complications (in its construction and closure).<sup>15,16</sup>

#### **CONCLUSION:**

Temporary loop ileostomy is the stoma of choice for temporary fecal diversion as most of its complications are manageable non-operatively.

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