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Research Article

**STUDY TO KNOW THE RESULTS OF ILEOSTOMY  
REVERSAL OPERATIONS**

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**Abstract:**

**Objective:** To evaluate the outcome of ileostomy reversal procedures.

**Study Design:** Prospective case series.

**Place and Duration:** In the Surgical Department of Nishtar Hospital Multan for two year duration from March 2017 to March 2019.

**Methodology:** 74 total patients with ileostomy closure were included in the study. Detailed history, physical examination and related examinations were performed. The patients were operated on by a superior surgeon and an anastomosis was sutured in two layers. The patients were closely monitored for postoperative complications.

**Results:** Typhoid and tuberculosis perforation were the main factors in ileostomy. After closure of ileostomy, the most common complication was wound infection in 10 (13.5%), intestinal obstruction in 4 (8.1%), incision hernia in 2 (2.6%) and anastomotic (1.3%) in one patient. No mortality was observed in the study.

**Conclusion:** DE functioning of ileostomy is a common life-saving operation and reversal is a safe procedure with little mortality and morbidity.

**Keywords:** Ileostomy reversal, Ileostomy, Complications.

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**INTRODUCTION:**

The increase in the number of patients who attended the ambulatory surgical service for closure of ileostomy indicates the increase in the number of ileostomies performed<sup>1-3</sup>. Although the causes of ileostomy were significantly different, this increase was recorded both in the east and the west<sup>4-5</sup>. Perforation of typhoid and tuberculosis is the most common cause of ulcerative colitis in the east of total colectomy after total colectomy in the east of Crohn's disease and fecal diversion of ileoanal pouch<sup>6</sup>. Ileostomy causes physical and emotional trauma to the patient on the one hand, but it is a procedure to save lives on the other<sup>7</sup>. Closure of ileostomy performed at the right time and with the appropriate technique is associated with minimal complications. The closure methods range from simple suture to staple anastomosis<sup>8-9</sup>.

**MATERIALS AND METHODS:**

This Prospective case series was held in the Surgical Department of Nishtar Hospital Multan for two year duration from March 2017 to March 2019.

A total of 74 patients admitted to the surgery department were included in the study. The sampling method was purposive type. A detailed history was performed and all patients underwent a complete physical examination. In each case, the previous record was reviewed to determine the cause of the ileostomy and the operation date. In addition to routine examinations, serum electrolytes were applied to all patients and a contrast study confirmed the continuity of the distal bowel; Barium was used as a contrast agent in the first year of the study, but

gastrograffin was used in the last four years. This change was due to the difficulty in evacuating the barium from the distal portion of the intestine, causing a delay in reversing the ileostomy. Before the closure of ileostomy, the patient was treated for three months in case of tuberculosis and the main cause of ileostomy was treated. For other patients, a period of at least ten weeks from the end of ileostomy was considered the most appropriate time for closure. All ileostomy closures were performed electively. An elliptical incision was used around the stoma to prevent the formation of dog ears. The ileal ring was separated from the anterior abdominal wall by acute and blunt dissection. The cycle was mobilized and the margins were refreshed. Both ends of the ileum were examined to determine sufficient blood supply and end-to-end anastomosis was performed in two layers with vicryl 2/0. The integrity of the anastomosis was confirmed, hemostasis was achieved and the abdomen was closed without drainage. Patients were kept orally NPO for four days and then fluids were initiated. Semi-solid fat was allowed on the fifth postoperative day. The wound was examined on the third and fifth postoperative day. Sutures were removed on the eighth day and the patient was discharged if no complications were observed. The patients were followed up at the outpatient clinic one, three and five weeks after discharge.

**RESULTS:**

Analysis of the previous patient record revealed that ileostomy was most commonly performed with tubal and tuberculous perforations. Other causes are listed in Table I.

| Indication                      | No.       | %           |
|---------------------------------|-----------|-------------|
| <b>Typhoid perforation</b>      | <b>35</b> | <b>47.2</b> |
| <b>Tubercular perforation</b>   | <b>20</b> | <b>27.0</b> |
| <b>Non-Specific perforation</b> | <b>10</b> | <b>13.5</b> |
| <b>Trauma</b>                   | <b>5</b>  | <b>6.7</b>  |
| <b>Anterior resection</b>       | <b>3</b>  | <b>4.0</b>  |
| <b>Mesenteric ischemia</b>      | <b>1</b>  | <b>1.3</b>  |

**Table I. Indications for Ileostomy (n=74)**

The ages of patients who applied for closure of ileostomy ranged from 12 to 60 years, and the maximum age was 21-30 years. It performs more in males than in females (Table II).

**Table II. Age and Sex distribution of the patients (n=74)**

| Age Group   | Male | Female | No. of Patients | Percentage |
|-------------|------|--------|-----------------|------------|
| 12-20 years | 8    | 2      | 10              | 13.5       |
| 21-30 years | 18   | 7      | 25              | 33.8       |
| 31-40 years | 16   | 5      | 21              | 28.4       |
| 41-50 years | 8    | 4      | 12              | 16.2       |
| 51-60 years | 5    | 1      | 6               | 8.1        |

Working time ranged from 45 to 90 minutes. Wound infection was the most common complication in 10 patients (Table III).

| Complication               | No.       | %           |
|----------------------------|-----------|-------------|
| <b>Wound infection</b>     | <b>10</b> | <b>13.5</b> |
| <b>Bowel obstruction</b>   | <b>4</b>  | <b>5.2</b>  |
| <b>Incisional hernia</b>   | <b>2</b>  | <b>2.6</b>  |
| <b>Anastomotic leakage</b> | <b>1</b>  | <b>1.3</b>  |

**Table III. Complications**

In four patients complete wound rupture occurred and re suturing was done, wound healing occurred in the other six aseptic dressings. Intestinal obstruction occurred in four patients; all of them decided to have conservative treatment. Anastomotic leakage occurred in one patient requiring laparotomy and anastomosis revision. In the elective surgery list, incision hernia developed in two cases. No death was observed in this study.

### DISCUSSION:

Diverting loop ileostomies were first described in 1940 for the acute ulcerative colitis treatment. This procedure was subsequently abandoned due to the responsibility of the stoma to withdraw, prolapse and the lack of adequate adjustment devices<sup>10-11</sup>. The present appearance of this procedure was determined by low anterior resections, ileoanal anastomosis, stool deviation after recto-sigmoid resections with primary anastomosis in acute diverticulitis and severe perianal Crohn's disease. Since 1940, a number of technical improvements and advances have been made in the management of the stoma, making this procedure a viable alternative to loop colostomy<sup>12</sup>.

Typhoid perforations continue to have high morbidity and mortality rates regardless of the type of surgical procedure performed. A wide variety of operating procedures are tested in cases of enteric perforation. Loop ileostomy is a safe operation for fecal contamination in patients with contaminated peritoneal cavity<sup>13</sup>.

The reported mortality rate in tuberculosis perforations is very high up to 70%. Diagnosis of perforated tuberculosis enteritis is usually not performed before surgery because of non-specific signs and symptoms and lack of evidence of radiological tuberculosis in the thorax. Other

reported conditions include non-specific ileal perforations, colonic diverticulum perforation and inflammatory conditions of the colon, mesenteric ischemia, trauma and idiopathic perforations conditions in which ileostomy may be useful in preventing a catastrophe. Careful surgical technique is required to close the ileostomy with particular attention to asepsis and blood collection from the intestine<sup>14</sup>. In their study, Bada Yllan et al concluded that it was a well-tolerated procedure without morbidity and mortality. In the study of 293 cases, Van de Pavoordt et al. reported that the small intestine was occluded as an important complication, a wound infection rate of 3%, anastomotic leakage of 1%, and incisional hernia of 0.1%. Stapling of loop ileostomy has become more common in the west. In a study of suture ileostomy and suture, bowel obstruction was less common after stapling, but the mean hospital stay and the rate of re-admission and reoperation were not significantly different between the two groups<sup>15</sup>.

In our study, wound infection was more common in 74 ileostomy closure cases and all cases of intestinal obstruction responded to conservative treatment. Only one patient (1.3%) with anastomotic leakage requested reoperation during the same admission. Stapled anastomosis was not used due to economic constraints.

**CONCLUSION:**

Ileostomy is widely used for fecal diversion in peritonitis due to intestinal perforation in the east and to maintain anastomosis of the distal colon both in the east and west. While the structure of ileostomy is a life-saving procedure with special attention to the technique, closure is a safe procedure with minimal morbidity and mortality.

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