Formosan Journal of Surgery (2016) 49, 178—182

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.e-fjs.com

ORIGINAL ARTICLE

# Early feeding after loop ileostomy reversal: A prospective study

Vinay Mahla [a], Shehtaj Khan [b,*], Reyaz Ahmad [c], Raj Kamal Jenaw [d]

[a] *Employees' State Insurance Corporation Model Hospital, Jaipur, India*
[b] *Department of Surgery, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, India*
[c] *Department of Pediatric Surgery, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, India*
[d] *Department of Surgery, Sawai Man Singh Medical College, Jaipur, India*

Received 29 October 2015; received in revised form 27 February 2016; accepted 2 May 2016
Available online 13 July 2016

**KEYWORDS**
enteral feeding;
ileostomy;
ileus;
loop ileostomy

**Abstract** *Background/Introduction:* Defunctioning loop ileostomy is an essential procedure in gastrointestinal surgery; however, loop ileostomy reversal (LIR) presents specific complications. Studies have indicated that starting enteral feeding early following stoma closure facilitates the reduction of associated morbidity as well as the psychological and economic burden on patients.
*Purpose:* To prospectively examine the safety, tolerability, and outcome of early enteral feeding following LIR.
*Methods:* The study was conducted at a tertiary care hospital over 24 months. A total of 128 patients undergoing LIR were randomly assigned to an early enteral feeding group (Group A) and a conventional feeding group (Group B). Pre-, intra-, and postoperative variables were noted.
*Results:* Significant differences were observed in the postoperative resolution of ileus and the duration of hospital stay between the groups ($p < 0.05$).
*Conclusion:* Early enteral feeding after LIR is safe and sufficiently tolerated. Furthermore, it leads to the early return of bowel functions and thus shortens hospital stay.


Conflicts of interest: All the authors declare that there is no conflict of interest.

* Corresponding author. Department of Surgery, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, 202002, India.
*E-mail address:* shehtaj@hotmail.com (S. Khan).

http://dx.doi.org/10.1016/j.fjs.2016.05.001

## 1. Introduction

Defunctioning loop ileostomy is an established method for diverting bowel contents to protect the distal anastomosis and prevent the use of inflamed bowel. Ileostomy is usually reversed at 8–12 weeks. Although considered a minor procedure, loop ileostomy reversal (LIR) is associated with considerable morbidity and mortality.[1,2]

Patients scheduled for LIR are often malnourished, which, when severe, increases morbidity. Malnutrition is associated with poor healing and other septic complications.[3] Stoma closure necessitates an additional postoperative period of starvation, as well as nasogastric drainage to protect repair sites and prevent postoperative nausea and vomiting.

Typically, a course of uncomplicated abdominal surgery entails the stomach being drained by a nasogastric (NG) tube after surgery and the patient not being allowed oral intake until there is evidence that colonic motility has returned (this is usually indicated by flatus and passage of stool).

Earlier feeding without gastric drainage after bowel surgery has been attempted for healthy patients undergoing elective abdominal surgery, and it has been suggested that delaying oral feeding until the resolution of colonic ileus is unnecessary because early feeding is well-tolerated.[4–6]

Furthermore, various studies have concluded that early feeding is tolerable and beneficial for patients.[7,8] However, a bias seems to exist between evidence and practice. Therefore, the present study prospectively examined the safety, tolerability, and outcome of early enteral feeding following LIR.

## 2. Methods

This was a hospital-based randomized case–control study conducted at the Department of Surgery, Sawai Man Singh Medical College, Jaipur, India, and an associated group of hospitals. All cases of loop ileostomy undergoing LIR over a period of 24 months from October 2011 to October 2013 were included in the study. Patients categorized as American Society of Anesthesiologists (ASA) Grade 3 or higher, patients diagnosed with hemorrhagic tendency because of cirrhosis, immunosuppressed patients, and patients refusing to give informed consent were excluded from the study.

The patients were allocated to either Group A (early enteral feeding group) or Group B (conventional enteral feeding group) by a simple *chit box* randomization technique. In Group A, the NG tube was not passed and early enteral feeding was started within 24 hours postoperatively, irrespective of return of bowel functions (assessed by presence or absence of bowel sounds). In Group B, the NG tube was passed and enteral feeding was started only after the removal of the NG tube and the return of bowel functions.

The LIR was performed at least 8 weeks after the first operation. Prior to surgery, the continuity of the bowel distal to the ileostomy was confirmed radiologically in all patients; the distal loop was then irrigated to clear the impacted barium and fecaloma. Prophylactic broad-spectrum antibiotics were administered prior to induction of anesthesia. The enteric mucocutaneous junction was taken down and the adhesions between the small bowel and the anterior abdominal wall were freed through sharp dissection. Continuity of the bowel was then restored using continuous absorbable polyfilament suture. Fascial closure and skin closure were performed after returning the bowel into the abdominal cavity.

The duration of surgery was recorded with respect to operative findings and intraoperative complications (serosal tears and bleeding). During the postoperative period, nausea, vomiting, abdominal distension, timing of return bowel sounds, passage of flatus, bowel movements, tolerance of a regular diet, and length of hospitalization were noted in both groups. For the patients in Group A, the NG tube was inserted if two episodes of vomiting of more than 100 mL occurred over 24 hours in the absence of bowel movements. The same discharge criteria were applied for the patients in both groups and included bowel movement and the tolerance of a regular diet for a minimum of 24 hours.

### 2.1. Statistical analysis

The Chi-square test was used to assess and compare the difference in the proportion of surgical complications. The unpaired *t* test was used to assess and compare the duration of surgery, mean time of return of bowel sounds, passing of flatus, passing of stools, start of enteral feeding, and length of postoperative stay. A $p$ value $< 0.05$ was considered significant.

## 3. Results

A total of 146 patients underwent LIR in the study period. Of these patients, 14 were excluded due to comorbidities meeting the exclusion criteria and four did not give consent to enroll in the study. A total of 128 informed patients were randomly assigned to Groups A and B, with 64 patients in each group.

The groups had comparable age and sex distributions ($p > 0.05$). Moreover, both groups exhibited a comparable mean duration of surgery. However, the groups differed significantly in terms of the operative findings ($p < 0.05$): Group A had more flimsy adhesions and Group B had more dense adhesions. Intraoperative complications occurred in 18.7% of the patients in Group A and 20% of those in Group B, indicating no significant difference between the groups ($p > 0.05$; Table 1).

In Group A, 60 patients (93.75%) tolerated early feeding; no significant difference between the groups was found in the proportion of postoperative complications ($p > 0.05$). The mean time at which postoperative enteral feeding started was 14.72 hours in Group A, whereas that in Group B was 47.81 hours ($p < 0.05$). The mean time of postoperative return of bowel sounds, passage of flatus, and passage of stools were significantly reduced in Group A ($p < 0.05$; Table 2).

The mean duration of the postoperative hospital stay was also significantly shorter in Group A ($p < 0.05$; Table 2).