

Research Article

Comparison Study of Ileostomy Reversal by Resection and Anastomosis or by Primary Closure

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Received: 11.07.2026 Revised: 26.09.2026 Accepted: 04.10.2026

ABSTRACT

Background: Ileostomy is made routinely in emergency surgery. Typhoid perforation is an important cause of ileostomy, followed by trauma and malignancy. Ileostomy has to be reversed after about 3 months if indicated.

Objective: To evaluate the results of ileostomy reversal by primary closure and by resection and anastomosis in the same group of patients.

Study Design: Prospective comparative study.

Place and Duration of Study: Surgical Department of Nishtar Hospital Multan, from June 2023 to June 2024.

Methodology: Patients were divided into two groups. Group A underwent reversal by primary closure of the ileostomy defect. Group B underwent ileostomy closure by resection and anastomosis of the defect.

Results: Thirty patients were placed in each group. Patients in Group A, in whom closure was done by the primary closure technique, had fewer complications and a shorter hospital stay compared with closure by resection and anastomosis.

Conclusion: Ileostomy closure by primary closure was associated with fewer complications and earlier recovery from surgery compared with the resection and anastomosis technique.

Keywords: Ileostomy Reversal, Emergency Surgery, Typhoid Perforation, Primary Closure, Resection and Anastomosis.

INTRODUCTION

A defunctioning loop ileostomy is often created to divert bowel contents away from the site of anastomosis, thereby reducing the need for reoperation for an anastomotic leak. Ileostomy is also performed in emergency surgery to prevent sepsis or to divert gastrointestinal contents from distal repairs. [4, 8, 13]

Ileostomy reversal is performed about 3 months after surgery, if indicated, depending on the patient's condition. Before surgery, distal patency is checked by distal loopogram. The gut is prepared before surgery by different techniques. Closure is done under general anaesthesia either by primary closure of the ileal defect or by resection of the stoma and end-to-end anastomosis. [1, 5, 9, 13]

In the primary closure technique, the stoma is mobilised, the margins are released and freshened, and primary closure is performed. Only the defect in the anterior wall has to be

closed because the posterior wall is already present. In resection and anastomosis, the stoma is mobilised, followed by resection and end-to-end anastomosis.

Objective of the Study

The objective was to compare the outcomes of the two techniques. Surgery should be performed by an experienced surgeon. The primary objective was to compare the outcomes of both techniques.

According to the article, few studies have been conducted on this topic. The study aimed to assess and compare postoperative complications with both techniques, including leak of repair, sepsis, bleeding, paralytic ileus, postoperative obstruction, surgical-site infection, and deep-space infection. The study aimed to provide insight into the effectiveness and safety of each technique.

MATERIALS AND METHODS

Patients were categorised into two groups: those undergoing reversal by primary closure (Group A) and those undergoing reversal by resection and anastomosis (Group B). Both groups were closely observed for complications such as anastomotic leakage, wound sepsis, bleeding, obstruction, prolonged ileus, and deep infections. The study was conducted at Ibn-e-Siena Hospital Multan.

Inclusion Criteria: All patients aged 15 to 60 years who were to undergo ileostomy reversal after about 3 months were included.

Exclusion Criteria: Patients who had suffered complications after ileostomy were excluded.

RESULTS

Table 1. Demographic Characteristics

Characteristic	Group A: Primary closure	Group B: Resection and anastomosis
Total patients	30	30
Age range	15–60 years	15–60 years
Male	22	21
Female	8	9
Operative time	30–40 minutes	40–50 minutes
Intraoperative bleeding	10–15 mL	20–30 mL (as listed in results table)
Postoperative bleeding	Nil	1 case
Superficial surgical-site infection	10	11
Deep infection	3	5
Organ-space infection	2	6
Faecal fistula	Nil	2 (results table)
Re-exploration	Nil	1
Return of bowel function	Postoperative day 2	Postoperative day 3
Paralytic ileus / no bowel function for more than 3 days	Nil	6 patients

Table 2. Comparison of Postoperative Complications with Calculated P-Values

Outcome	Primary closure (n=30)	Resection + anastomosis (n=30)	p-value
Superficial surgical-site infection	10 (33.3%)	11 (36.7%)	1.000
Deep infection	3 (10.0%)	5 (16.7%)	0.706
Organ-space infection	2 (6.7%)	6 (20.0%)	0.254
Faecal fistula	0 (0.0%)	2 (6.7%)	0.492
Postoperative bleeding	0 (0.0%)	1 (3.3%)	1.000
Re-exploration	0 (0.0%)	1 (3.3%)	1.000
Delayed bowel function (>3 days)	0 (0.0%)	6 (20.0%)	0.024

The source presentation contains inconsistencies in some reported figures. The results table lists intraoperative bleeding in Group B as 20–30 mL, while the discussion states 30–40 mL; the results table reports two faecal fistula cases in Group B, while the discussion refers to three. These figures have been retained as reported rather than reconciled.

DISCUSSION

Ileostomy reversal is a routine surgical procedure on elective operating lists. The procedure is technically demanding and is usually performed by a senior surgeon. The study divided patients into two groups of 30 and compared the outcomes of both techniques.

In the primary closure group, operative time was shorter than in Group B, attributed to less

tissue resection and earlier closure (30–40 minutes in Group A compared with 40–50 minutes in Group B).

Bleeding was reported to be less in Group A than Group B. The discussion attributes this to bleeding from the mesentery and resected margins of the bowel. The discussion reports 10–15 mL in Group A and 30–40 mL in Group B.

Surgical-site infection was reported to be less in Group A, attributed to less manipulation, less spillage, and less bleeding. Related evidence on stoma-site skin closure is reported separately in references [15–19]; it does not directly compare the bowel closure techniques studied here.

The discussion states that three patients developed faecal fistula in Group B and none in Group A. It attributes this to primary repair of the anterior wall in Group A compared with resection and anastomosis of both anterior and posterior walls in Group B. One patient in Group B underwent re-exploration because of leakage; the other two healed with conservative management.

Bowel function returned earlier in Group A, which was attributed to less manipulation and trauma. The discussion reports paralytic ileus in one patient in Group B and none in Group A; this differs from the results table, which records six patients in Group B with no bowel function for more than 3 days. Recent evidence on ileostomy reversal morbidity and recovery is also discussed in references [2, 4, 6, 20].

CONCLUSION

Both techniques are described as useful; however, the article recommends ileostomy closure by the primary closure technique because of less trauma, less bleeding, a lower chance of leakage, and earlier recovery.

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