

Comparison of Early versus Delayed Temporary Ileostomy Reversal in Colorectal Anastomosis

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ABSTRACT

Aim: To compare the outcome of early versus delayed temporary ileostomy reversal in colorectal anastomosis.

Design: Randomized control clinical trials

Place & period of the study: Surgical Unit 1 of the Services Hospital in Lahore from December 2017 to June 2018.

Methods: A total of 176 patients, undergoing distal colorectal resections were divided randomly into group A; ileostomy reversal in less than 2 weeks after primary surgery and group B; ileostomy reversal after 8 weeks of primary surgery was followed for 4 weeks to access wound infection, abdominal pain, anastomotic leak, soreness and gut material discharge through the wound.

Results: The average age of patients was 40.48+13.13years [range 18-60] in group A. In group B, the average age of patients was 41.92+14.08 [range 18 – 60]. Post-operative wound infection occurred in group A were 12 (13.63%) and in group B 8 (9.09%) while anastomotic leakage observed in 7 (8%) of group A patients and 4 (4.5%) of group B patients. Calculated p – value was 0.350 and hence not significant (p> 0.05).

Conclusion: Early closing of loop de-functioning ileostomy in patients receiving distal colorectal resection is feasible and produces comparable results to delayed closure.

Keywords: Ileostomy reversal, colorectal anastomosis, abdominal pain, loop ileostomy

INTRODUCTION

Construction of a loop ileostomy temporarily in patients at a major risk of colorectal anastomosis is an appropriate surgical adjunct, which reduces both the rate of symptomatic anastomotic leak and the requirement of reoperation in these kinds of cases^{1,2,3}.

In fact, the postoperative causes of morbidity or mortality for the low colorectal, coloanal and ileoanal anastomosis solely are significantly greater than the fecal diversion is routinely recommended⁴. Unfortunately, this protective effect is often provided at the expense of stoma related morbidity. De-functioning loop ileostomies usually reversed after 8-12 week period, during which up to 19-74% of patients with ileostomy experience ileostomy-related complications⁵.

Frequently occurring complications of stomas including fecal constituents contact with the skin round the stoma appliance, excoriation or skin rash, electrolyte imbalance, high ileostomy output, herniation, contraction and prolapse. Temporary loop ileostomy is a major physiological barrier that also induces significant physical stress and degrading quality of life (Therefore, many patients may distress with the perception of a stoma and are anxiously concerned to get rid of stoma as early as possible).

Finally, the optimal interval between first-line treatment and ileostomy closure is not predefined and may be related with the developing risk of postoperative complications. The feasibility of early temporary ileostomy closing following rectal surgery has been assessed in two prospective, non-randomized study trials of 27 and 39 patients, respectively. These pilot studies provided promising outcomes with no mortality and nullify revision surgical procedures^{4,6}. Instance, there is also a risk of morbidity following stoma reversal⁷.

The objective of the study was to compare outcome of early vs delayed temporary ileostomy reversal in colorectal anastomosis.

MATERIAL & METHODS

This randomized control trial was regulated in Surgical Unit 1 of Services hospital, Lahore (SIMS) from Dec. 2017 to June 2018 after approval from the Hospital Ethical Review Board. The study included patients with a temporary ileostomy after low anterior resection for rectal cancer, traumatic bowel injury, colo-colic, ileocolic, ileoanal

anastomosis in ulcerative colitis, colonic diverticulitis and those who had ASA grade I/II (physically and mentally suitable for surgery) within 8-13 days. After obtaining informed consent, a detailed history of demographics (age, gender, address) was noted, all the patients were clinically examined and their distal loopogram were also evaluated. Patients were operated for stoma closure under general anesthesia.

All procedures were carried out by single surgical operating team to limit bias. Patients were followed up for 4 weeks after the surgery to assess the outcome i.e. wound infection. Another variable i.e. anastomotic leak was also recorded. It was labeled as abdominal pain, tenderness and release of intestinal contents from the wound. The data was entered and analyzed using SPSS v 20.0. Mean and standard deviation were calculated for quantitative variables such as age. Frequency and %age were calculated for qualitative variables such as gender, wound infection; and a chi-square test was applied to compare the outcome. A p-value of ≤0.05 was assumed to be significant.

RESULTS

The study included 176 patients who needed their temporary ileostomy reversed. The patients were separated into two groups: Group A (88) patients underwent early reversal of temporary ileostomy and group B (88) patients underwent delayed reversal of temporary ileostomy in colorectal anastomosis.

The patients in group A were 40.48+13.13 years old on average [range 18-65]. There were 22(25%) patients aged 18–30 years, 24(27.27%) patients aged 31- 40 years, and 18(20.45%) patients aged 41–50 years. There were also 24(27.27%) patients who were over 50years (Table 1). In group B, the average age of patients was 41.92+14.08 [range 18 –65]. There were 22(25%) patients aged 18-30 years, 23(26.13%) patients aged 31–40 years, 14(15.9%) patients between the ages of 41–50 years and patients over the age of 50 accounted for 29(32.95%) of the total (Table 1). Group A had 55 male patients (62.5%) and 33 female patients (37.5%). In Group B, 62(70.5%) patients were male and 26(29.5%) were female (Table 2). In group A, there were 12(13.63%) patients in whom wound infection was observed within 14 days of surgery, while rest of 76(86.36%) patients did not develop wound infection (Table 4). In group B, wound infection was observed in 8(9.09%) patients and rest of rest of 80(90.90%) patients did not develop wound infection (Table 4). The two groups were also compared with each other for any significant difference. Chi-square test was used. Calculated p – value recorded 0.342 and hence

Received on 15-11-2021

Accepted on 25-05-2022

not significant ($p > 0.05$) (Table 4). In group A, there were 7(8%) patients in whom anastomosis leakage was observed within 14 days of surgery, while rest of 81(92%) patients did not develop anastomosis leakage. (Table 3) In group B, anastomosis leakage was observed in 4(4.5%) patients and rest of rest of 84(95.5%) patients did not develop anastomosis leakage (Table 3). The two groups were also compared with each other for any significant difference. Chi-square test was used. Calculated p -value recorded 0.350 and hence not significant ($p > 0.05$).

Table-1: Age of patients in Treatment Groups

	Group-A	Group-B
N	88	88
Mean	40.48	41.92
SD	13.13	14.08
Minimum	18	18
Maximum	65	65

Table-2: Gender of patients in Treatment Groups

	Group-A	Group-B	Total
Male	55(%)	62(%)	117
Female	33(%)	26(%)	59
Total	88	88	176

Table-3: Anastomotic Leak in Treatment Groups

	Group-A	Group-B	Total
Yes	7(8%)	4(4.5%)	11
No	81(92%)	84(95.5%)	165
Total	88	88	176

Chi-Square Test= 0.873, p -value= 0.350

Table-4: Wound Infection in Treatment Groups

	Group-A	Group-B	Total
Yes	12(13.6%)	8(9.1%)	20
No	76(86.4%)	80(90.9%)	156
Total	88	88	176

Chi-Square Test= 0.903, p -value= 0.342

DISCUSSION

Closing of the ileostomy after distal colorectal resection both for neoplastic and non-neoplastic lesions has been linked to significant morbidity and a lower quality of life. Furthermore, personal preference, prolonged adjuvant therapy, post-operative consequences of chronic septic or non-septic such as persistent anastomotic leakage or stricture may delay closure in a subset of patients with de-functioning stomas. The early closing of an ileostomy could help to reduce ileostomy-related prevalence, morbidity and poor health-related quality of life.

Stoma was reversed 8–10 days after surgery in a randomized controlled study with 186 patients as compared to 62–69 days for the standard procedure⁸. During this study, there were no significant difference in the frequency of complications (15% in both groups) while there were significant differences in the types of complications, with appreciably more wound complications in the early closure group and significantly many cases of small bowel obstruction in the late closure group⁸.

A prospective analysis revealed that early reversal (median 11 days rather than 2–3 months) had not been linked to higher morbidity or mortality⁹. A comparatively small randomized research examined the role of early ileostomy closure (10 days after the surgery) in 36 preoperatively designated patients¹⁷. This respective study discovered that the length of hospital stay in the intervention group was considerably shorter, and the time from bowel function to resumption of oral intake was not different between groups. As a result, the authors came to the conclusion that early intervention did not increase the risk of complications¹⁷.

Loop ileostomies must be closed early, especially if adjuvant chemotherapy for distal disease process is planned¹⁶. However, few authors argue that the cut-off value for elevated risk of postoperative complications is noted as 8 weeks, below which the risk of such incidence is gradually increased with an 88% sensitivity rate^{10,11}.

Colic or ileocolic stoma closure should not be considered a minor treatment due to the high risk of complications, including death. According to several researchers, the outcome of the closing will be determined by the technique and timing of the closure¹². In general, if the risk factors for a complex stoma like old age, diabetes, hypoalbuminemia, peritonitis, tuberculosis, steroid dependence or post-primary surgical complications are too high and if there is a high injury

severity score then a delay of at least 2-3 months is normally recommended from stoma creation to its closure. Otherwise, stoma closure before 3 months does not result in additional morbidity or mortality¹⁸.

The most common complication in all groups was wound infection. In group A, 12(13.63%) wound-infected patients were observed within 14 days after surgery. In contrast, in group B, wound infections were observed in 8(9.09%) patients. Other complications such as gut obstruction and peritonitis were minor. There was no mortality in this succession which is reassuring enough when compared to previous researches^{12,13,14}.

Early stoma closing is dependent on the basic principles of collagen synthesis at the ends of the intestine and wounds that is in the proliferative phase in 7-11 days¹⁵ which improves anastomosis and wound healing. The primary objective of routinely closing large and small gut stomas at 2-3 months is to attain optimal nutritional status, enable distal repairs to heal, and infection and inflammation to subside¹⁵.

CONCLUSION

Early stoma closure is an appealing option that the patient and his personnel welcome when the distal loop studies are regular and the patient may be fit and compliance with good health that not just relieves the patient of the negative influence of a stoma, but also lessens the financial strain he have to withstand in terms of purchasing the collecting appliances, readmissions for stoma problems, closure and the loss of the opportunity to return to work sooner. To confirm our findings, more multicenter trials are needed.

Conflict of interest: Nil

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