

Prophylactic Ileostomy Related Complications of Laparoscopic Low Rectal Cancer Surgery and Analysis of the Timing of Recovery

Hao Zhang, Youzhong Ke, Hua Tang*

The First Hospital of Chongqing Medical University, Chongqing Medical University, Chongqing, China.

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***Corresponding author:** Hua Tang, The First Hospital of Chongqing Medical University, Chongqing Medical University, Chongqing, China.

Abstract

Objective: To investigate the prophylactic ileostomy related complications of laparoscopic operation for low rectal cancer and the timing of recovery. **Method:** A total of 199 patients who underwent laparoscopic low rectal cancer anterior resection and preventive ileostomy restoration in the First Affiliated Hospital of Chongqing Medical University from 2016 to 2021 were selected and divided into two groups according to the recovery time: early recovery group and late recovery group, and 60 patients in early recovery group (1 to 3 months after rectal cancer surgery). In the late recovery group, 139 patients (3 months after rectal cancer surgery). The incidence of ostomy-related complications and postoperative complications were compared between the two groups. **Results:** The incidence of peristomy dermatitis in the early restoration group was significantly lower than that in the late restoration group ($P < 0.05$), and there were no significant differences in the complications related to the residual stoma and postoperative complications between the two groups ($P > 0.05$). **Conclusion:** Early restoration can reduce the incidence of peristomy dermatitis, without increasing other complications related to the stoma and postoperative complications, and can bring better quality of life for patients.

Keywords

Low rectal cancer, Prophylactic ileostomy, Ostomy-related complications, Timing of recovery

Rectal cancer is one of the common malignant tumors, and low rectal cancer has a high incidence in China. Due to the high incidence of anastomotic leakage in laparoscope-assisted radical resection of low rectal cancer, more patients will be applied to preventive ileostomy, which reduces the serious complications after anastomotic leakage and the probability of reoperation. Moreover, it greatly reduces the mortality rate after the occurrence of colorectal cancer anastomotic fistula [1-2]. However, ostomy can seriously reduce the quality of life of patients, and there are various complications during the period of ostomy and recovery. What is more serious is that about 20% of patients cannot recover for various reasons [3-4]. In recent years, with the rapid development of anus-preserving surgery for low rectal cancer, the occurrence of complications can be reduced and the quality of life of patients can be better improved if reasonable repair is performed.

1. Data and methods

1.1 General information

The selected patients were all first-time laparoscopic low anterior resection for rectal cancer and collaterals

ileostomy. The recovery time was divided into two groups: early recovery group and late recovery group, with 60 cases in the early recovery group. There were 41 males and 19 females, with an average age of 60.9 years, all of whom underwent ileostomy reduction 1 to 3 months after rectal cancer surgery. In the late recovery group, 139 patients (84 males and 55 females, average age 62.9 years) underwent ileostomy reduction 3 months after rectal cancer surgery. Follow-up and chemotherapy were carried out in accordance with Chinese Norms for the Diagnosis and Treatment of colorectal Cancer. Colonoscopy and CT examination were performed before the surgery, and it was confirmed that the anastomosis was unobstructed without stenosis and no tumor recurrence or metastasis. There was no significant difference in gender, age, BMI, preoperative complications, tumor stage and other general clinical data between the two groups ($P > 0.05$).

1.2 Methods of ileostomy reduction

The brief steps were as follows: the ileostomy was closed and fixed subcutaneously before disinfection, and the iodophor gauze was fixed on the skin of the stoma, and then routine disinfection and towel laying were carried out. The shuttle incision was made along the circumference of the stoma and into the abdomen layer by layer. After dissociating the required intestinal segment, the lateral anastomosis was performed with a straight line cutting closure device, and the anastomosis was strengthened, the mesangial hole was closed, and the retroperitoneal sheath, anterior sheath of rectus abdominis and skin were sutured respectively.

1.3 Statistical methods

SPSS 26.0 statistical software was used to analyze clinical data by statistical methods such as normality test, Chi-square test and rank sum test, and $P < 0.05$ was considered statistically significant.

2. Results

Comparison of stoma-related complications between the two groups. Early recovery group: 11 cases, 18.3%; Late recovery group: 37 cases, 26.6%. There was no significant difference in the overall incidence of ostomy-related complications between the two groups (18.3% vs 26.6%) ($P > 0.05$). The incidence of peristomy dermatitis in early restoration group was significantly lower than that in late restoration group (8.3% vs 20.9%, $P < 0.05$). There was no statistical difference between the two groups (see Table 1). Comparison of postoperative complications between the two groups. There was no statistically significant difference between the two groups (see Table 2).

Table 1. Comparison of ostomy-related complications between the two groups

		Early recovery	Late recovery	c2	P
Ostomy-related complications	No	49	102	1.572	0.210
	Yes	11	37		
Ostomy hemorrhage	No	58	138	1.929	0.165
	Yes	2	1		
Ostomy necrosis	No	59	139	2.328	0.127
	Yes	1	0		
Peristomy dermatitis	No	55	110	4.645	0.031
	Yes	5	29		
Ostomy retraction	No	59	137	2.328	0.127
	Yes	1	2		
Prolapse of stoma	No	59	138	0.378	0.539
	Yes	1	1		
Stricture of stoma	No	60	137	0.872	0.350
	Yes	0	2		
Parastomal hernia	No	59	137	0.015	0.904
	Yes	1	2		

Table 2. Comparison of postoperative complications between the two groups

		Early recovery	Late recovery	c2	P
Incision infection	No	59	137	0.015	0.904
	Yes	1	2		
Intestinal obstruction	No	56	126	0.387	0.534
	Yes	4	13		
Anastomotic leakage	No	59	138	0.378	0.539
	Yes	1	1		

3. Discussion

In recent years, with the improvement of people's requirements for quality of life and the continuous progress of colorectal surgery, the anus preservation rate of middle and lower rectal cancer has significantly increased, but the incidence of anastomotic leakage has significantly increased. According to foreign literature reports, the incidence of anastomotic leakage is still 3% - 24% after the operation of middle and low rectal cancer, and the related mortality is up to 6% - 26% [5]. Despite precautionary measures, anastomotic leaks still occur to varying degrees.

More and more studies have shown that although preventive ostomy cannot reduce the incidence of anastomotic leakage, it can reduce the serious complications caused by anastomotic leakage and reduce the rate of secondary operations and mortality due to its fecal diversion effect [1, 2, 6]. However, prophylactic ileostomy itself also brings a series of complications, such as ostomy bleeding, ostomy necrosis, peristomy dermatitis, ostomy retraction, ostomy prolapse, ostomy stenosis and parastomy hernia, etc [7]. Domestic and foreign studies have shown that the selection of appropriate time for restoration can significantly reduce the complications of patients. Bausys et al. [8] found that compared with 3 months after surgery, the complication rate of patients undergoing restoration 1 month after surgery was significantly increased. It is recommended to perform reductive surgery 1 to 3 months after rectal cancer surgery. Walma et al. [9] believed that ostomy restoration within 3 months could bring better quality of life to patients. It has also been reported that the complications will decrease significantly 12 weeks before the operation [10-11]. A total of 199 patients were included in this study, who underwent colostomy reduction 1 month after rectal cancer surgery. The postoperative results showed that early repair significantly reduced the incidence of peristoma dermatitis. Analysis of reasons: peristoma dermatitis is mainly due to prolonged contact of irritating stoma effluent with the peristoma skin, and the incidence of peristoma dermatitis can be reduced if prevention and care are provided. In the patients included in this study, the incidence of residual stoma-related complications was low. The postoperative complications can not be ignored. A highly cited meta-analysis involving 48 studies and 6107 patients [10] indicated that the incidence of complications after the surgery was 17.3%. Intestinal obstruction (7.2%), incision infection (5.0%) and anastomotic leakage (1.4%) were the most common complications. In this study, the incidence of intestinal obstruction (8.5%) and anastomotic leakage (1.0%) was similar to that reported in the literature. The incidence of incision infection (1.5%) was low.

4. Conclusion

With the widespread application of prophylactic ileostomy in low anterior rectotomy, more and more patients have been treated with ileostomy, and various problems before and after its reduction have been paid more and more attention. As for the timing of surgery, the author suggests that if there no clear contraindications, preventive surgery for surgery can be performed 1 to 3 months after surgery, which can reduce the incidence of dermatitis around the stoma, without increasing the incidence of stomato-related complications such as stoma bleeding and stoma necrosis and postoperative complications, and at the same time can bring better quality of life to patients.

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