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Original research

EFFECTIVENESS OF THE PROCESS OF PREPARING FOR PATIENTS BEFORE LAPAROSCOPIC COLECTOMY SURGERY DUE TO CANCER

Nguyen Thanh Xuan[1], Nguyen Thi Thanh Ly[1], Nguyen Thi Kim Anh[1], Nguyen Thi Mai Huong[1], Nguyen Thanh Phuong Thao[1]

[1]Hue Central Hospital

ABSTRACT

Purpose: *To build and assess the result of the implementation in the Mechanical Bowel Preparation (MBP) process for patients undergoing laparoscopic elective colorectal surgery for cancer at the General Surgery Department in the International Medical Centre of Hue Centre Hospital.*

Method: *41 colorectal cancer patients had laparoscopic elective surgery from 01/2019 to 03/2020. To observe the performance of the preoperative preparation process for patients undergoing elective surgery and assess the effectiveness of treatment, the complication rate such as anastomotic leak, wound infection, and intra - abdominal abscess. Patients were followed up for 30 days after operation.*

Results: *100% of patients completed the process, and the complication rate of anastomotic leak was 0%. Wound infection occupied 14,6%, including 6 patients; intra-abdominal abscess occupied 2,4%, including 1 patient; and early postoperative adhesive small bowel obstruction occupied 0%.*

Conclusion: *Non - mechanical bowel Preparation (MBP) reduces the amount of work for nurses, creates a good spirit for the patient before the operation, and doesn't increase the complication rate.*

Keywords: *Colorectal cancer, colectomy, mechanical bowel preparation, anastomotic leak.*

I. INTRODUCTION

Surgery, in general, is a treatment method that causes trauma and certain effects on the patient's body [1]. For patients to undergo surgery, they must be mentally and physically prepared [2]. We need to clearly see that preparing the patient before colectomy is a very important job, contributing to the success of the surgery. Any colorectal surgery, whether scheduled or emergency, requires patient preparation before surgery [3]. If we ignore even the smallest pre-operative preparation steps, it will affect the results of the surgery, and the first people who suffer are the patient, the patient's relatives, and then our health staff themselves. Preparation work must be done seriously, carefully, thoughtfully, and according to a certain process to avoid errors. Patient preparation must be carried out continuously from when the patient is scheduled for surgery until the time they have surgery [4]. Each medical facility can carry out the patient preparation process in different ways, but no matter what facility, you need to be aware that preparing the patient before surgery greatly impacts the success or failure of the surgery [5]. This study aims to build and assess the result of the implementation of the Mechanical Bowel Preparation (MBP) process for patients undergoing laparoscopic elective colorectal surgery for cancer at the General Surgery Department in the International Medical Centre of Hue Centre Hospital.

II. MATERIALS AND METHODS

We enrolled 41 patients diagnosed with colorectal cancer and underwent laparoscopic colorectal surgery at the Department of Surgery - Center for Medical and International Surgery of Hue Central Hospital from January 2019 to March 2020.

Administrative preparation: The doctor carefully

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Corresponding author: Nguyen Thi Thanh Ly. Email: thanhlynguyen.12990@gmail.com. Phone: 0915411117

advises on the surgical method, the patient's current and post - operative condition, the doctor signs and explains the surgical consultation sheet, and the family signs on one side. Have family members write a commitment letter agreeing to surgery. The nurse completes the additional documents, fully supplements the administrative notes, fully checks the results of preoperative tests according to medical orders, and promptly reports any abnormalities. Nurses and doctors advise and explain the preparation process for patients before surgery as follows:

- Take the patient to the room and instruct the patient: Remove makeup and clean fingernails and toenails before surgery. Comb and tie hair neatly. Remove contact lenses if any. Remove removable dentures, if any. Remove all jewelry, including body piercings. Wear clothes and shoes provided by the hospital. Maintaining body hygiene helps minimize the risk of infection after surgery. Nurses will instruct and ask patients to shower before surgery and support family members for patients who cannot perform it themselves.

- Mark the surgical site and disinfect it with an antiseptic solution.

- Wear a patient identification bracelet.

- Follow vital signs.

Bowel preparation: Patients can be hospitalized and have surgery on the same day. Patients fast 6 hours before surgery. 6 to 12 hours before surgery, patients can drink milk or eat liquid porridge, 1-2 days before surgery can eat normally. Inject an Fleet enema solution 133ml x 1 type into the anus, and instruct the patient to hold in their bowel movements until they cannot hold in any longer. For patients with intestinal obstruction, completely abstain from food and drink and receive fluids for nourishment.

III. RESULTS

Average time of movement after surgery: 24.5 hours. Average flatus time after surgery: 49.7 hours. According to table 1, the elderly group often suffers from this disease and accounts for 87.8%. So, it is necessary to develop a preparation process to avoid wasting the patient's health. The group of male and female factors is not statistically significant.

Table 1: Some general characteristics of the patient

Characteristic	N	Rate
Age		
< 50	5	12,2
> 50	36	87,8
Gender		
Male	25	61
Female	16	39

All studied cases were laparoscopic surgery: according to Table 2, 36.6% of patients had colorectal surgery, followed by rectal surgery with 31.7%. All cases followed the same procedure.

Table 2: Surgical methods

Laparoscopic surgical method	N	Rate
Remove the cecum of the colon's beginning part.	1	2,4
Remove right colon.	5	12,3
Remove transverse colon	1	2,4
Remove left colon.	2	4,7
Remove pelvic colon	4	9,9
Remove colorectum	15	36,6
Remove rectum	13	31,7

The complications that we fear the most do not seem to happen, specifically there is only 1 case of intra - abdominal abscess requiring re - operation, accounting for 2.4%, however surgical wound infections still occur, accounting for 14. 6% with 6/41 cases (Table 3).

Table 3: Rates of complications, no complications and re-operation

	N	Rate
Happened Complications		
Anastomotic leak	0	0
Wound infection	6	14,6
Intra-abdominal abscess	1	2,4
Early bowel obstruction	0	0
No Complications	34	83
Re-operation	1	2,4

In Table 4, we see that 01 patient with a hospital stay of up to 30 days has an abscess complication, accounting for 2.4%. An average of 13 - 16 days accounts for 21.9%, and surgical wound infections will fall within this date frame. The average of 8 - 12 days accounts for 63.5%. Finally, on hospital days from 5 to 7, there were 5 patients, accounting for 12.2%. Figure 1 shows that most patients stay in the hospital for 8 - 12 days

Table 4: Number of hospital stays and postoperative days

	N	Rate
Total number of days in hospital		
5 - 7	5	12,2
8 - 12	26	63,5
13 - 16	9	21,9
30	1	2,4
Total number of postoperative days		
5 - 7	20	48,8
8 - 12	17	41,5
13 - 16	3	7,3
24	1	2,4

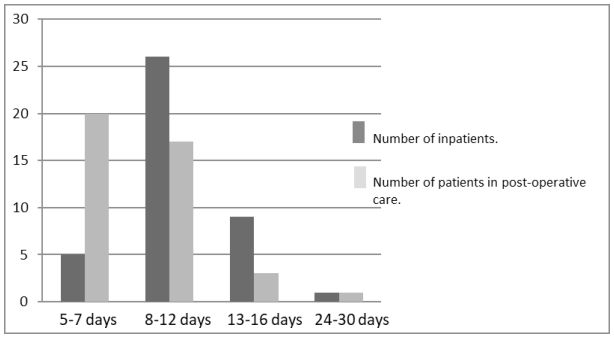

Figure 1: Number of hospital stays and postoperative days

IV. DISCUSSION

In the traditional method, patients are hospitalized 3 - 5 days before surgery, eat a liquid diet and receive intravenous nutrition 1 - 2 days before surgery, use laxatives 2 days before surgery and do colon enemas before the day of surgery: If the tumor has caused a large narrowing of the intestinal lumen, causing intestinal obstruction or semi-obstruction (the endoscope cannot pass through), then do enemas twice a day (morning and evening) for 3 days before surgery and early in the morning on the day of surgery. In this case, the patient is completely restrained and given fluids for nourishment. If the tumor has not caused significant narrowing of the intestinal lumen (an endoscope can pass through), give oral or Fortrans 2 packets, each packet mixed with 1 liter of water; or 90ml (2 boxes) of phosphosoda (Fleet) with about 2 liters of water the night before surgery (12 - 16 hours before surgery). After taking, tell the patient to have a bowel movement until the feeling of having to defecate is gone. It can cause dehydration and electrolyte disorders, especially in the elderly. More seriously, it can cause intestinal perforation, causing fatigue and loss of strength for the patient.

In current methods, patients can be hospitalized and have surgery on the same day. Patients fast 6 hours before surgery. 6 to 12 hours before surgery, patients can drink milk or eat liquid porridge, 1 - 2 days before surgery can eat normally. Cleanse the intestines by injecting Fleet enema solution into the anus and instructing the patient to hold in their bowel movements until they cannot hold in any longer. For patients with intestinal obstruction, completely abstain from food and drink fluids for nutrition.

There were no signs of intestinal disorders or perforation, the patient was in a comfortable spirit and did not lose much strength, ensuring good health for the surgery.

Preoperative preparation is an extremely important step. This is the time when the patient can be well prepared physically and mentally for surgery, optimizing patient care services, helping the patient feel comfortable and satisfied, and creating a stable psychological state before surgery. Any factors that may influence anesthetic or surgical risk can be identified during this time to minimize surgical delays and prevent complications and deaths, especially in gastrointestinal surgery. Therefore, careful and complete preparation from relevant departments is required [6].

Preoperative mechanical bowel preparation (MBP Mechanical Bowel Preparation) has historically been considered the standard procedure on the basis of the belief that it reduces infection rates and anastomotic sterilization by reducing fecal

and bacterial load. But according to research, this concept is often only based on experience without much convincing evidence [7-12].

The simpler bowel preparation phase of the procedure at our center has helped nurses reduce unnecessary work. They focus on fully preparing mentally and physically to help patients have a comfortable and ready psychological state for the planned surgery. On the other hand, according to research results, this does not cause negative complications and has positive signs equivalent to or better than having bowel preparation.

Current reports indicate that colorectal surgery accounts for 25% of all surgical complications and that the average hospital stay for standard elective colectomy is 8 to 12 days. According to the research results at the Department of Surgery, the average hospital stay has shown signs of decreasing to about 5 - 7 days, which is a good sign, and the rate of complications is almost rare.

To improve complications and treatment time, Kehlet and colleagues introduced the concept of enhanced recovery after surgery (ERAS) or rapid follow-up with multimodal therapies to reduce stressful surgery, enhance post-operative recovery, and reduce hospital stay.9 The elements in this concept are surgical care interventions focused on anesthesia, analgesia, reduction of surgical stress (both endocrine and inflammatory metabolic responses), targeted treatment, prevention of vomiting (return to bowel function), thromboprophylaxis, minimally invasive techniques, nutrition and early mobilization. There have been many studies of the ERAS program and patients in these studies had a faster return to bowel function, shorter hospital stays, and reduced complication rates [13, 14].

The process introduced above at the Department of Surgery - Medical Center and International Hospital is aiming at the ERAS (Enhanced Recovery After Surgery) program that many hospitals around the world are currently applying, and in Vietnam, it has been successfully applied in some big hospitals such as Cho Ray, Vinmex, ... not only in colorectal surgery but also in gastric surgery, liver resection or even obstetric surgery. ERAS's goal is to provide comprehensive patient care before, during, and after surgery to reduce hospital stay, improve treatment quality and reduce costs, reduce the rate of complications for patients.

V. CONCLUSION

Research results on the process of preparing patients before laparoscopic colorectal surgery at the Department of Surgery show the necessary shortening of the old process, helping to reduce the workload for nurses, and creating good morale for patients before surgery without increasing complications of anastomotic leak and wound infection for elective colorectal resection.

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