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Nursing Effect of Rapid Rehabilitation Surgery Concept in Laparoscopic Surgery for Extrahepatic Bile Duct Stones

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Abstract

Objective: To explore the application value of rapid rehabilitation concept in patients with extrahepatic bile duct stones under laparoscopy during perioperative period. **Methods:** 90 patients with extrahepatic bile duct stones treated in our hospital from January 2022 to February 2023 were selected as the research object and randomly divided into the study group and the control group. The control group was given routine care, and the observation group was given rapid surgical rehabilitation care. The postoperative anal exhaust time, first meal time, early activity time, pain time, abdominal drainage tube removal time, hospitalization time and complication rate were compared between the two groups. The independent sample T test was used for the measurement data, and the x^2 test was used for the counting data, and the difference was statistically significant ($P < 0.05$). **Results:** The postoperative anal exhaust time, first meal time, early activity time, pain time, abdominal drainage tube removal time and hospitalization time in the study group were shorter than those in the control group (all $P < 0.05$). The incidence of complications in the study group was lower than that in the control group ($P < 0.05$). **Conclusion:** The concept of rapid rehabilitation can significantly improve the perioperative nursing effect of patients with extrahepatic bile duct stones and accelerate their rehabilitation, which is worth improving and popularizing.

Keywords

Rapid Rehabilitation Surgical Nursing, Laparoscopy, Extrahepatic Bile Duct Stones

1. Introduction

Extrahepatic bile duct stones are common surgical diseases, and the main treatment is surgery. With the development of medical technology, laparoscopic surgery has been widely used and popularized, and has become the first choice for extrahepatic bile duct stones [1]. Implementing effective nursing measures for patients during perioperative period can bring positive effects to patients' rehabilitation. The concept of rapid surgical rehabilitation (FTS) is a widely used nursing method in clinic in recent years. It was first used in surgery and achieved good nursing effect. Later, it was widely used in clinic, which relieved the psychological and physical stress caused by surgery, significantly reduced the incidence of complications, and finally achieved the purpose of rehabilitation [2]. In order to explore the perioperative nursing effect of FTS in patients with extrahepatic bile duct stones undergoing laparoscopic surgery, this study is reported as follows.

2. Materials and Methods

2.1. General Information

Ninety patients with extrahepatic bile duct stones treated in our hospital from January 2022 to February 2023 were selected as the object of study. Inclusion criteria: preoperative diagnosis of bile duct stones; liver function Child-Pugh grade A; have certain communication skills, understanding ability; no serious cardiopulmonary dysfunction, can tolerate pneumoperitoneum surgery. Exclusion criteria: previous history of hepatobiliary surgery; complicated with malignant tumor or other serious diseases; severe coagulation dysfunction. The patients were randomly divided into study group and control group, in the control group, there were 27 males and 18 females, the average age was (44.53 ± 2.95) years, the average body weight was (64.31 ± 7.29) kg; the average diameter of common bile duct was (11.70 ± 1.93) mm; In the study group, there were 29 males and 16 females, the average age was (44.13 ± 0.19) years, the average body weight was (62.95 ± 7.02) kg; the average diameter of common bile duct was (12.17 ± 1.99) mm. There was no significant difference in sex, age, weight and common bile duct diameter between the two groups ($P > 0.05$), which was comparable, as shown in **Table 1**.

2.2. Nursing Methods

The study group was given rapid surgical rehabilitation nursing, and the control group was given routine nursing, as shown in **Table 2** [2].

Table 1. Comparison of preoperative indexes between two groups of patients.

index	Study group (n = 45)	Control group (n = 45)	*t*	p
Age (y)	44.53 ± 2.95	44.13 ± 0.19	0.67	0.508
Weight (kg)	64.31 ± 7.29	62.95 ± 7.02	0.899	0.371
Common bile duct diameter (mm)	11.70 ± 1.93	12.17 ± 1.99	−1.133	0.261

Table 2. Specific nursing measures for patients in two groups.

Nursing measures	Control group	Study group
Preoperative propaganda and education	Carry on orally. Routine health education	In the form of publicity manuals and educational lectures, this paper introduces in detail the causes of extrahepatic bile duct stones and the related knowledge of laparoscopic bile duct exploration and stone extraction, anesthesia-related complications, surgical necessity, intraoperative and postoperative complications and countermeasures, alternative treatment, eliminate patients' nervousness and increase patients' cooperation.
Preoperative diet	Fasting 8 hours before operation and water fasting 4 hours before operation	Fasting 6 hours before operation and water deprivation 2 hours before operation, but glucose injection warmed by 400 ml can be given 2 - 3 hours before operation.
Preoperative intestinal preparation	Routine intestinal preparation before operation	No need for intestinal preparation and gastrointestinal decompression before operation
Pre-operative training	Routine activities	Before operation, patients were instructed to blow balloons to exercise their lung function, walk in the corridor to exercise their physical fitness, and those who had a history of smoking gave up smoking before operation.
Preoperative catheterization	Place gastric tube and urinary catheter	Irregular placement of gastric tube and urinary catheter before operation
Intraoperative nursing	Routine nursing care, placement of abdominal drainage, routine nursing and warmth of related pipes	On the basis of routine nursing, relatively raise the temperature of the operating room more than 25˚C, use thermal blanket or thermal insulation quilt to keep the patients warm, keep the peritoneal lavage fluid warm, and reduce the amount of fluid replacement during the operation.
Nursing care of postoperative pain relief	Routine indwelling intravenous analgesia pump and adding opioid analgesics if necessary	Postoperative epidural analgesia was given, pain scale was used to evaluate the degree of pain, and morphine analgesia was given if necessary.
Postoperative diet	After exhaust, begin to eat and remove the gastric tube, gradually transition from fluid to general food.	Six hours after operation, chewing gum and a small amount of drinking water were given. On the first day, a light liquid diet began, and on the second day, a semi-fluid diet began, and then gradually returned to a normal diet.
Early postoperative activity	The patient got out of bed voluntarily after 2 - 3 days of operation, and the catheter was removed after getting out of bed.	6 hours after anesthesia, patients are encouraged to exercise in the ground for 2 - 3 times on the first day after operation. The appropriate amount of activity is that the patients do not dare to get tired, and then the daily activity gradually increases.
Pipeline nursing	When the peritoneal fluid is clear and small, the drainage tube is removed, and the patients are informed of the matters needing attention after operation.	Removal of abdominal drainage tube within 48 - 72 hours after operation
Discharged from hospital to preach	Matters needing attention in routine out-of-hospital nursing	Do a good job in propaganda and education on diet, activities, pipes and wounds of discharged patients, use oral, demonstration, paper text and other propaganda and education methods, do a good job in regular follow-up work, and grasp the rehabilitation of patients.

2.3. Observation Indicators

Compare the postoperative anal exhaust time, first meal time, early activity time, pain time, abdominal drainage tube removal time, hospitalization time and complication rate between the two groups.

2.4. Statistical Methods

Using SPSS 21.0 statistical software, the measurement data of normal distribution adopts independent sample T test, and the counting data adopts x^2 test, and the difference is statistically significant ($P < 0.05$).

3. Results

3.1. Comparison of Postoperative Related Functional Rehabilitation and Hospitalization Time between the Two Groups

The postoperative anal exhaust time, first meal time and early activity time of the patients in the study group were significantly earlier than those in the control group, and the difference was statistically significant ($P < 0.05$); The postoperative pain time, abdominal drainage tube removal time and hospitalization time of patients in the study group were significantly shorter than those in the control group, and the differences were statistically significant ($P < 0.05$), as shown in Table 3.

3.2. Comparison of the Incidence of Postoperative Complications between the Two Groups

In the study group, there were 2 cases of incision infection, 2 cases of bleeding, no biliary fistula and cardiac complications, while in the control group, there were 4 cases of incision infection, 6 cases of bleeding, 2 cases of biliary fistula and no cardiac complications. The total incidence of complications in the study group was significantly lower than that in the control group ($P < 0.05$), as shown in Table 4.

Table 3. Comparison of postoperative indexes between the two groups.

index	Study group (n = 45)	Control group (n = 45)	*t*	p
Postoperative anal exhaust time (d)	0.53 ± 0.14	1.41 ± 0.51	−11.07	<0.01
Time of first meal after operation (h)	6.22 ± 0.22	11.76 ± 0.63	−55.53	<0.01
Early postoperative activity time (h)	15.18 ± 2.11	31.31 ± 3.87	−24.54	<0.01
Pain time (d)	4.48 ± 0.76	13.66 ± 1.40	−38.55	<0.01
Pull-out time of abdominal drainage tube (d)	3.08 ± 0.57	4.88 ± 1.27	−8.67	<0.01
Hospitalization time (d)	10.06 ± 2.62	16.87 ± 2.77	−11.96	<0.01

Table 4. Comparison of postoperative complications between the two groups.

group	Number of cases (n)	Infection (n)	Bleeding (n)	Biliaryfistula (n)	Cardiac complications (n)	Total complication rate [n (%)]
Study group	45	2	2	0	0	4
Control group	45	4	6	2	0	12
x^2						4.865
P						0.027

4. Discussion

With the development of laparoscopic technology, laparoscopic surgery has become the first choice for the treatment of extrahepatic bile duct stones with the advantages of less trauma and rapid recovery. However, postoperative incision infection, pain and reduced self-care ability still bring psychological and physical burden to the patients, and also reduce the quality of life of the patients after operation [3]. At this time, effective perioperative nursing is very necessary, which can reduce the degree of stress reaction, reduce the occurrence of postoperative complications and promote the early recovery of patients. As a new nursing model in recent years, the concept of FTS has changed the traditional clinical diagnosis and treatment model, has the advantages of individualization and rationalization, and has been widely used in surgical clinic. Its effect is remarkable and accords with the current nursing concept [4] [5].

In this study, the study group adopted the concept of FTS, actively communicated with patients before operation, improved preoperative preparation, and avoided indwelling gastric tube and catheter as far as possible, so as to reduce the risk of postoperative complications; Intraoperative heat preservation, intravenous infusion heating, operating room temperature above 25˚C, and strict control of intraoperative fluid input; Postoperative close observation, dietary guidance, effective analgesic measures, rehabilitation activities to promote the recovery of patients. The results of the study group showed that the postoperative anal exhaust time, first feeding time, early activity time, pain time and hospital stay were significantly shortened, and postoperative complications such as infection and bleeding were also significantly reduced. It is suggested that FTS can effectively reduce the influence of surgical stress reaction on the body, promote the recovery of body function, reduce the incidence of postoperative complications, and shorten the duration of hospitalization, and FTS can obviously reduce the postoperative pain and improve the nursing comfort, effectively avoid the disadvantages of mechanical and blind nursing measures, minimize the stress reaction caused by various operations in the perioperative period, reduce the body trauma, and achieve the purpose of accelerating the rehabilitation of patients, This is similar to the relevant research results in China [6] [7] [8].

To sum up, the concept of FTS can not only provide high-quality nursing services for patients undergoing laparoscopic extrahepatic bile duct stone surgery, promote patients' early recovery and improve their postoperative quality of life,

but also further promote the development of nursing cause and ensure the effectiveness of nursing quality, which is worth popularizing in clinic.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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