

# Application Research of Perioperative Clinical Pathway Based on Accelerated Rehabilitation Surgery Strategy in Patients with ERCP

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**Abstract: Objective:** To explore the effects of perioperative clinical pathway of accelerated rehabilitation surgery strategy in patients undergoing cholangiopancreatography (ERCP). **Methods:** Randomly selected 40 patients undergoing ERCP from our hospital which is People's Hospital, Jingjiang City, for research, and divided the patients into two groups. The 20 patients who were given conventional education methods were set as the reference group, and the 20 patients who were given perioperative clinical pathway care with accelerated rehabilitation surgery strategies were the research group, where the clinical nursing effect of the two groups was statistically compared. **Results:** According to clinical observation and statistics, the study group's postoperative time to eat for the first time, time to get out of bed, hospitalization time, and surgical blood loss were better than those of the reference group,  $P < 0.05$ ; the anxiety and depression scores of the study group were lower than those after nursing in the reference group,  $P < 0.05$ ; the incidence of complications in the study group was lower than that in the reference group, and patient satisfaction was higher than that in the reference group, where both  $P < 0.05$ . **Conclusion:** The application of perioperative clinical pathway care based on the strategy of accelerated rehabilitation surgery can achieve significant results in ERCP patients, which can effectively improve the surgical indicators of patients and reduce the risk of complications.

**Keywords:** Accelerated rehabilitation surgery; Perioperative period; Clinical path; Cholangiopancreatography; Nursing effect

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## 1. Introduction

Common bile duct stones are a common disease in the clinic, which will cause great harm to the patient's body. Once the patient is diagnosed by examination, he must receive treatment as soon as possible to remove the stones in time to ensure that the common bile duct is unblocked. The current clinical treatment is mainly through surgical methods. Among them, laparoscopy and endoscopy are two commonly used minimally invasive procedures. In recent years, clinical studies have found that endoscopic retrograde cholangiopancreatography (ERCP) treatment can play an important role. Although the operation is a minimally invasive operation; it will inevitably cause certain damage to the patient. The patient may have anxiety and other emotions before the operation. These will affect the operation and the efficacy of the operation. Therefore, to ensure that the operation can be carried out smoothly, it is extremely important to adopt reasonable nursing interventions for the rapid recovery of patients after surgery<sup>[1-2]</sup>. Perioperative clinical pathway nursing in accelerated rehabilitation surgery is a new type of nursing method currently used before and after surgery, which can provide patients with high-quality nursing services and help patients recover quickly. Based on this, the research explores the nursing effect of clinical pathways during the perioperative period of accelerated rehabilitation surgery.

## 2. Materials and Methods

### 2.1. Basic information

In this study, 40 patients who underwent cholangiopancreatography (ERCP) in our hospital were randomly selected from January 2020 to January 2021.

#### 2.1.1. The inclusion criteria:

- (1) Confirmed as common bile duct stones by imaging.
- (2) All patients were elective surgery patients.
- (3) Cardiopulmonary function was normal, and there were no surgical contraindications for tolerable surgery.
- (4) Participated in this study with informed consent.

#### 2.1.2. Exclusion criteria:

- (1) Patients with speech communication disorders and mental illness.
- (2) Patients with malignant tumors and severe organ diseases.
- (3) Recently received rigid gastrointestinal function drugs.
- (4) Patients who need to change the surgical method clinically and are unwilling to undergo ERCP in the middle.

A completely randomized design was used to group patients that meet the inclusion criteria, and the fifth edition of "Health Statistics" appendix-random number table was used for randomization. First, the study needs to be given an object number, where the last digit is the odd number patient into the study group. Patients with even number in the last digit were included in the reference group, each with 20 cases. There were 11 male patients in the reference group and 9 female patients. The youngest was 46 years old, the oldest was 70 years old, and the average age was  $(55.67 \pm 2.54)$  years old. Body mass index  $(23.14 \pm 2.58)$  kg/m<sup>2</sup>, diameter of common bile duct  $(12.11 \pm 2.15)$  mm; study group 10 male patients, 10 female patients, the youngest was 47 years old, the oldest was 69 years old, the average age was  $(55.79 \pm 2.61)$  years old, the patient's body mass index  $(23.25 \pm 2.45)$  kg/m<sup>2</sup>, and the diameter of the common bile duct  $(12.24 \pm 2.21)$  mm; comparing the two groups of patients with basic data such as age, body mass index, and common bile duct diameter, there was no statistical difference ( $P > 0.05$ ).

### 2.2. Method

The reference group mainly used conventional publicity and education methods to intervene. After the patients were admitted to the hospital, they carried out health knowledge education, and instructed the patients to fast before the operation and prepare for various operations. The study group applied common bile duct stones ERAS clinical care pathway intervention on the basis of the reference group:

- (1) After admission, patients were introduced to the hospital, including wristband wearing, safety guidance, etc., using the falling Braden and self-care ability scores for the patient's general condition and combination. At the same time, on the first day of hospitalization, nursing staff need to carry out health knowledge education, medication guidance, activity guidance, treatment and nursing, also psychological counseling and other aspects of intervention <sup>[3]</sup>.
- (2) On the second day of hospitalization, which was the day of preparation before the operation, the nursing staff needed to intervene the two-way venous intervention needle. The clear liquid was orally administrated 6-8h before the operation, and the intravenous drip of 5% GS500ml 2h before the operation. At the same time, the bed needs to be placed before the operation. The method of urination and defecation, deep breathing, and the use of turning pillows are given to the patients, and the relevant knowledge of the operation was explained; the preoperative guidance helps the patients to bathe and change clothes, then removed the dentures and body accessories, and prepared related items such as throat lozenges and chewing gum.

- (3) During the operation, the nursing home must help the patient adopt the correct posture, provide insulation blankets to keep warm, and closely cooperate with the doctor to complete various operations; during the process, it was necessary to pay close attention to the patient's vital signs and provide timely feedback in case of abnormalities.
- (4) For post-operative care, transferred the patients back to the ward safely after the operation, paid attention to the patient's vital signs, and provided timely post-operative pain care, dietary guidance, medication guidance, and nutritional support. In addition, the nursing staff also needed to strengthen the patient's pipeline care, closely observed the patient's complications, and provided preventive and safe care.

### 2.3. Observation indicators

Observed the surgical treatment indicators of the two groups of patients after nursing, mainly including operation time, surgical bleeding, time to get out of bed for the first time and eating, hospitalization time, etc. At the same time, observed the occurrence of post-operative complications such as abdominal distension, acute pancreatitis and gastrointestinal bleeding.

According to the Hamilton Anxiety Rating Scale (HAMA) and Hamilton Depression Rating Scale (HAMD), the patient's psychological emotions were evaluated. The score scale has a total of 100 points and was divided into 50 points. The higher the score, the higher the patient's anxiety and depression, the more serious the mood. Used our hospital's self-made satisfaction questionnaire and distributed it to the patients for evaluation, and calculated the satisfaction of the two groups of patients with treatment and care. The satisfaction questionnaire was divided into three levels, with a total of 100 points. If the evaluation score exceeded 90 points, it was very satisfied, if the evaluation score was within 70-90 points, it is basically satisfied, and if the evaluation score does not exceed 70 points, it is dissatisfied, total satisfaction = (very satisfied + basically satisfied) / total number of cases × 100% [4].

### 2.4. Statistical analysis

The data was mainly processed and analyzed by SPSS23.0 software, and  $X^2$  is used for testing, and expressed as (n / %). If the processing analysis result  $P < 0.05$ , it can indicate that the statistical data is different.

## 3. Results

### 3.1. Surgical indicators

As shown in the data statistics in **Table 1.**, there was no significant difference in the operation time between the two groups of patients,  $P > 0.05$ ; while the study group was shorter than the reference group in terms of the first out of bed, eating time, and hospital stay, and the operation blood loss of the study group was lower than the reference group,  $P < 0.05$ .

### 3.2. Psychological emotions

After the statistical evaluation of the scoring scale, as shown in **Table 2.**, there was no significant difference in the anxiety and depression scores of the two groups of patients before nursing,  $P > 0.05$ ; after nursing, the scores of the two groups of patients were significantly reduced, compared with the anxiety and depression scores of the study group All were lower than the reference group,  $P < 0.05$ .

### 3.3. Complications

Postoperative observation and statistics found that the incidence of complications in the study group was

lower than that in the reference group,  $P < 0.05$ , shown in **Table 3**.

### 3.4. Patient satisfaction

According to the statistics of questionnaire survey, the satisfaction of patients in the study group was higher than that of the reference group,  $P < 0.05$ , shown in **Table 4**.

**Table 1.** Statistical surgical indicators ( $\bar{x} \pm s$ )

Group	Time of operation (min)	Perioperative bleeding (ml)	Out of bed time (h)	The meal time (d)	Hospital stays (d)
Reference group (n=20)	219.58 $\pm$ 34.57	211.25 $\pm$ 24.37	13.41 $\pm$ 3.58	12.74 $\pm$ 2.95	12.62 $\pm$ 6.54
Research group (n=20)	217.46 $\pm$ 33.74	193.25 $\pm$ 21.58	9.04 $\pm$ 2.85	6.17 $\pm$ 2.03	9.45 $\pm$ 5.17
t	0.1963	2.4730	4.2709	8.2050	2.2211
P	0.8454	0.0180	0.0001	0.0000	0.0324

**Table 2.** Statistical evaluation of the anxiety and depression scores of the two groups of patients ( $\bar{x} \pm s$ )

Group	n (example)	Anxiety score		Depression score	
		Before care	After care	Before care	After care
Reference group	20	51.24 $\pm$ 3.64	38.15 $\pm$ 2.55	51.17 $\pm$ 3.92	37.54 $\pm$ 2.49
Research group	20	51.37 $\pm$ 3.58	31.24 $\pm$ 2.03	51.28 $\pm$ 3.51	32.05 $\pm$ 2.13
t		0.1139	9.4812	0.0935	7.4928
P		0.9099	0.0000	0.9260	0.0000

**Table 3.** Statistics of complication rate (n / %)

Group	n (example)	Ventosity	Acute islet inflammation	Alimentary tract hemorrhage	Occurrence rate
Reference group	20	4	1	1	30.00
Research group	20	1	0	0	5.00
X <sup>2</sup>					4.3290
P					0.0374

**Table 4.** Statistics of patient care satisfaction (n / %)

Group	n (example)	Special satisfaction	Basically satisfied	Dissatisfied	Total satisfaction
Reference group	20	7	8	5	75.00
Research group	20	9	11	0	100.00
X <sup>2</sup>					5.7143
P					0.0168

#### 4. Discussion

ERCP is an effective surgical method commonly used in the treatment of common bile duct stones. The operation has the characteristics of small trauma and high curative effect. In order to ensure that the patient's surgical effect is improved and the patient can recover quickly after the operation, timely intervention of perioperative nursing measures is given to the patient to play a significant role [5]. Perioperative care mainly includes preoperative preparation, intraoperative care, and postoperative monitoring. Through comprehensive and meticulous care, the prognosis of patients can be improved and recovery can be accelerated.

The clinical pathway intervention during the perioperative period of accelerated rehabilitation surgical nursing is an advanced nursing method in the current clinical practice. During the nursing process, preoperative preparation and psychological counseling can effectively improve the patient's psychological mood and reduce the surgical stress response. At the same time, nursing care carry out various nursing care centered on patients. Through advanced individualized analgesia care, cooperation with doctors and post-operative complications care, etc., try to meet the clinical care needs of patients as much as possible. It builds a rapid rehabilitation pathway, and help patients on the basis of improving the efficacy of patients' operations, resulting in a quick recovery after operation [6-7]. In the results of this study, the surgical indicators of the study group were better than those of the reference group, and the anxiety score and depression score were lower than the reference group. The incidence of complications was significantly

lower, and patient satisfaction was higher than that of the reference group. The comparison between groups was statistically significant.

In summary, the application of perioperative clinical pathway care based on accelerated rehabilitation surgery strategies in ERCP patients can effectively improve surgical indicators and reduce the risk of complications

### **Disclosure statement**

The author declares no conflict of interest.

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