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Rapid Rehabilitation Surgical Nursing Model in Perioperative Period of Laparoscopic Liver Cancer Resection

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Abstract: For patients with liver disease undergoing laparoscopic hepatectomy due to long-term pain and surgical trauma, most patients have great psychological pressure and stress response during treatment, which seriously affects the operation effect and postoperative recovery. Based on the above background, the purpose of this study is to explore the application of fast track surgical nursing mode in perioperative period of laparoscopic liver cancer resection. In this study, 80 patients with hepatocellular carcinoma were randomly divided into two groups, the experimental group and the control group. There were 40 cases in the experimental group and 40 cases in the control group. The control group adopted the traditional weekly nursing management mode for nursing, and the experimental group adopted the intervention measures of rapid rehabilitation surgery nursing concept. The operation time, neck drainage volume, CPR concentration, pain score, restlessness score, patient satisfaction, hospitalization expenses and length of stay were compared between the two groups. The data were processed by SPPs 19.0 software. Independent sample t-test was used for measurement data, $P<0.05$, with statistical significance. The experimental results show that although the effect of rapid rehabilitation surgery nursing concept intervention cannot affect the operation time and postoperative drainage volume, it can reduce the postoperative pain of patients, reduce the anxiety of patients, improve the satisfaction of patients, shorten the length of hospital stay, reduce the cost of hospitalization.

1. Introduction

Surgical resection (SR) has been recommended as the first-line treatment for small hepatocellular carcinoma. Traditional open hepatectomy is traumatic and bleeding, which is easy to lead to higher complications and operative mortality. With the improvement of laparoscopic technology, the technical bottlenecks break through one by one. Research reports show that the short-term effect of laparoscopic surgery is better than that of open surgery, and the long-term effect is equal to open surgery. With the development of science and the progress of medical technology, a

new biological social psychological medical model has been formed. Of course, the purpose of carrying out this kind of mode is not only to make the operation successful, eliminate the disease and recover the health, but also to minimize the trauma of patients and make them recover quickly. However, with the change of people's health concept and the enhancement of service consciousness, patients not only need to cure the disease, but also require high-quality service and rapid rehabilitation. In this context, rapid rehabilitation surgery was born. The meaning of fast track surgery refers to the cooperation of surgeons, anesthesiologists, nursing staff and other skilled personnel to adopt scientific and effective methods in the operation process to reduce the level of patients' stress reaction, prevent the operation from bringing too much trauma to the patients, so that the patients can quickly recover to health and improve the effect of disease treatment under the high-quality nursing service.

Complications after major surgery are the main causes of incidence rate and mortality. The etiology of postoperative complications is complex, but insufficient cardiopulmonary reserve is a key factor. More and more attention has been paid to the use of central venous oxygen saturation and mixed venous oxygen saturation to guide treatment intervention in perioperative period. However, a detailed understanding of the physiological principles of venous oxygen saturation is essential for safe and effective clinical use. Venous oxygen saturation reflects the balance between systemic oxygen supply and oxygen consumption, which may be affected by many factors during perioperative period. Li aims to describe the physiology and measurement of mixed venous and central venous oxygen saturation, and to explore the clinical investigation results of its application in perioperative nursing [1]. Alyssa discussed the importance of measurement of central and mixed venous oxygen saturation in the management of postoperative complications. Alyssa reviewed the physiology, determinants and methods of measuring oxygen saturation of mixed and central venous blood, including pichian catheter, blood sampling and oxygen measurement. According to research, the decrease of oxygen saturation of mixed vein and central vein can lead to various perioperative complications, including sepsis, trauma and heart failure. In addition, it also provides information on different operations for mixed venous and central venous oxygen saturation in postoperative care [2].

Objective to explore the effect of perioperative nursing in the clinical application of fast track surgery concept in laparoscopic cholecystectomy. Herbsman selected 60 cases of laparoscopic cholecystectomy patients, according to the clinical nursing methods, the patients were divided into observation group and control group, 30 cases in each group. The control group was given routine nursing care during the clinical perioperative period of laparoscopic cholecystectomy, while the observation group was given rapid rehabilitation nursing mode under the guidance of nursing concept in the clinical perioperative period of laparoscopic cholecystectomy. The clinical nursing effects of the two groups were compared. The clinical nursing effect of the observation group was significantly better than that of the control group. The results showed that the clinical application effect of fast track surgery concept in perioperative nursing of laparoscopic cholecystectomy was significant, which could more effectively promote the postoperative rehabilitation of clinical patients, reduce the incidence of postoperative pain, and reduce postoperative complications, which is worthy of further promotion and research [3]. The introduction of laparoscopic surgery has reduced the length of hospital stay from 8-10 days to 4-6 days. However, in gokeler's study, no special attention has been paid to the changes of perioperative protocol in order to maximize the advantages of minimally invasive surgery. In gokeler study, laparoscopic surgery was combined with multimodal perioperative rehabilitation program. After laparoscopic colectomy, epidural anesthesia was used for 2 days, early mobilization and enteral nutrition. Avoid routine use of morphine and traditional catheters, drainage tubes and long-term bladder catheterization. The combination of laparoscopic technique and multimodal rehabilitation programs such as pain relief,

early activity and oral nutrition can significantly improve the recovery rate after colon surgery [4].

In this study, the concept of surgical intervention rapid repair was applied to the treatment of laparoscopic liver cancer patients. Drug therapy has been proved to be an effective management method for perioperative management of abdominal surgery. A series of optimization measures for rapid recovery of liver necrosis are proposed based on the concept of combination and optimization combined with the unique anatomical structure and normal function of liver surgery. Compared with the traditional treatment, the effectiveness and safety of rapid recovery of liver surgery were discussed.

2. Laparoscopic Liver Cancer Resection

Laparoscopic minimally invasive technology is developing rapidly in the medical field with the advantages of less trauma, less pain and faster recovery. Laparoscopic cholecystectomy, splenectomy, adrenalectomy and appendectomy as the sign of minimally invasive surgery is becoming a routine treatment. It also includes laparoscopic hepatectomy (LH). From the beginning of the treatment of benign liver diseases, gradually developed to the resection of liver malignant tumors.

2.1 Indications and Contraindications of Laparoscopic Liver Cancer Resection

Surgical resection is one of the most effective methods for the treatment of liver cancer. LH can be used in the treatment of primary or metastatic liver cancer. LH is mainly limited by the size and number of lesions and the preoperative liver function reserve. Therefore, it is very important to choose the cases of LH[5].

The indications of LH are as follows: 1) the location of the lesion in the liver Ⅱ, Ⅲ, Ⅳa, Ⅴ, Ⅵ is relatively shallow, and there is a certain distance from the inferior vena cava and the large vessels and bile ducts outside the lesion, especially the marginal liver lesions located in the left lateral lobe and right anterior segment of the liver are the best indications; 2) the tumor volume should not be too large, and the benign tumor should be less than 15cm and the malignant tumor should be less than 10cm; 3) If the liver function is above child grade B, there is no heart, lung, brain and other important organ diseases, and the remnant liver can compensate the physiological needs; 4) it is better to have no operation history of liver and gallbladder diseases[6-7].

Contraindications for LH include: 1) the tumor is located relatively backward and too deep, adjacent to some important hepatic vessels, such as invading the inferior vena cava or the root of hepatic vein, which is easy to cause uncontrollable bleeding; 2) the tumor is too large, which makes it difficult to expose the first and second porta hepatis and free the liver; 3) Liver cancer invading surrounding organs, extrahepatic metastasis, portal vein tumor thrombus, portal lymph node metastasis or unclear tumor boundary; 4) child C grade of liver function, or other important organ dysfunction; 5) history of upper abdominal surgery and severe intra-abdominal adhesion[8].

2.2 Surgical Methods and Technical Points of LH

According to the location and extent of tumor resection, laparoscopic hepatectomy can be divided into laparoscopic local hepatectomy or wedge-shaped hepatectomy, segmental hepatectomy, lobectomy, hemihepatectomy and extended hemihepatectomy.

(1) Patient position and instrument placement

Generally adopt supine position, keep head high and foot low. The pneumoperitoneum pressure of CO2 in abdominal cavity should be maintained at 12-14MMHG to avoid large fluctuation of pneumoperitoneum pressure. Whether the lower limbs need to be separated or not can be

determined according to the patient's body shape and the surgeon's habits. According to the location and size of the tumor, the location of the operation hole should be selected flexibly. The 4-hole method or 5-hole method should be adopted for hepatectomy, and 3-hole method can be used for some small lesions located on the superficial liver. In general, the operation of the two holes should be equal to that of the main and auxiliary holes. If the tumor is located in the left liver, the main operating hole should be under the costal margin of the left clavicle line; if the tumor is located in the right liver, the main operating hole should be selected under the xiphoid process. The key of hole arrangement is to grasp the operation position of ultrasonic scalpel and linear cutter, so that the operation direction is consistent with the proposed liver pre tangent direction, so that the application of instruments from hole operation will be more convenient. The specific position can be adjusted according to the lesion location and the patient's body shape [9].

(2) Liver dissociation and disconnection

From the observation hole into the lens, first, carefully explore the abdominal organs to determine whether there is extrahepatic metastasis, whether liver cirrhosis and ascites exist in the liver, observe the location, size and number of tumors, and then explore whether there are enlarged lymph nodes in the hepatic hilum. The tumor was fixed with forceps, and the ligaments of teres hepatis, falciform ligament, triangular ligament and lesser omentum were treated with ultrasonic scalpel according to the situation, and the liver lobe was fully free. Combined with the results of exploration, the appropriate surgical plan was made [10-11].

Laparoscopic hepatectomy must use a variety of liver cutting instruments, each of which has its advantages and disadvantages. To judge whether a liver cutting instrument is good or not depends on whether it has the functions of cutting, separating, hemostasis and attraction. At present, there are many kinds of hepatectomy instruments, such as argon beam coagulator (ABC), microwaveco agulator, water jet cutter, ultrasonic scalpel, Endo-GIA, PMOD and LigaSure vessel sealing system. The above technologies and instruments have their own advantages and disadvantages. It can be selected according to the actual situation of the hospital and the proficiency of the operator. At present, ultrasonic scalpel is widely used [12].

First of all, unipolar electrocoagulation was used to mark the pre tangent line, and the distance between the cutting edge and the tumor was at least 1cm. Then, the liver capsule and superficial liver parenchyma were incised with ultrasonic scalpel, and the liver tissue was separated passively, and the liver parenchyma was gradually cut off from the front to the back and from the shallow to the deep. There are no large vessels in the liver parenchyma within 1cm of the surface of the liver. However, it is necessary to be careful after cutting to the deep part of liver parenchyma. The vessels less than 3 mm in diameter can be coagulated and severed directly by ultrasonic scalpel. For the intrahepatic ducts larger than 3 mm, titanium clips or biological clips should be used for safety. It is recommended to use a cutting occluder when large vessels and pedicles are encountered during liver resection. When using the cutter closure device, the operator must ensure that the large blood vessels in the liver tissue are completely cut off. If there is still active bleeding, the liver wound should be washed with distilled water, and the bleeding position should be carefully searched. Titanium clip, biological clip or silk thread can be used for ligation and closure. Finally, hemostatic materials should be applied to cover the liver wound surface. Seal the liver specimen with disposable specimen bag, expand the puncture hole to take out the specimen bag. If the specimen is too large, open a small incision to take it out. The specimen was cut to confirm whether the tumor was complete and whether the resection range could reach the radical resection standard. The abdominal cavity was washed with a large amount of distilled water, and rubber drainage tubes were placed in the liver section and vena cava.

(3) Intraoperative precautions

The purpose of malignant tumor surgery is to remove the tumor, reduce the recurrence of tumor

and prolong the survival time of patients. The principle of non-contact technique, radical resection of R0 and negative margin of more than 1cm should be followed in the treatment of HCC. In order to avoid tumor spreading, we should pay attention to the following: 1) operate gently, avoid direct contact with or squeeze the tumor, and maintain the integrity of the tumor. If the tumor tissue is broken during the operation, it will not only fail to achieve the purpose of radical operation, but also easily lead to the metastasis and diffusion of tumor cells. If the tumor exposure is really difficult, it is not easy to turn over, and if the operation is forced, it is easy to rupture the tumor, so we should switch to open surgery. 2) In the process of liver resection, it should be ensured that the tangent line of liver should be kept more than 1 cm from the edge of tumor. In this way, on the one hand, it can avoid the damage to the tumor body during the resection process, on the other hand, it can ensure that there is no tumor cell infiltration in the liver resection margin. If the position is too deep and backward, intraoperative B-ultrasound can be used. 3) Be sure to remove trocar casing when relieving pneumoperitoneum pressure. 4) Seal the liver specimen with disposable specimen bag, expand the puncture hole to take out the specimen bag. If the specimen is too large, open a small incision to take it out according to the situation, so as to avoid the tumor and other organs of the abdominal cavity and the incision directly, which will also greatly reduce the spread of the tumor.

2.3 Fast Track Surgery Nursing

Fast track surgery (FTS), which is based on the principle of reducing perioperative stress response, adopts a series of optimization measures of perioperative management with evidence-based medical evidence, so as to reduce the physiological and psychological trauma stress of surgical patients and realize the rapid recovery of surgical patients.

(1) Preoperative education: harmonious doctor-patient relationship and good communication is very important, which is the key to the successful implementation of FTS. Adequate preoperative education is conducive to stabilizing the patient's mood, accepting surgery with the best mentality, and promoting the early recovery of patients after operation. FTS requires medical staff and anesthesiologists to educate patients before operation, because in FTS, some perioperative treatment measures may be very different from the traditional methods, such as oral carbohydrate 2 hours before operation, no routine bowel preparation, and discharge time may be advanced. All of these should be introduced to patients and their families in detail and cooperated, so that patients can understand the operation mode Guide the patient how to prepare and cooperate.

(2) Optimization of the patient's physical condition: the optimization of the patient's physical condition should be carried out immediately after admission education, and aerobic exercise should be carried out at the same time. Exercise can not only enhance the cardiopulmonary function, relieve the tension of patients, but also enhance the tolerance and confidence of surgery, and reduce the stress reaction of surgery

(3) Preoperative fasting and preoperative oral carbohydrate and nutritional support: at present, it is believed that premature fasting and water deprivation can easily lead to hypoglycemia, and increase the amount of intraoperative and postoperative rehydration and aggravate stress. Studies have shown that intravenous or oral glucose supplementation before surgery can reduce the insulin resistance caused by surgical trauma, which is conducive to reduce the adverse emotions caused by preoperative hunger, so as to better face the surgical trauma stress, but it does not increase the risk of reflux and aspiration. If the patient has severe malnutrition before operation, oral nutrition supplement or enteral nutrition are necessary

(4) Temperature control: during the operation, due to the body exposure and the use of anesthetics and the input of cold liquid, the patient is in a hypothermia state. Hypothermia can lead to complications such as coagulation disorders, wound healing time extension and increased

infection, and hypothermia will increase the burden of cardiovascular system in the process of rewarming. Therefore, the room temperature should be controlled at about 24℃ and the patient's temperature should be controlled at 36 ℃. Besides the operation site, the patients should be kept warm and heated to input liquid, so as to reduce the bleeding volume and infection rate of the wound and accelerate the recovery of the patients after operation.

(5) Postoperative analgesia: full and effective analgesia is the core link of FTS implementation, which is conducive to early postoperative activities and early eating. Selective use of multimodal analgesic measures instead of opioid analgesics can reduce the incidence of pain, nausea, vomiting and abdominal distension.

(6) Prevention of postoperative nausea, vomiting and intestinal obstruction: early recovery of normal oral diet is an important link in the perioperative measures of FTS. In order to achieve this goal, it is necessary to prevent and control postoperative nausea, vomiting and postoperative intestinal obstruction. The risk factors of postoperative nausea and vomiting included smoking, female patients, history of postoperative nausea and vomiting, and postoperative use of opioids. For high-risk patients with two risk factors, multimodal approach is recommended to prevent postoperative nausea and vomiting. For example, propofol and remifentanil should be used during the operation, inhalation anesthesia should be prohibited, and dexamethasone or droperidol should be added at the beginning of the operation, or metoclopramide should be used 30 minutes before the end of the operation. Early postoperative activities, application of metoclopramide and early removal of nasogastric tube can reduce postoperative nausea and vomiting. It is beneficial to reduce the incidence of postoperative nausea and vomiting by not using opioid analgesics as much as possible. It is more effective to control postoperative nausea and vomiting by multiple ways according to the history, operation mode and anesthesia mode of patients undergoing abdominal surgery. Postoperative enteroparalysis is still an important factor leading to delayed recovery, and can lead to postoperative discomfort, abdominal distension and abdominal pain.

(7) System evaluation: the implementation of FTS is inseparable from the collaborative development of multiple disciplines, encouraging patients to participate actively, giving full play to their initiative and cooperation and interaction between doctors and patients. For patients with standard FTS, systematic evaluation of FTS after operation is the basis of implementing FTS. It can improve the compliance and clinical efficacy of patients.

3. Experimental Design of Nursing in Rapid Rehabilitation Surgery

3.1 Experimental Data Acquisition

Methods: a total of 80 patients with primary liver cancer who underwent laparoscopic primary liver cancer resection in the Department of hepatobiliary surgery of the First Affiliated Hospital of a medical university from January 1, 2018 to June 30, 2019 were collected. All patients met the following inclusion and exclusion criteria. Inclusion criteria: (1) all the patients were over 18 years old and less than 65 years old. (2) Primary liver cancer was confirmed by pathology. (3) Liver function Child B or above. Exclusion criteria: (1) there were severe complications, organ failure and death. (2) Combined organ resection was performed. (3) Distant metastasis was found.

3.2 Laparoscopic Liver Cancer Resection

Laparoscopic hepatectomy was performed under general anesthesia. The CO2 pneumoperitoneum pressure was maintained at 12 ~ 14mmHg. Drainage and catheterization were performed at the end of the operation.

3.3 Grouping of Perioperative Nursing Mode

According to the different perioperative nursing mode, the patients were divided into control group (routine nursing mode) and observation group (rapid surgical rehabilitation nursing mode) with 40 cases. Patients were fully informed in advance and agreed by patients. In the observation group, there were 33 males and 7 females with an age of (55.16 ± 8.40) years old. There were 31 child a patients, 9 Child B patients and 27 HBV infection patients. In the control group, 34 cases were male and 6 cases were female; the age was (54.33 ± 7.86) years old. There were 34 cases of child a, 6 cases of Child B grade and 25 cases of hepatitis B virus infection. The two groups were comparable in age, gender, preoperative liver function child classification, hepatitis B virus history and other aspects (P > 0.05).

3.4 Nursing Methods

Routine nursing mode: preoperative general education; preoperative skin preparation, skin test, routine intestinal preparation, fasting 12 hours before operation, 6 hours of fasting; ordering postoperative bed turning and appropriate body activities, after anal exhaust or defecation, oral feeding, gradually transiting from a small amount of full flow diet to normal diet; routine nursing guidance after discharge.

Nursing mode of fast track surgery: FTS measures were given on the basis of routine nursing mode: (1) psychological intervention was given before operation to relieve anxiety and depression; patients were instructed to take 300-400ml 10% glucose orally or 250ml 10% glucose or 5% glucose saline by intravenous injection 2 hours before operation; (2) the operating room temperature was maintained at 20-25 ℃ and warm liquid was infused to flush abdominal cavity with warm water; (3) After the operation, the patients' psychological state was evaluated and psychological counseling was carried out in time; appropriate analgesic treatment was given after operation, and the pain relief was carried out according to the three-step method of cancer pain. If the patients have gastrointestinal reaction after operation, they should be given symptomatic treatment such as protecting stomach and stopping vomiting. Six hours after anesthesia, the patients were assisted to take lateral and semi recumbent positions, and their positions were changed every 2 hours. Patients were instructed to get out of bed as soon as possible after operation.

3.5 Evaluation Index

The patients were discharged from the bed for the first time, and the length of stay after the operation. The postoperative complications, including gastrointestinal reactions (nausea, vomiting, abdominal distension, defecation difficulty), bile leakage and pulmonary infection were counted.

3.6 Statistical Analysis

Spss19.0 was used for data analysis. The measurement data was expressed as ($\bar{x}$ ± s). Independent sample t test was used. P<0.05 was regarded as statistically significant.

$$\bar{x} = \frac{\sum x}{n} \tag{1}$$

Chi square test was used to compare the rate between the two groups, P < 0.05 was considered as statistically significant.

4. Analysis on The Application of Nursing Mode of Rapid Rehabilitation Surgery

4.1 Perioperative Results

There was no death in both groups during hospitalization, and the mortality rate was 0%. The incidence of postoperative complications in LH group was more frequent than that in RFA group (29/40 and 6/40, P<0.05). The adverse reactions in LH group were as follows: hepatic insufficiency (1 case), gastrointestinal insufficiency (1 case), refractory ascites and peritoneal drainage (1 case), hepatic Encapsulated Effusion (2 cases), pleural effusion (11 cases), pleural effusion (1 case), bile leakage (1 case), postoperative bleeding (2 cases), pulmonary infection (3 cases), electrolyte disturbance (1 case), acute heart failure (1 case) In group LH, one patient refused to be randomized into groups and underwent RFA. Pulmonary infection, postoperative bleeding, hypoproteinemia and acute heart failure occurred after RFA. After conservative treatment, 2 patients in LH group were treated with blood transfusion and hemostatic drugs without reoperation. The adverse events in RFA group were: Intractable hypotension (1 case), pleural effusion (3 cases), postoperative atelectasis (1 case), lung injury (2 cases), hepatorenal syndrome (1 case), digestive tract perforation (1 case). In RFA group, 1 patient refused to be randomized into groups and underwent LH operation. Pleural effusion and atelectasis occurred after conservative treatment. In RFA group, 1 patient developed digestive tract perforation and lung injury they were cured after conservative treatment. The advantages of radiofrequency ablation (RFA) in perioperative data (operation time, intraoperative blood loss, intraoperative blood transfusion, postoperative total parenteral nutrition, and hospital stay) are still prominent, as shown in Figure 1.

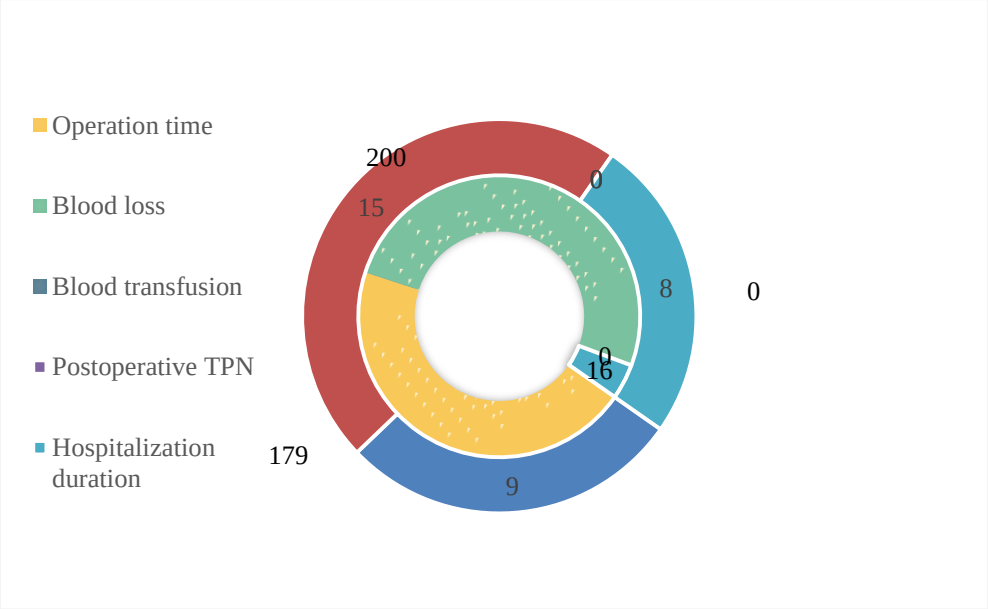

Figure 1: Perioperative data comparison between LH group and RFA group

4.2 Comparison of Perioperative Pain Scores between the Two Groups

The results of spssl9.0 software showed that the overall distribution of pain scores in the two groups did not conform to normal distribution, and the variance was uneven. Therefore, rank sum test was used to compare the pain scores in this study. According to statistics, after using FTS nursing mode, the pain scores of patients in the experimental group were significantly lower than those in the control group at 24 hours after admission, 24 hours, 48 hours and 72 hours after operation, all P values were < 0.05, and the differences were statistically significant. The specific data are shown in Table 1 and Figure 2.

Table 1: Comparison of pain scores between the two groups

Group	Number of cases	Admission 24h	24h after operation	48h after operation	72h after operation
Test group	40	2.26±1.14	2.28±1.09	1.56±1.12	0.67±0.62
Control group	40	5.14±1.45	5.78±1.32	3.72±1.58	2.43±1.30
Z		-5.577	-6.244	-4.628	-4.934
P value		0.000	0.000	0.000	0.000

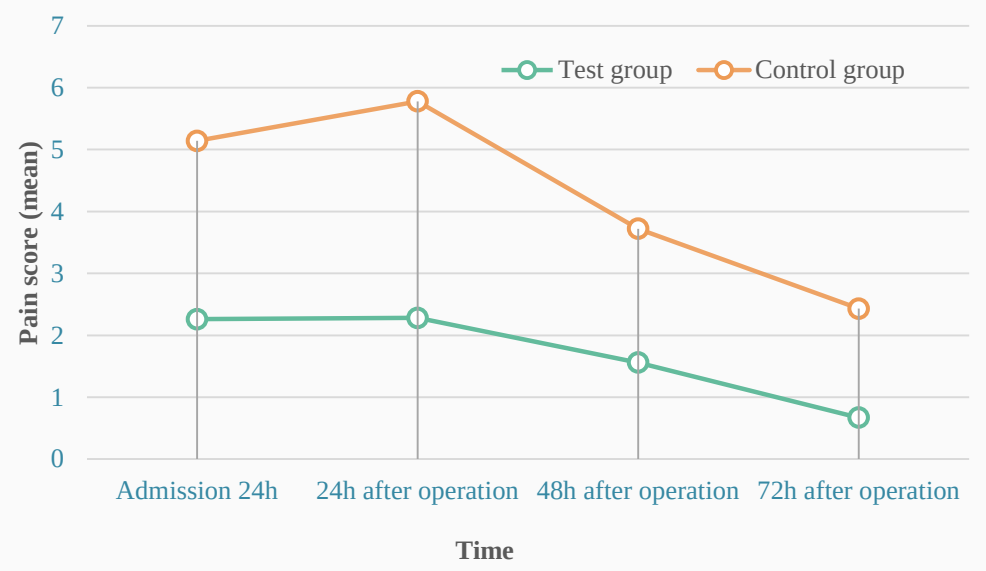

Figure 2: Comparison of pain scores between two patients

4.3 Postoperative Complications

In the fast track group, there were 20 cases of postoperative abdominal distension, accounting for 50% (20/40); 1 case of abdominal bleeding, accounting for 2.5% (1/40); 10 cases of pleural effusion, accounting for 25% (10/40); 6 cases of bile leakage, accounting for 15% (6/40); 0 case of pulmonary infection, 7 cases of postoperative fat liquefaction, accounting for 17.5% (7/40). In the control group, there were 10 cases of abdominal distension, accounting for 25% (10 / 40), 0 case of abdominal bleeding, 13 cases of pleural effusion, accounting for 32.5% (13/40); 9 cases of bile leakage, accounting for 22.5% (9/40); 2 cases of pulmonary infection, accounting for 5% (2/40); There were 9 cases of fat liquefaction, accounting for 22.5% (9/40). The complications were classified according to Dindo Clavien classification. There was no significant difference in the overall incidence of postoperative complications between the two groups (P>0.05). The specific data are shown in Table 2 and Figure 3.

Table 2: Comparison of postoperative complications in 2 groups of HCC patients

Group	Number of cases	Bloating	Abdominal bleeding	Pleural effusion	Bile leakage	Lung infection	Fat liquefaction
Group ERAS	40	20	1	10	6	0	7
Control group	40	20	0	13	9	2	9
X2		3.801	*	0.432	0.639	*	0.268
P		0.051	*	0.51	0.424	*	0.605

Note: * means that chi square test has not been conducted; HCC: hepatocellular carcinoma

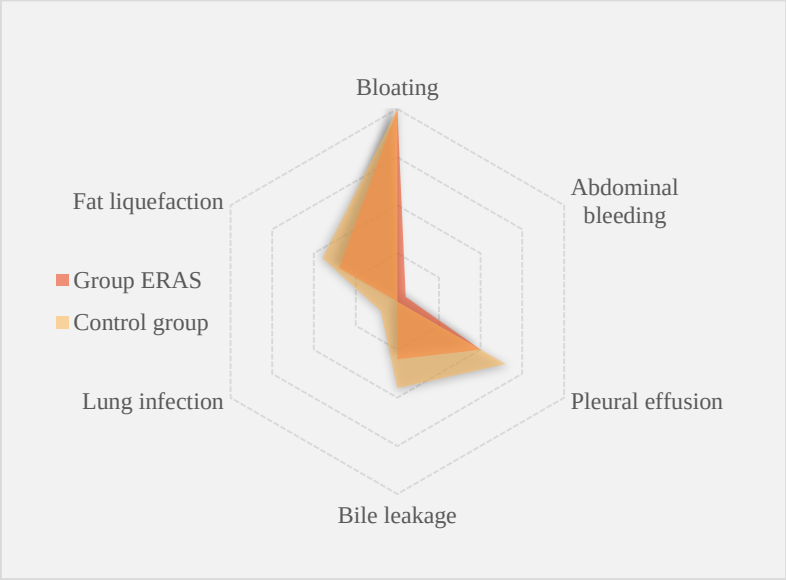

Figure 3: Comparison of postoperative complications in 2 groups of HCC patients

4.4 General Condition after Operation

The anal exhaust time and defecation time in the fast track group were (40.5±9.4) H and (77.5±13.2) h respectively, while those in the control group were (50.8±8.4) D and (96.2±8.6) h, respectively. There was significant difference between the two groups (t=-8.980, -13.095, P=0.000, 0.000). The postoperative ambulation time of the fast track group was (4.0±1.1) d, and that of the control group was (4.9±1.0) d, the difference was statistically significant (t=-6.812, P=0.000). The length of stay and the cost of hospitalization in the rapid rehabilitation group were (12.3±3.6) D and (5.4±1.2) million yuan respectively, while those in the control group were (15.4±5.9) days and (60 ± 1.7) million yuan respectively. There were significant differences between the two groups (t=-4.882, -2.794, P=0.000, 0.006). The details are shown in Figure 4.

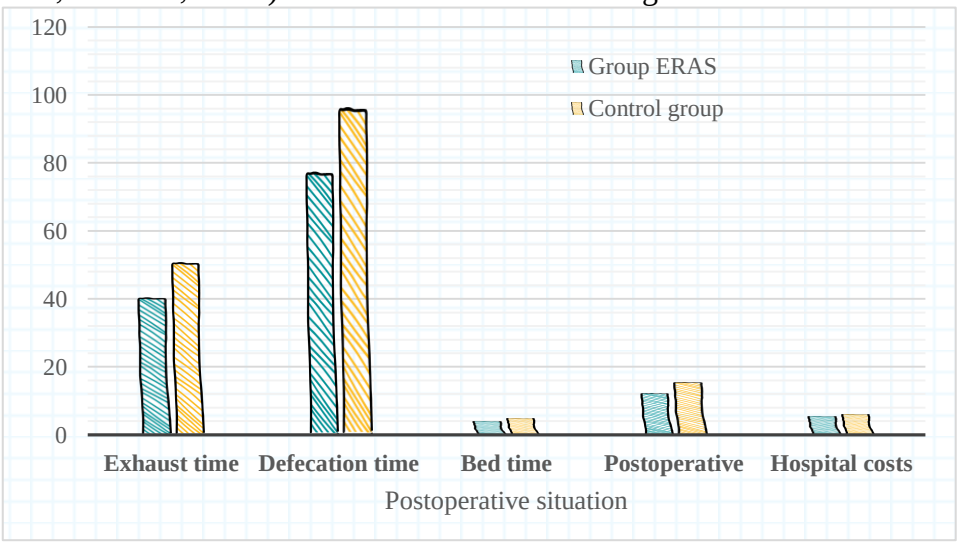

Figure 4: Comparison of general postoperative conditions of HCC patients in 2 groups

The application of fast track surgery nursing concept in laparoscopic liver cancer resection

perioperative period, including preoperative, intraoperative, postoperative a series of nursing measures, patients get less pain, less trauma, and effective treatment, get high-quality nursing service, so as to make patients recover early. Compared with the traditional nursing mode, the satisfaction score of patients in the satisfaction questionnaire has improved naturally.

We consider the following reasons: (1) the concept of fast track surgery reduces some unnecessary medical measures, such as how long indwelling catheter, drainage tube, reduce the stimulation of patients and accelerate rehabilitation. (2) Reducing the use of drugs to protect gastric mucosa, eating as soon as possible, reducing postoperative fluid infusion, saving medical costs. In this study, the total cost of hospitalization and the total length of hospitalization after independent sample t test $p < 0.05$, the experimental group reduced the hospitalization expenses of patients, at the same time shortened the hospitalization time of patients, greatly reduced the medical costs of patients, and patients were more satisfied with this way. This method also makes scientific use of medical resources, so that patients have no pain, low risk and high efficiency of rehabilitation.

5. Conclusions

Because of the long-term pain and surgical trauma, most patients have great psychological pressure and stress reaction during the treatment process, which has a serious impact on the surgical efficacy and postoperative rehabilitation. Previous studies have shown that scientific nursing intervention in perioperative period of laparoscopic hepatectomy is of great significance to improve the rehabilitation effect of patients. In this study, based on the concept of rapid rehabilitation, the perioperative nursing of patients with laparoscopic hepatectomy has achieved good results in reducing pain, reducing related complications and promoting postoperative rehabilitation.

In this study, eras concept can promote the postoperative rehabilitation of patients with HCC hepatectomy. Through strengthening preoperative education, canceling preoperative mechanical enema, shortening the time of fasting and drinking, taking early food and sufficient analgesia after operation, pulling out various drainage tubes as soon as possible, and getting out of bed as soon as possible after operation, the postoperative recovery of patients with HCC hepatectomy was significantly accelerated. In this study, the recovery of liver function indexes (alt, PA) in the rapid rehabilitation group was significantly better than that in the control group, the postoperative bed leaving time, anal exhaust time and defecation time were significantly shortened, and the postoperative infusion volume was significantly reduced, which promoted the recovery of patients after operation. In addition, on the basis of not increasing postoperative complications, the rapid rehabilitation group can significantly shorten the length of stay and reduce the total cost of hospitalization, which has a significant role in reducing the burden of patients and social economy, and reducing the waste of medical resources.

This study proved that the application of fast track surgery nursing concept in perioperative period of laparoscopic liver cancer resection is safe and effective. Without increasing postoperative complications and readmission rate, it can effectively reduce the cost of hospitalization, shorten the hospitalization time, promote the recovery of intestinal function, and improve the satisfaction and comfort of postoperative pain control.

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