# Application of Clinical Nursing Pathway in Patients Undergoing Endoscopic Submucosal Dissection (ESD)

**Yazhi He, Yan Lin**
Deyang People's Hospital, Deyang 618000, Sichuan, China
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**Abstract:** Objective: To explore the role of clinical nursing pathways in preventing complications, promoting recovery, and improving satisfaction in patients undergoing endoscopic submucosal dissection (ESD) during the perioperative period. Method: Forty ESD patients admitted to our hospital from March 2022 to March 2024 were selected as the research subjects. They were randomly divided into a control group and an observation group, with 20 cases in each group. The control group received routine nursing care, while the observation group received clinical nursing pathway. The incidence of complications and recovery time were observed in both groups. Result: □ The total incidence of complications in the observation group was 5.00%, significantly lower than that in the control group (30.00%) (P<0.05); □ The observation group had significantly shorter postoperative first meal time, bed activity time, and hospitalization time compared to the control group (P<0.05). Conclusion: For patients undergoing ESD treatment, implementing clinical nursing pathways during the perioperative period can reduce the incidence of complications and shorten the postoperative recovery time, which is worth promoting.
***Keywords*:** Endoscopic submucosal dissection (ESD); Clinical nursing pathway; Complication; Recovery time; Satisfaction level

## 1. Introduction

ESD is a commonly used surgical procedure for the treatment of early gastrointestinal tumors, submucosal lesions, and other diseases. However, to ensure the success of the ESD surgery and the smooth recovery of patients, perioperative nursing measures are equally crucial. Clinical nursing pathways (CNPs) are a nursing model that provides standardized nursing services to patients in an orderly manner through a pre-established nursing plan [1]. Given the unique and complex perioperative conditions of ESD patients, the application of CNPs can provide patients with continuous and procedural nursing measures, ensuring they receive comprehensive and meticulous nursing care throughout the entire treatment process [2]. This special topic aims to explore the impact of CNPs on postoperative complications and recovery progress in patients undergoing ESD treatment, in order to provide higher-quality nursing services for patients. The specific report is as follows.

## 2. Materials and Methods

### 2.1 General Information

Forty patients undergoing ESD treated in our hospital were selected as study subjects and grouped by random number table method. In the control group, there were 13 males and 7 females, aged 19-78 years, with 13 cases of gastric and esophageal submucosal bulges, 5 cases of gastrointestinal polyps, and 2 cases of early gastrointestinal cancer. The average age was (52.32±15.29) years. In the observation group, there were 14 males and 6 females, aged 20-77 years, with 12 cases of gastric and esophageal submucosal bulges, 5 cases of gastrointestinal polyps, and 3 cases of early gastrointestinal cancer. The average age was (51.98±15.64) years. There were no significant differences in baseline characteristics between the two groups (P＞0.05).

Inclusion Criteria:① The diagnostic criteria referred to the literature "Chinese Consensus on Clinical Application of Microendoscopic Digestive Diseases" [3];② Diagnosis was confirmed through biochemical tests, gastrointestinal endoscopy, etc.;③ Patients or their families provided informed consent to the study content.

Exclusion Criteria:① Patients with renal failure or other important organ failures;② Patients with severe diseases such as severe craniocerebral injury;③ Patients with thromboembolic diseases;④ Patients with immune deficiency diseases such as hypogammaglobulinemia;⑤ Patients with mental disorders such as neurasthenia;⑥ Pregnant or lactating women.

### 2.2 Methods

The control group received routine nursing care, while the observation group implemented clinical nursing pathways

for patients, with specific contents as follows:

A pathway management team is established, consisting of a head nurse (as the team leader, responsible for training and assessment), one nurse-in-charge (as the deputy leader, assisting the head nurse and overseeing nursing measures), and four responsible nurses with more than five years of experience. The head nurse trains the team members to ensure the smooth implementation of the nursing pathway.

(2) Development of a Nursing Pathway Plan: The team developed the "Perioperative Nursing Pathway for ESD Patients" by reviewing relevant literature and considering the hospital's actual situation. This pathway table uses time as the vertical axis and nursing procedures as the horizontal axis. The responsible nurses follow the table to carry out nursing work and mark the completion status. The team holds regular meetings to analyze and summarize issues, and continuously improve nursing measures.

(3) Implementation of Nursing Measures:① On the day of admission: The nursing staff warmly receives the patient, assists with admission procedures, and introduces the hospital environment, attending physician, and roommate to the patient. Basic patient information, including medical history, drug allergy history, and history of anticoagulant use, is collected. The patient is accompanied to complete relevant examinations, and the results are promptly reported to the attending physician to assist in formulating the surgical plan.② 1-2 days before surgery: The patient's understanding of the disease and surgery is inquired, and individualized health education is provided to make the patient aware of the importance and necessity of ESD treatment. The patient's psychological state is assessed, and comforting, encouraging, and distraction methods are used to help alleviate negative emotions [4]. A support system of relatives and friends is established to meet the patient's psychological needs. Dietary, exercise, and medication guidance is provided, and the patient is instructed to practice urinating in bed.③ On the day of surgery: The patient is instructed to fast for 6 hours and refrain from drinking for 4 hours. Surgical instruments and medications are prepared. During surgery, the patient is guided to adopt a suitable position, closely cooperate with the surgeon, enhance monitoring of vital signs, and prepare for and handle emergencies. After the surgery, the patient is transported back to the ward and their vital signs continue to be monitored. Once the patient regains consciousness, the surgery results are communicated, and possible postoperative complications and prevention methods are explained. The patient's pain level is assessed, and individualized pain relief interventions (such as relaxation training, distraction methods, and pharmacological analgesia) are implemented [5]. Emotional changes in the patient are observed and promptly addressed. Postoperative fasting and bed rest times are communicated to the patient.④ On the first postoperative day: Fasting is maintained for 24 hours, and parenteral nutrition support is provided. Vital signs are closely monitored, with particular attention to bowel sounds every 1-2 hours. The patient is assisted in adopting a comfortable position and instructed on proper turning and effective coughing techniques. The character, color, and volume of drainage fluid are observed, and the attending physician is promptly notified for effective intervention if abnormalities are noted. Active communication with the patient is maintained, and psychological counseling is provided.⑤ On the second postoperative day: The patient is inquired about symptoms such as abdominal distension and pain, and changes in facial expression and body temperature are noted. The patient is observed for complications such as bleeding and perforation. If no abnormalities are found, a small amount of lukewarm liquid food may be given; if abnormalities are noted, absolute fasting is maintained, and acid suppression, hemostasis, and other treatments are prescribed by the physician [6]. The patient is instructed to remain in bed but may perform bed exercises such as raising their head and stretching their limbs.⑥ From the third postoperative day to the day before discharge: The patient's bleeding is observed. If bleeding symptoms persist, fasting is extended. If there are no bleeding symptoms, the diet is gradually transitioned to semiliquid foods, soft foods, and ultimately regular food based on the patient's gastrointestinal function recovery. For patients with indications for tube removal, the nursing staff closely monitors the patient's clinical manifestations after tube removal. If symptoms such as pallor, sweating, hematemesis, or melena occur, indicating possible delayed bleeding [7], the physician should be immediately notified for intervention. For patients recovering well, guidance is provided on appropriate ambulation, with vigorous activity prohibited and ample rest encouraged.⑦ On the day of discharge: A discharge guidance manual is provided to the patient, and post-discharge precautions, including diet, medication, and exercise, are explained in detail. The patient's contact information is recorded for regular follow-up to monitor their recovery after discharge and remind them of scheduled follow-up visits. A WeChat group or official account is created to periodically provide patients with self-care knowledge after ESD surgery, offering technical guidance for self-care after discharge and facilitating timely feedback from patients to healthcare providers.

## 2.3 Observation Indicators

① Observation of Complications: To collect and count cases of complications such as abdominal distension, abdominal pain, bleeding, and infection in patients.

② Observation of Recovery Time: To record the patients' first postoperative feeding time, time of getting out of bed,

and length of hospital stay.

### 2.4 Statistical Methods

Using SPSS 26.0 for statistical analysis, normally distributed measurement data are presented in (false±s), with t-tests performed; count data are presented as rates, with chi-square tests performed. The criterion for statistical significance is set at $P < 0.05$.

## 3. Results

### 3.1 Analysis of Complication Incidence Between Two Groups

In the control group, the total incidence of complications was 30.00%, which was compared with 5.00% in the observation group ($P < 0.05$).See Table 1.

**Table 1. Comparison of Complication Incidence Between Two Groups [n (%)]**

| Group | Number of cases | Abdominal distension and pain | Bleeding | Infect | Amount to |
|---|---|---|---|---|---|
| Control group | 20 | 3(15.00) | 2(10.00) | 1(5.00) | 6(30.00) |
| Observation Group | 20 | 1(5.00) | 0(0.00) | 0(0.00) | 1(5.00) |
| $x^2$ | - | - | - | - | 4.329 |
| *P* | - | - | - | - | 0.037 |

### 3.2 Analysis of Two Recovery Times

The first eating, getting out of bed activity, and hospitalization time of the control group were significantly longer than those of the observation group leader ($P<0.05$). See Table 2.

**Table 2. Comparison of Recovery Time between Two Groups [$\bar{x}\pm s$, d]**

| Group | Number of cases | First eating time | Bedtime activity time | Hospital stay |
|---|---|---|---|---|
| Control group | 20 | 3.38±1.54 | 5.76±1.87 | 8.95±2.26 |
| Observation group | 20 | 2.36±1.18 | 4.67±1.25 | 7.49±1.83 |
| *t* | - | 2.351 | 2.167 | 2.245 |
| *P* | - | 0.024 | 0.037 | 0.031 |

## 4. Discussion

In this study, after implementing the clinical nursing pathway for 20 patients in our hospital, the complication rate was 5.00%, significantly lower than the 30.00% in the control group receiving conventional nursing. Among the complications, patients with abdominal distension and pain experienced symptom relief after dietary adjustments and gastrointestinal decompression. Bleeding was stopped after treatment with acid suppressants and hemostatic drugs, and infections were alleviated after antibiotic therapy. A significant difference in complication rates was observed between the two groups, indicating that the adoption of a clinical nursing pathway can effectively prevent complications. The reason for this is that under this nursing model, nurses provide clear and targeted nursing measures for patients from preoperative preparation to postoperative rehabilitation. Nurses work according to a predefined pathway, ensuring the standardization of nursing work, preventing the occurrence of errors, and reducing the risk of complications. This nursing model emphasizes personalized nursing services, allowing nurses to provide targeted nursing measures based on the patient's condition and needs, better meeting patient demands, and promptly identifying potential risk factors, thereby reducing the occurrence of complications [8]. The average postoperative feeding time, average time to ambulation, and average length of stay in the observation group were significantly shorter than those in the control group, confirming the role of this nursing model in promoting recovery. This is mainly because the application of a clinical nursing pathway can improve and standardize nursing procedures, avoiding oversights in nurses' work. It provides patients with comprehensive and targeted nursing services, which is conducive to improving the quality and efficiency of nursing . Additionally, this nursing model can implement various nursing measures purposefully and predictively based on the patient's physiological and psychological condition, which is of great significance for improving the patient's physical condition.

In summary, implementing a clinical nursing pathway for patients undergoing ESD treatment enables them to receive full-process and standardized nursing measures during the perioperative period. This is beneficial for nurses to promptly identify and address potential risks, reduce the occurrence of complications, and shorten the patient's recovery time.

Therefore, it is worthy of application.

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