Advances in Precision Medicine, 2026, Volume 11, Issue 8
https://bbwpublisher.com/journal/APM
Online ISSN: 2424-9106
Print ISSN: 2424-8592

Research on the Application of Bundled Care Combined with Clinical Care Pathways in Patients Undergoing Endoscopic Mucosal Dissection

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Abstract: *Objective:* To explore the application effect of bundled care combined with a clinical care pathway in patients with endoscopic submucosal dissection (ESD). *Methods:* The research period was from January 2024 to January 2026, and 116 cases who underwent ESD treatment in the Department of Gastroenterology of our hospital were included for analysis. The random number table method was used as a grouping method, and the groups were designated as the reference group (n=58) and the observation group (n=58). Routine nursing and bundled nursing combined with clinical nursing paths were carried out in sequence, and postoperative recovery-related indicators, psychological state, nursing satisfaction, and complications were evaluated in each group. *Results:* The first time out of bed, anal exhaust time, and hospitalization time of patients in the observation group were shorter than those in the reference group, and the VAS score was lower ($P < 0.05$). Mental state score: After nursing, the SAS and SDS scores of the observation group were significantly lower than those of the reference group ($P < 0.05$). Nursing satisfaction: Compared with the reference group, the observation group had higher nursing satisfaction ($P < 0.05$). Comparison of complication rates showed that the observation group was lower than the reference group ($P < 0.05$). *Conclusion:* Adopting bundled care combined with clinical care paths for ESD patients can optimize postoperative recovery indicators and improve patients' psychological state. It can also reduce the incidence of complications and improve nursing satisfaction, which has clinical promotion value.

Keywords: Bundle care; Clinical nursing pathway; Endoscopic mucosal dissection; Application effect

Online publication: August 26, 2026

1. Introduction

Endoscopic submucosal dissection (ESD) is a commonly used minimally invasive technique in the

Department of Gastroenterology to treat early cancers, precancerous lesions, and submucosal tumors of the digestive tract. It mainly removes the diseased mucosa completely under a digestive endoscope, thereby reducing surgical trauma and promoting the patient's recovery. However, surgery is a stressful event, which can cause patients to have physiological and stress reactions. Without reasonable intervention, it can easily cause hemodynamic fluctuations and even affect the safety and effectiveness of surgery. Therefore, it is of great significance to take effective nursing measures [1]. Routine nursing measures for ESD focus on condition monitoring and surgical management. Nursing care is highly universal and difficult to meet the individual needs of patients. Bundle nursing is based on evidence-based concepts and integrates multiple nursing measures. Nursing measures proposed for certain nursing problems can solve current nursing problems and reduce the risk of complications [2]. The clinical nursing path is a new nursing model based on surgery, diagnosis, and treatment. It has the advantages of high quality, low cost and high efficiency. During the intervention process, the plan is formulated with time as the axis, which fully highlights the people-centered concept and can also promote early recovery [3]. Based on this, this article selected 116 ESD patients to conduct group comparisons to comprehensively analyze the effect of bundled care combined with clinical care pathways.

2. Materials and methods

2.1. General information

From January 2024 to January 2026, ESD patients diagnosed and treated in our hospital were included in the sample, with a total of 116 cases. According to the random number table method, the patients (58 cases) were equally divided into the reference group and the observation group to conduct the study. In the reference group, there were 22 males and 36 females, respectively; the age ranged from 32 to 85 (58.50 ± 5.82) years; the duration of illness was 3 to 7 (5.00 ± 0.75) months. In the observation group, there were 21 males and 37 females, respectively; the age ranged from 34 to 83 (58.50 ± 5.78) years; the duration of illness was 3 to 7 (5.04 ± 0.77) months. Relevant data were entered into SPSS26.0 software. After comprehensive analysis, the statistical result was $P > 0.05$, indicating that the research was balanced.

2.2. Research standards

Inclusion criteria: (1) Enrolled patients have clear consciousness and normal basic communication skills; (2) Diagnosed with early gastrointestinal cancer or precancerous lesions through gastroscopy/colonoscopy and pathological biopsy, all of which are in compliance with ESD treatment indications; (3) Participants have complete clinical information and all voluntarily signed informed consent forms.

Exclusion criteria: (1) severe cognitive dysfunction or mental illness; (2) abnormal coagulation mechanism; (3) patients with other malignant tumors; (4) patients with infectious diseases.

2.3. Method

The reference group received routine care, received health education for patients, was introduced to basic disease knowledge, treatment plans, etc., and was informed of ESD treatment steps, plans, and precautions in detail. Before surgery, the surgical procedures are routinely explained, and guidance on dietary fasting, intestinal cleansing, etc. is given. Work closely with the doctor during the operation, continuously monitor vital signs after the operation, and provide guidance on diet and medication.

The observation group adopts bundled care + clinical care path, specifically:

(1) Clinical nursing path: (a) Conduct a systematic assessment of the patient on the first day after admission to fully understand vital signs, mental state, nutritional status and comorbidities. A health manual is issued to the patient, explaining the disease and surgical treatment in detail, and assisting in improving preoperative examinations. (b) Strengthen health education 1 day before the operation, clearly inform the key points of cooperation during the operation and precautions after the operation. Fasting for 8-12 hours before the operation and water for 4-6 hours before the operation. Intestinal cleansing is carried out according to standards, and targeted psychological counseling is provided to the patient. (c) On the day of surgery, strictly check the patient's information and preoperative preparations, follow the doctor's instructions to establish intravenous access or assist in anesthesia, closely monitor bleeding and vital signs, and transfer to the recovery area after surgery. (d) Continuously monitor blood oxygen saturation and ECG for 1-3 days after surgery, and observe whether there are symptoms such as abdominal pain, bloating, and blood in the stool. The diet should follow the principle of fasting → liquid → semi-liquid, and assist the patient in early bed activities. (e) Comprehensively analyze the patient's recovery situation, formulate a discharge plan for him, and issue a discharge instruction manual.

(2) Bundle care: (a) Comprehensively analyze the patient's psychological state, build a closed-loop management of psychological support, provide patients with one-on-one psychological counseling, enhance treatment confidence by sharing successful cases, and invite psychological nurses to intervene when necessary. (b) Strictly implement thermal insulation measures such as thermal blankets and heated infusions during the operation to comprehensively prevent adverse events caused by hypothermia. Cooperate with the doctor to accurately mark the scope of the lesion, assist in submucosal injection and peeling operations, actively handle wound bleeding, and record the operation situation in detail to provide support for postoperative care. (c) Use standardized tools to dynamically monitor symptoms, and focus on signs of bleeding or perforation such as melena, severe abdominal pain, etc., 24 hours after surgery. Closely monitor vital signs, actively implement respiratory management, and comprehensively prevent adverse events. (d) After waking up from anesthesia, encourage bed ankle pump exercises and limb activities to effectively improve blood circulation, and develop a personalized activity plan based on the degree of wound recovery.

2.4. Observation indicators

(1) Postoperative recovery indicators: including the time to get out of bed for the first time, anal exhaust time, hospitalization time, and pain conditions (assessed by the VAS method 24 hours after surgery, 0-10 points; the lower the score, the milder the pain).

(2) Mental state: Use SAS (anxiety) and SDS (depression) self-rating scales. The higher the score, the worse the patient's mental state.

(3) Nursing satisfaction: A self-made scale is used to divide nursing satisfaction into three levels based on the results of patient questionnaires, including dissatisfaction (0-59 points), general satisfaction (60-89 points), and very satisfied (90-100 points).

(4) Complications: mainly involving postoperative delayed bleeding, perforation, and abdominal pain.

2.5. Statistical analysis method

The data involved in the study were all processed by SPSS 26.0 software. Postoperative rehabilitation indicators, mental state scores, nursing satisfaction rates, and complication rates were expressed as measurement data and count data, respectively. Testing methods: T, χ^2 test, and $P < 0.05$ was considered a significant difference between the groups.

3. Results

3.1. Analysis of postoperative rehabilitation-related indicators

The time to get out of bed for the first time after surgery, anal exhaust time, and hospitalization days in the observation group were all significantly shorter than those in the reference group, and the VAS score was lower ($P < 0.05$). The detailed data are shown in **Table 1**.

Table 1. Analysis of postoperative rehabilitation-related indicators in the two groups (mean± SD)

Group	Time to get out of bed for the first time (h)	Anal exhaust time (h)	Length of stay (d)	VAS (points)
Observation group (n=58)	22.93 ± 4.93	24.39 ± 5.92	6.94 ± 1.27	2.83 ± 0.62
Reference group (n=58)	26.04 ± 4.72	29.04 ± 5.49	8.02 ± 1.38	3.71 ± 0.66
t	3.481	4.386	8.446	7.400
P	0.000	0.000	0.000	0.000

3.2. Psychological state analysis

There was no significant difference in the mental state scores of the two groups of patients before nursing ($P > 0.05$); after nursing, the SAS and SDS scores of the observation group were lower than those of the reference group ($P < 0.05$), see **Table 2**.

Table 2. Analysis of the psychological state of the two groups (mean ± SD)

Group	SAS		SDS	
	Before care	After care	Before care	After care
Observation group (n=58)	54.18 ± 2.19	38.18 ± 2.01	55.07 ± 2.28	36.23 ± 3.08
Reference group (n=58)	54.19 ± 2.17	44.73 ± 2.14	55.01 ± 2.23	45.19 ± 3.21
t	0.025	16.991	0.143	15.339
P	0.980	0.000	0.886	0.000

3.3. Analysis of nursing satisfaction

Compared with the reference group, the observation group had higher nursing satisfaction ($P < 0.05$), see **Table 3**.

Table 3. Analysis of nursing satisfaction between the two groups (n/%)

Group	Very satisfied	Generally satisfied	Not satisfied	Overall satisfaction
Observation group (n=58)	41(70.69)	16(27.59)	1(1.72)	57(98.28)
Reference group (n=58)	31(53.45)	19(32.76)	11(18.96)	47(81.03)
x^2	--	--	--	9.295
P	--	--	--	0.002

3.4. Complications

There were 2 (3.45%) and 9 (15.52%) cases of complications in the observation group and the reference group respectively. Comparison of the complication rates showed that the observation group was lower than the reference group ($P < 0.05$). The detailed data are shown in **Table 4**.

Table 4. Analysis of complications in the two groups (n/%)

Group	Delayed bleeding	Perforation	Abdominal pain	Overall incidence
Observation group (n=58)	1(1.72)	1(1.72)	0(0.00)	2(3.45)
Reference group (n=58)	3(5.17)	2(3.45)	2(3.45)	9(15.52)
χ^2	--	--	--	4.921
P	--	--	--	0.027

4. Discussion

Digestive endoscopic submucosal dissection is a representative technique for minimally invasive clinical treatment of early cancers and precancerous lesions of the digestive tract. It is widely used in the clinical treatment of early tumors of the esophagus, stomach and colorectum due to its advantages of fast recovery, minimal trauma, and preservation of intact organ function [4]. However, the ESD operation is technically difficult, and complications such as intraoperative bleeding and perforation are not uncommon. Because patients lack a correct understanding of the disease and surgery and are worried about the prognosis, they have obvious negative emotions, which can affect the postoperative recovery process. In view of the characteristics of ESD, how to ensure the surgical effect and optimize the nursing intervention plan has become a key clinical issue. Traditional nursing focuses on the patient's physiological indicators and improves the patient's cooperation with surgery, but ignores the patient's psychological assessment and intervention, which affects the patient's postoperative recovery [5]. The clinical nursing path can clarify the nursing tasks at each time point, thereby avoiding the waste of time. The cooperation of bundled nursing can stabilize the patient's condition and reduce the risk of complications. At the same time, under the joint nursing model, the nursing content is well-documented, avoiding blindness in nursing work and helping to improve the quality of nursing [6].

According to the results of this study, the observation group had an earlier time to get out of bed for the first time, shorter anal exhaust time, shorter hospitalization time, and a lower VAS score. The difference was significant compared with the reference group ($P < 0.05$). The main reason is that bundled care is an intervention strategy that integrates, packages, and coordinates a series of nursing measures based on evidence-based medical evidence. It emphasizes "bundled execution" to improve the systematicness of nursing effects. This nursing program can effectively shorten the postoperative recovery process [7]. The clinical nursing path can develop a standardized diagnosis and treatment process based on the characteristics of ESD. It has strong operability, repeatability and timing. It can effectively standardize nursing behavior and reduce resource waste. It can also create ideal conditions for postoperative recovery [8]. The psychological state score of the observation group after care was lower than that of the reference group, and the difference was significant ($P < 0.05$). The main reason is that the clinical nursing path allows patients to receive information support that matches their needs at different stages through standardized nursing processes, avoiding anxiety and uncertainty caused by a lack of information. Bundle nursing can provide patients

with closed-loop management, and nursing interventions can be changed from passive to active, which can comprehensively regulate patients' emotions. After the observation group received bundled care + clinical care path, the nursing satisfaction was as high as 98.28%, which was significantly different from the 81.03% of the reference group ($P < 0.05$). The reason for the analysis is that patients under the clinical care path were satisfied with the daily care content. It is expected that it can enhance patients' sense of participation and attention, while bundled care ensures the continuity and homogeneity of nursing work and avoids service differences caused by shift handover or nurse rotation. The combination of the two improves the patient's medical experience, so nursing satisfaction is high. Complications in the observation group and reference group were 3.45% and 15.52%, respectively, and the difference was significant ($P < 0.05$). The analysis found that through the standardized early warning process in the clinical nursing path, nursing staff can early identify signs of complications such as bleeding and perforation, and various intervention measures are more active. Through posture management, early mobilization and other measures, bundled care can form a multi-link collaborative protection network, avoiding the limitations of a single measure, and can also comprehensively prevent complications.

5. Conclusion

In summary, the combined use of bundled care and clinical care pathways for ESD patients can optimize postoperative recovery indicators, improve psychological status, reduce the risk of complications, and improve nursing satisfaction, which is worthy of clinical promotion and application.

Disclosure statement

The author declares no conflict of interest.

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