

Study on Nursing Measures of Abdominal Distension in Patients after Endoscopic Polypectomy

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Abstract: Endoscopic polypectomy (EP) is the preferred method for the treatment of rectal polyps because of its micro-trauma and rapid recovery. However, the incidence of postoperative abdominal distension can reach 15–30%. This common complication seriously affects the quality of life of patients after surgery, prolongs the length of hospital stay, and may even be complicated by perforation and other problems. This article systematically reviews the latest research progress on the mechanism, related influencing factors and targeted nursing interventions of abdominal distension after EP, so as to explore effective interventions for postoperative comprehensive nursing, which has core value for improving the postoperative experience and prognosis of EP patients.

Keywords: Endoscopic polypectomy; Postoperative abdominal distension; Nursing intervention; Bowel preparation; Comprehensive care

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1. Introduction

Endoscopic Polypectomy (EP) is currently the main method for clinical treatment of colonic polyps, which is characterized by minimal invasion, safety and short recovery period. Although the prognosis of patients after EP is generally good, there are still some postoperative complications that affect the quality of life of patients. Among the complications of EP, abdominal distension is one of the common discomforts^[1].

Postoperative abdominal distension refers to the postoperative complications of patients with abdominal distension and distension as the main symptoms, which may be accompanied by abdominal pain and malignant symptoms after EP^[2]. Studies have shown that the incidence of postoperative abdominal distension is often 15–30%, which affects the progress of postoperative rehabilitation and prolongs the length of hospital stay of patient^[3]. In severe cases, excessive abdominal distension may also increase the risk of delayed wound bleeding. Therefore, it is of great clinical significance to explore the mechanism and risk factors of abdominal distension after EP, and to carry out effective nursing interventions in time for reducing the pain of patients, accelerating the rehabilitation

process and improving the quality of medical care.

This article aims to focus on the problem of postoperative abdominal distension in EP patients, review its pathophysiological basis and influencing factors, and focus on the corresponding nursing intervention strategies and the latest research progress of effect evaluation, so as to provide theoretical basis and practical guidance for clinical nursing practice.

2. The mechanism of postoperative abdominal distension

The occurrence of abdominal distension after EP is the result of the joint action of many factors, mainly include: first, residual gas retention. In order to obtain a clear surgical field, doctors need to continuously inject gas into the intestinal cavity during EP surgery. After the operation, although most of the gas will be absorbed, there is still a certain amount of gas retention and intestinal cavity. These gases cannot be effectively pushed down through the anus, resulting in abdominal distension. Secondly, intestinal peristalsis inhibition: mechanical traction stimulation of the intestine by the operation itself and the anesthetic drugs used during the operation will inhibit the normal peristalsis function of the intestine to a certain extent, which will block the downward propulsion of intestinal contents and further aggravate abdominal distension. Third, intestinal flora imbalance, EP preoperative bowel cleaning prepares a large number of normal flora in the intestines, the intestinal microecological balance destroyed. In the early postoperative period, the metabolic activity of opportunistic pathogens can produce excess gas, leading to abdominal distension ^[4].

3. The nursing assessment of postoperative abdominal distension

Timely and accurate assessment of patients' abdominal distension is the premise of effective medical intervention. Assessment mainly includes subjective assessment and objective assessment.

The subjective evaluation mainly includes asking the patient in detail about the location, nature, degree, duration, changes and accompanying symptoms of abdominal distension, while the objective evaluation can be carried out from the following aspects: first, inspection: to observe whether the abdominal shape is distention, symmetry, gastrointestinal type and peristaltic waves; Second, auscultation: to evaluate the frequency, pitch, and intensity of bowel sounds. Hyperactive bowel sounds may indicate that the bowel is trying to regain peristalsis or that there is early obstruction. Attenuation or disappearance of bowel sounds is a typical sign of inhibition of intestinal peristalsis. Thirdly, percussion: abdominal percussion with generalized tympanic sounds indicates significant pneumatosis intestinalis; Fourth, palpation: gently touch the abdomen to assess whether there is tenderness, rebound pain, and muscle tension; Fifth, measure abdominal circumference, measuring abdominal circumference is a simple quantitative index to evaluate the degree of abdominal distension; Sixth, observe the anal exhaust and defecation: record the time and frequency of the first exhaust and defecation, which is an important marker to evaluate the recovery of intestinal function.

4. Comprehensive nursing interventions

Aiming at the multi-factor pathogenesis of abdominal distension after EP, nursing intervention should run through the perioperative period.

4.1. Preoperative nursing intervention

4.1.1. Optimize bowel preparation

According to the patient's age, liver and kidney function, comorbidities, tolerance and doctor's requirements, choose the most appropriate bowel cleansing program. Studies have shown that, for bowel cleansing drugs, the cleaning effect and tolerance of low-dose divided administration are usually better than that of a single large dose.

4.1.2. Refined health education

For patients who need to take intestinal cleansing drugs alone, they should be given detailed, repeated and multi-form guidance, so that they can prepare and take intestinal cleansing drugs according to the requirements, and emphasize the importance of adequate water intake and observe the excretions to meet the standards.

4.1.3. Dynamic evaluation and feedback

According to the process of bowel cleansing and the effect of bowel cleansing, the implementation of patients can be dynamically evaluated through various forms, and the adverse reactions of patients and their excretion effects can be paid attention to. For those who failed to meet the standards, timely assistance was given to take remedial measures.

4.1.4. Psychological counseling and health education

Actively communicate with patients, introduce the operation process and safety to relieve the preoperative anxiety of patients. After the operation, patients are clearly informed of the possibility of postoperative abdominal distension and the normal recovery time, explain the reasons for its occurrence, emphasize the importance of early activities, and improve their coping ability and compliance.

4.2. Intraoperative nursing cooperation

4.2.1. Application and monitoring of CO₂ gas injection

Actively assist doctors to correctly use CO₂ gas injection system to replace the traditional air injection. And familiar with the operation of the equipment, closely cooperate with the doctor, according to the actual operation needs to adjust the gas injection volume in time. Before the end of the operation, remind or assist the doctor to fully suction the gas injected into the intestinal cavity.

4.2.2. Patient position management

Assist the doctor to adjust the patient's position, and use gravity to help the gas move to the low intestinal segment for easy suction. During the movement process, ensure the patient's position is comfortable and safe.

4.2.3. Confirmation of suction adequacy

Before the end of the operation, the doctor should actively remind the doctor to perform adequate and thorough intestinal gas suction again, especially paying attention to the sites where gas is easy to accumulate such as the hepatic flexure of the colon and the splenic flexure.

4.3. Postoperative nursing intervention

4.3.1. Early ambulation

When the vital signs of patients are stable and there is no absolute contraindication, encourage and assist them to

start bed activities as soon as possible, and begin to walk slowly out of bed at 46 hours after surgery or according to the doctor's advice. According to the 2023 Expert consensus on Perioperative Patient exercise management under digestive endoscopy, early postoperative mobilization of EP patients can help patients accelerate postoperative recovery and reduce the length of hospital stay^[5].

4.3.2. Abdominal massage

Ask the patient to lie in a comfortable supine position with both legs bent and relaxed. With the umbilical cord as the center, massage along the direction of ascending colon → transverse colon → descending colon → sigmoid colon (that is, clockwise), the massage is circular, slow, deep and rhythmic. The intensity is moderate, so that the patient feels comfortable and has a slight sense of pressure. Abdominal massage can effectively promote the recovery of postoperative gastrointestinal function, shorten the time of first exhaust and defecation, relieve abdominal distension and improve the comfort of patients by stimulating intestinal peristalsis.

4.3.3. Progressive diet management

Patients were instructed to take the principle of “step by step, a small number of meals”. Patients were required to strictly avoid gas-producing foods, irritating foods, high-fiber foods and other foods that may cause constipation within 1–2 weeks after surgery. For patients with large surgical scope, many wounds, old age, and poor basic gastrointestinal function, it is more necessary to closely observe the reaction of patients after eating and adjust the diet plan in time.

4.3.4. Promote exhaust and defecation

Even if the patient has no intention to defecate, he or she can be encouraged to try to go to the toilet after 24 hours after surgery, and use the position reflex and gastrocolic reflex to promote defecation.

4.3.5. Warm water sitz bath

Warm water sitz bath can relax the anal sphincter, promote local blood circulation, and help to exhaust and defecate.

4.3.6. Drug treatment

For those with severe abdominal distension, weak bowel sounds, and no exhaust and defecation for a long time, use gastrointestinal motility drugs or laxatives according to the doctor's advice.

4.3.7. Psychological support and comfort care

Understand patients' discomfort and anxiety caused by abdominal distension, patiently explain to patients that abdominal distension is a common and relievable process. After nursing intervention, feedback the effect of intervention measures to patients in time, and increase patients' confidence.

5. Evaluation index of nursing effect

Nursing intervention for abdominal distension after EP is multifaceted. Therefore, accurate evaluation of the effect of intervention needs to combine multi-dimensional indicators. The main indicators include: first, the incidence

of abdominal distension: the proportion of patients with postoperative abdominal distension was calculated to evaluate the effect of preoperative and intraoperative nursing intervention; Second, the degree of abdominal distension: the degree of abdominal distension before and after nursing intervention was objectively measured to evaluate the effect of postoperative nursing intervention. Thirdly, the duration of abdominal distension: the time from the occurrence of abdominal distension to significant relief or disappearance was recorded to evaluate the effect of postoperative nursing intervention. Fourthly, the recovery time of intestinal function: the first exhaust time and defecation time were recorded and analyzed to reflect the recovery of intestinal peristalsis function and evaluate the effect of postoperative nursing intervention. Fifth, patient comfort score: the standardized comfort scale was used to evaluate the overall comfort of patients and the effect of perioperative nursing intervention. In addition, patient satisfaction, length of hospital stays and patient compliance with intervention measures can also be used as an evaluation index of nursing effect to a certain extent.

6. Conclusions and prospects

At present, endoscopic polypectomy is a relatively mature and widely application of minimally invasive techniques, postoperative abdominal distention although this complication does not affect the surgical treatment effect, but for the patient's postoperative rehabilitation and medical quality evaluation has brought some challenges^[6]. Studies have shown that the occurrence of postoperative abdominal distention and operation, the patient's own accurately and postoperative management are closely related, therefore, reduce and reduce the occurrence of abdominal distension rely on many links, many factors closely^[7,8].

This study systematically analyzed the occurrence mechanism of postoperative abdominal distension, nursing evaluation and intervention measures, and showed that timely and accurate and effective nursing intervention is the main measure to effectively prevent and alleviate abdominal distension. And effective nursing intervention, its core point is perioperative holistic nursing, including the personality of preoperative bowel preparation and timely psychological health education, intraoperative cooperate with the doctor in CO₂ gas injection position changes of the patients, reduce the residual gas and attention; After operation, patients were timely supervised to exercise, abdominal massage and individualized diet management. According to a large number of clinical studies, perioperative comprehensive and timely nursing intervention can significantly reduce the incidence of abdominal distension after EP, reduce the degree of abdominal distension, and accelerate the recovery of intestinal function of patients^[9].

In the future, for the nursing level, should be more focused and individualized nursing intervention on patients with different risk stratification, and with the aid of high and new technology, research and development more objective, more convenient real-time monitoring tools, auxiliary nursing patient assessment^[10]. Most importantly, precise professional evaluation ability, improve nursing staff and humanistic care skills, so that personalized nursing measures can implement to each patient, maximum extent, reduce the postoperative complications to patients.

Disclosure statement

The author declares no conflict of interest.

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