

Effects of Acupoint Massage Combined with TCM Hot Compress Pack on Abdominal Distension, Pain, and Comfort Level after Colonoscopy under General Anesthesia

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Abstract

Objective: To investigate the alleviating effect of acupoint massage combined with traditional Chinese medicine hot compress on abdominal distension and pain following painless colonoscopy and its impact on patient comfort. **Methods:** A total of 300 patients who underwent painless colonoscopy in our hospital from January to June 2024 were enrolled and randomly divided into an observation group (n=150) and a control group (n=150). The control group received routine nursing care, while the observation group received acupoint massage combined with fennel and coarse salt hot compress intervention in addition to routine care. Comparisons between the two groups included abdominal distension VAS scores at different postoperative time points, time to first flatus, comfort scores, and nursing satisfaction. **Results:** The abdominal distension VAS score at 3h postoperatively in the observation group was significantly lower than that in the control group (2.6 ± 1.2 vs 4.7 ± 1.5 , $P < 0.001$), the time to first flatus was shorter (22.3 ± 6.5 min vs 34.1 ± 8.7 min, $P < 0.01$), and both comfort scores and nursing satisfaction were higher than those in the control group ($P < 0.05$). **Conclusion:** Acupoint massage combined with hot compress can effectively alleviate abdominal distension and pain after painless colonoscopy, improve patient comfort, and is worthy of clinical promotion.

Full Text

Effects of Acupoint Massage Combined with Traditional Chinese Medicine Heat Package on Abdominal Distension, Pain, and Comfort After Colonoscopy Under General Anesthesia

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Abstract

Objective: To investigate the effect of acupoint massage combined with traditional Chinese medicine heat package on relieving abdominal distension and pain after colonoscopy under general anesthesia and its influence on patient comfort.

Methods: A total of 300 patients who underwent painless colonoscopy in our hospital from January to June 2024 were randomly divided into an observation group (n=150) and a control group (n=150). The control group received routine nursing care, while the observation group received acupoint massage combined with cumin coarse salt heat package intervention in addition to routine care. Abdominal distension VAS scores at different postoperative time points, first exhaust time, comfort scores, and nursing satisfaction were compared between the two groups.

Results: The VAS score for abdominal distension in the observation group at 3 hours postoperatively was significantly lower than that in the control group (2.6 ± 1.2 vs 4.7 ± 1.5 , $P < 0.001$), with a shorter first exhaust time (22.3 ± 6.5 min vs 34.1 ± 8.7 min, $P < 0.01$). Comfort scores and nursing satisfaction were also higher in the observation group ($P < 0.05$).

Conclusion: Acupoint massage combined with heat package can effectively relieve abdominal distension and pain after painless colonoscopy, improve patient comfort, and has clinical promotion value.

Keywords: Colonoscopy under general anesthesia; Traditional Chinese medicine heat package; Acupoint massage; Abdominal pain; Abdominal distension

Introduction

Colonoscopy has become a crucial diagnostic and therapeutic tool for large intestinal diseases, particularly in the early screening and diagnosis of colorectal cancer [1-2]. However, the procedure requires insufflation of gas into the intestinal lumen to adequately visualize the mucosa, which frequently leads to postoperative discomfort such as abdominal distension and pain. Studies have

reported incidence rates ranging from 6.5% to 13.8% [3-4], with some patients also experiencing nausea, vomiting, pallor, generalized fatigue, and even anxiety [5-6]. Severe distension that goes unaddressed not only reduces patient tolerance and satisfaction with colonoscopy but may also affect willingness to undergo follow-up examinations [7]. Therefore, alleviating abdominal distension and pain after painless colonoscopy and restoring bowel function promptly are essential for improving postoperative comfort and patient compliance.

In recent years, acupoint massage has demonstrated advantages in improving postoperative distension and promoting exhaust due to its simple operation and cost-effectiveness [8]. Heat packages can further relieve smooth muscle spasm, accelerate intestinal peristalsis, and reduce pain and discomfort through thermal stimulation of local blood circulation and nerve endings [9]. However, most current research has focused on single intervention modalities, and systematic investigation of combined “acupoint massage + heat package” interventions remains lacking. Guided by the concept of integrated Chinese and Western nursing care, this study innovatively employed acupoint massage combined with cumin coarse salt heat package intervention to observe its effects on abdominal distension, pain, and comfort in patients after painless colonoscopy, providing new nursing insights and evidence-based support for clinical practice.

Methods

1.1 Study Subjects

Using simple random sampling, 300 patients who underwent painless colonoscopy at Changzhou Hospital of Traditional Chinese Medicine from January to June 2024 were selected as study subjects. The study was approved by the hospital's Medical Ethics Committee prior to implementation. Inclusion criteria were: (1) age 18-60 years, regardless of gender; (2) first-time painless colonoscopy; (3) ASA classification I-II; (4) examination duration ≤ 20 minutes; (5) informed consent and ability to cooperate with the study. Exclusion criteria included: (1) allergy to cumin; (2) heat intolerance; (3) acute gastrointestinal bleeding; (4) severe cardiac, cerebral, renal, or pulmonary dysfunction; (5) intestinal injury; (6) malignant tumors; (7) previous abdominal surgery (including ovarian, uterine, cesarean section, appendectomy, etc.); (8) severe mental illness (including severe anxiety, depression, schizophrenia) or inability to cooperate (including communication barriers, significant cognitive impairment); (9) dermatitis or open wounds on abdominal skin, or diabetic patients with impaired temperature sensation; (10) severe complications during examination; (11) pregnancy or lactation; (12) patients who had already passed gas spontaneously after the procedure.

Patients were randomly divided into observation and control groups of 150 each using a random number table. Comparison of general data including age, gender, body mass index (BMI), and waist circumference showed no statistically significant differences between the two groups ($P > 0.05$), indicating comparability.

All patients signed informed consent forms.

1.2 Interventions

1.2.1 Routine Nursing Care The control group received routine nursing care: (1) immediate post-examination vital signs measurement; (2) guidance on timely turning and ambulation; (3) clockwise abdominal massage upon complaint of distension.

1.2.2 Acupoint Massage Combined with Traditional Chinese Medicine Heat Package The observation group received acupoint massage combined with cumin coarse salt heat package intervention in addition to routine care.

Heat Package Preparation: Cumin (150g) and coarse salt were mixed at a 1:2 ratio and placed in a 12cm \times 18cm cotton bag (lined with non-woven fabric). The package was preheated in a medical digital constant-temperature heating cabinet (set at $55\pm 1^\circ\text{C}$).

Acupoint Location and Operation: (1) Heat package application: The cumin coarse salt heat package was placed on the Shenque (CV8, umbilical center) and Tianshu (ST25, 2 cun lateral to the umbilicus) acupoints, separated by a large bath towel (to ensure even heat distribution and prevent burns), and secured with an elastic abdominal band for 15 minutes [10]. (2) Acupoint massage: Both thumbs simultaneously pressed the Zhigou (TE6, 3 cun above the wrist dorsal crease, between the radius and ulna) and Jianshi (PC5, 3 cun above the wrist crease, between the palmaris longus and flexor carpi radialis tendons) acupoints with uniform, sustained, moderate pressure to elicit sensations of heat, numbness, distension, soreness, and pain, for 5 minutes [11].

Procedure: After completing painless colonoscopy, patients were transferred to the recovery room for routine postoperative monitoring. Trained nursing staff assessed patient recovery using the modified Aldrete score every 15 minutes [12-14]. The combined intervention was administered only after patients achieved a score ≥ 9 with stable vital signs. During the procedure, nursing staff observed and recorded local skin temperature and color changes every 10 minutes, immediately discontinuing the heat package if temperature was too high or patients experienced discomfort.

1.3 Outcome Measures

1.3.1 Abdominal Distension Severity: Assessed using the Visual Analogue Scale (VAS, 0-10 points), with higher scores indicating more severe distension. Evaluations were performed immediately postoperatively and at 1 hour and 3 hours.

1.3.2 First Exhaust Time: Recorded as the time from examination completion to first anal exhaust (in minutes).

1.3.3 Comfort Score: Assessed using Kolcaba's Comfort Scale, comprising three dimensions (physiological, psychological, environmental) with a total score

of 100 points, where higher scores indicate better comfort [15-16].

1.3.4 Nursing Satisfaction: Assessed using a self-designed satisfaction scale (5-point Likert scale) including: (1) Nursing skills dimension (25 points): acupoint location accuracy, massage technique proficiency, heat package temperature control, complication prevention measures, and operational standardization; (2) Service attitude dimension (15 points): communication patience, explanation detail, and service initiative; (3) Effect satisfaction dimension (10 points): symptom improvement and overall comfort. Total score was 50 points: \$45 indicated very satisfied, 35-44 satisfied, 25-34 neutral, and <25 dissatisfied.

1.3.5 Adverse Reactions: Recorded incidences of skin burns, tenderness, and other adverse reactions.

1.4 Statistical Methods

SPSS 26.0 software was used for statistical analysis. Measurement data were expressed as mean±standard deviation ($\bar{x}\pm s$) and compared between groups using independent samples t-test. Count data were expressed as number (%) and analyzed using χ^2 test. $P<0.05$ was considered statistically significant.

Results

Three cases were lost in the observation group (2 excluded due to intraoperative complications, 1 lost to follow-up), and 2 cases in the control group (1 refused continued participation, 1 lost to follow-up). Final analysis included 147 cases in the observation group and 148 in the control group.

2.1 VAS Scores for Abdominal Distension

The observation group showed significantly lower VAS scores for abdominal distension at 1 hour and 3 hours postoperatively compared to the control group ($P<0.05$).

2.2 First Exhaust Time

The observation group had a significantly shorter first exhaust time than the control group ($22.3\pm 6.5\text{min}$ vs $34.1\pm 8.7\text{min}$, $P<0.01$).

2.3 Comfort Scores

The observation group demonstrated higher comfort scores than the control group (85.6 ± 7.2 vs 76.3 ± 8.1 , $P<0.05$).

2.4 Nursing Satisfaction

The observation group's very satisfied rate was 92.8%, significantly higher than the control group's 76.5% ($P<0.01$).

2.5 Adverse Reactions

The observation group experienced 2 cases of mild skin erythema (1.36%), which resolved after 30 minutes of cold compress application, with no other adverse reactions reported.

Discussion

Although painless colonoscopy effectively reduces pain and fear during the procedure, patients still commonly experience postoperative abdominal distension and pain due to gas insufflation required for adequate mucosal visualization, with some individuals also experiencing anxiety, nausea, and vomiting. When nursing staff merely consider postoperative distension as a “normal phenomenon” without adequate attention, it often leads to physical and psychological discomfort, poor patient experience, and potential medical disputes with decreased satisfaction. This study demonstrates that combining acupoint massage with cumin coarse salt heat package effectively alleviates post-colonoscopy distension and pain while significantly improving subjective satisfaction and professional recognition of nursing operations.

Our results show that the observation group had significantly lower VAS scores for distension at 3 hours postoperatively and markedly shorter first exhaust time, indicating that the combined intervention actively promotes intestinal exhaust, reduces smooth muscle spasm, and alleviates distension. Nursing satisfaction and comfort evaluations were also superior in the observation group. During interviews, some patients reported significant psychological distress when their post-insufflation distension symptoms were “ignored” or “minimized.” Acupoint massage, as a highly professional and interactive intervention, allows continuous inquiry and attention to patients’ subjective feelings during the procedure, enabling them to genuinely experience the care and dedication of nursing staff and thereby enhancing trust in nursing care. Simultaneously, as gas is rapidly expelled and distension is eliminated or significantly reduced, patients’ recognition of overall nursing quality naturally improves.

This study utilized cumin coarse salt heat packages instead of traditional Chinese medicine hot compresses, offering significant cost advantages. Traditional herbal hot compresses are expensive and carry allergy risks, whereas cumin coarse salt heat packages have low material costs per use and extremely low allergy incidence, providing better safety and suitability for widespread application in primary healthcare institutions.

Our acupoint massage protocol simplified acupoint selection to Zhigou (TE6) and Jianshi (PC5), which are simple to operate and demonstrate clear efficacy. Zhigou belongs to the Hand Shaoyang Sanjiao meridian, located 3 cun above the wrist dorsal crease between the radius and ulna, and functions to regulate Sanjiao qi and promote intestinal peristalsis. Jianshi belongs to the Hand Jueyin Pericardium meridian, located 3 cun above the wrist crease between the palmaris longus and flexor carpi radialis tendons, and has the effects of regu-

lating qi, relieving pain, and harmonizing the stomach. These two acupoints, one internal and one external, complementing yin and yang, can regulate gastrointestinal function, promote intestinal peristalsis, accelerate gas expulsion, and relieve distension and pain through meridian transmission and neural reflex mechanisms after massage stimulation [17-18].

The pharmacological actions of the cumin coarse salt heat package are well-defined in traditional Chinese medicine. According to the *Tang Herbal*, cumin is warm and pungent, entering the spleen and stomach meridians, with effects of warming the middle, dispersing cold, moving qi, and relieving pain, as well as warming the kidney and harmonizing the stomach. The *Compendium of Materia Medica* records that salt enters the stomach and kidney meridians, with effects of activating blood and dredging collaterals and guiding herbs into the meridians. Heated coarse salt provides persistent and stable thermal effects, effectively dilating local capillaries and promoting local blood circulation and transdermal drug absorption. Combining cumin with coarse salt in a heat package and applying it to acupoints such as Shenque and Tianshu through hot compress can effectively exert synergistic effects of herbal medicine and heat, achieving the therapeutic goals of warming meridians, dispersing cold, moving qi and blood, strengthening the spleen and stomach, and reducing distension [19-21].

Furthermore, this study's protocol features standardized 操作流程 (operational procedures), with heat package temperature controlled at $55\pm 1^{\circ}\text{C}$ and moderate acupoint massage pressure, providing clear and easily mastered procedures for standardized clinical implementation. Although the single intervention duration is slightly longer than routine care, the standardized process does not significantly increase nursing workload but rather enhances the professionalism of nursing operations and patient satisfaction.

However, this study has several limitations. First, as a single-center study, the sample size is relatively limited and does not include special populations (such as elderly or obese patients). Second, the follow-up period was short, lacking observation of long-term efficacy. Third, the study did not explore the effects on biological indicators such as gastrointestinal hormones. These shortcomings warrant improvement in future research.

This study confirms that acupoint massage combined with cumin coarse salt heat package can safely and effectively improve abdominal distension and pain symptoms in patients after painless colonoscopy, enhancing comfort and satisfaction. The protocol offers advantages of standardized operation, low cost, and reliable safety, demonstrating significant clinical application value. Future multi-center randomized controlled studies are recommended to further verify its long-term efficacy and explore individualized treatment protocols, providing stronger evidence-based support for post-painless colonoscopy nursing care.

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