Effect of nursing intervention on early rehabilitation of patients with abdominal surgery

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ABSTRACT

Objective: To study effect of nursing intervention on early rehabilitation of patients with abdominal surgery. Methods: A total of 90 patients with abdominal surgery were randomly divided into observation group and control group by half. Patients in the control group were given routine nursing care, observation group given conventional gum chewing training and anal contraction movements. Results: In the observation group anal exhaust time, indwelling gastric tube and catheter time defecate, eating time, hospitalization days were significantly reduced compared with controls (p<0.05). There was no significant difference in postoperative analgesia time, incidence of nausea and vomiting, complications between two groups (p > 0.05). Conclusions: Strengthened perioperative nursing, gum chewing training and anal contraction movements can promote gastrointestinal functional recovery after abdominal surgery. It can shorten hospitalization time, reduce the patients’ pain. It is safety, effective and worthy clinical application.

1. Introduction

Gastrointestinal surgery patients, due to the attenuation of gastrointestinal peristalsis, are prone to abdominal distension, indigestion, exhaust, defecation difficulties and other symptoms of gastrointestinal disorders[1]. It affects postoperative quality of life, prolong length of stay, and increase medical cost, therefore promoting early gastrointestinal function recovery is the key to recovery in patients undergoing gastrointestinal surgery. For surgical patients, especially for patient with gastrointestinal surgery, gum chewing can prevent paralytic ileus (POI) significantly, which belongs to treatment to accelerate perioperative rehabilitation[2]. In this study, we performed gum chewing to stimulate cephalic vagal, which caused neurotransmitter release and glandular secretion; and also carried out anal contraction movements to make the anus levator muscle contraction and relaxation direct and indirect holding the rectum pulling movement and promote intestinal peristalsis, so as to promote the recovery of gastrointestinal function, early exhaust and defecation.

2. Materials and methods

2.1. General information

From January 2012 to, 90 cases of patients including 58 males and 32 females, aged 15-84 years old, mean age (41.6 ± 12.1) years old, were selected from December 2015 to in our hospital. The patients were divided into the experimental group and the control group by the random number table method, 45 cases in each group. Intravenous combined general anesthesia was performed. After the operation, the nursing work was completed by the same nursing team.

2.2. Inclusion criteria and exclusion criteria

Inclusion criteria were as follows: (1) patients who underwent open surgery for gastric intestinal tract; (2) aged 15-81 years old; (3) had the ability to chew; (4) to be able to shrink the anal.

Exclusion criteria were as follows: (1) non gastrointestinal surgery patients; (2) a previous history of abdominal surgery; (3) the function of important organs; (4) patients with complications of diabetes, liver cirrhosis, cardiovascular, lung, and (5) mechanical intestinal obstruction patients; (6) fecal loss no patients.

2.3. Nursing measures after operation

Two hours after anesthesia, patients in experimental group started to chew xylitol gum, 2-3 capsules each time, every 20-30 minutes, 2-3 hours a day at a time, until the anal exhaust; at the same time starting from the first postoperative day they had anal contraction movements, every 20-30 minutes, 2-3 hours once every day. The control group had routine fasting, or had other traditional methods such as exhaust.
2.4. Observation index

Postoperative anal exhaust time for the first time, the first defecation time and feeding time for the first time, indwelling gastric tube and catheter time, duration of analgesia and the incidence of nausea and vomiting, complication rate, hospitalization time were observed and compared. One week after discharge from the hospital, the patients were followed up to find out the condition of the patient’s recovery after operation.

2.5. Statistical analysis

SPSS16.0 statistical software package was used for analysis, the comparison between groups was performed by using analysis of variance. When \( p < 0.05 \), average number of two groups were compared with \( Q \) test. Results were expressed as mean ± standard deviation (s), and it indicated that there was statistical significant difference when \( p < 0.05 \).

3. Results

Table 1
Postoperative anal exhaust and defecation time, indwelling gastric tube indwelling time, eating time, hospitalization time.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Anal exhaust time (h)</th>
<th>Defecation time (h)</th>
<th>Tube indwelling time (h)</th>
<th>Indwelling catheter time (h)</th>
<th>Feeding time (h)</th>
<th>Length of stay (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>38.0±16.1*</td>
<td>61.3±17.2*</td>
<td>40.1±10.4*</td>
<td>18.1±9.7*</td>
<td>58.7±26.7*</td>
<td>7.2±3.7*</td>
</tr>
</tbody>
</table>
| Control group | 45.7±14.2             | 72.6±14.4           | 47.8±11.3                | 24.9±8.6                    | 69.7±20.5       | 9.9±3.3           

* \( p < 0.05 \) vs. Control group.

Table 2
Postoperative analgesia time, incidence of nausea and vomiting and complications after operation.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Analgesia time (h)</th>
<th>The incidence of nausea and vomiting (%)</th>
<th>The complication rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>12.6±10.1*</td>
<td>33.1±7.8*</td>
<td>6.5±3.3*</td>
</tr>
<tr>
<td>Control group</td>
<td>13.1±9.9</td>
<td>34.6±8.2</td>
<td>6.9±4.4</td>
</tr>
</tbody>
</table>

* \( p > 0.05 \) vs. Control group.

4. Discussion

POI is a common complication after gastrointestinal surgery, due to severe changes in the nerve, body fluid and metabolism (such as low potassium)[3]. The main mechanism including postoperative gastrointestinal electrophysiological dysfunction; inhibition of excessive stimulation of the nerve reflex; invasive surgical operation in all kinds of inflammatory medium release, vascular excessive congestion caused by intestinal edema; opioid anesthesia effect[4]. So the promoting restore of gastrointestinal function is important and traditional postoperative nursing measures mainly include:

- anus exhaust, gastric motility drug, and postoperative early xylitol gum chewing, which is based on the principle of sham feeding (sham feeding)[5], and can promote the recovery of gastrointestinal function after gastrointestinal surgery. The main mechanism of gum chewing is simulating food intake, promoting gastrointestinal peristalsis. By stimulation vagus nerve, the gastrointestinal hormone secretion is increased to promote gastrointestinal peristalsis. Xylitol itself has effect on gastrointestinal motility and has osmotic laxatives effects[6]. Because the patient only have mouth chewing movement, have no food into the intestines, which will not increase the burden on the gastrointestinal tract[7], and does not cause any adverse reactions and complications. Postoperative anal contraction movement can promote the overall release of direct and indirect rectum stretch exercise, promote intestinal peristalsis; it can help patients take relaxed posture, guide the patients with deep breathing exercise, maintain a pleasant mood, increase blood circulation, enhance the gastrointestinal motility and secretion of digestive juice; the lever ani muscle movement can improve the perineum blood circulation, enhance tissue metabolism, and is help to the recovery of postoperative anal exhaust time in advance. It can relieve abdominal distension, abdominal pain and other symptoms, reduce postoperative pain in elderly patients with gastrointestinal, decrease occurrence of pain and intestinal adhesion, and promote postoperative rehabilitation. But patients should be observed as chewing. Under conditions, such as nausea, vomiting, abdominal pain, bloating, chewing should immediately stopped. If patients with mechanical intestinal obstruction are unable to chew gum, we should inform the patient to prevent from chewing gum.

The results of this study suggest that after application of xylitol gum chewing, anal contraction movement the first anal exhaust time, first defecation time, eating time, hospitalization time are improved better than the control group (\( p < 0.05 \)). To sum up, after gastrointestinal surgery, at the early stage, xylitol gum chewing and anal contraction movement can promote the early recovery of gastrointestinal function, and the rehabilitation of patients. It is safe and effective, simple and economic. It can shorten the time of hospitalization, reduce hospitalization costs, and it is widely used in clinical practice.

References