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Review Article

Validity of comfortable nursing after radical gastrectomy and its effect on quality of life

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Abstract: Gastric cancer is a leading cause of cancer deaths worldwide, and currently its major therapeutic method is radical gastrectomy, but there are few studies on the validity of comfortable nursing after radical gastrectomy and its effect on patients' quality of life. This paper aimed to explore the application effect of comfortable nursing after radical gastrectomy and its effect on patients' quality of life (QOL). Eighty-seven patients undergoing radical gastrectomy admitted to our hospital were enrolled, grouped into a comfortable nursing group (47 cases; CN group) and a routine nursing group (40 cases; RN group) based on nursing methods. They were compared with respect to their postoperative recovery, hospitalization, psychological states, nursing satisfaction, postoperative pain, QOL, and incidence of complications. Compared with the RN group, patients in the CN group had significantly better postoperative recovery, hospitalization time, pain severity, total satisfaction, and incidence of complications ($P<0.05$). After nursing, Self-Rating Anxiety Scale (SAS) score and Self-Rating Depression Scale (SDS) score reduced and scores of QOL rose in the CN group more significantly. In conclusion, comfortable nursing can improve the QOL of patients undergoing radical gastrectomy, so it is worthy of clinical promotion.

Keywords: Comfortable nursing, radical gastrectomy, quality of life, nursing satisfaction

Introduction

As an invasive cancer occurring in the stomach, gastric cancer is a major cause of cancer deaths worldwide, ranking fourth in cancer incidence and second in mortality rate [1]. According to statistics, there are approximately 410,000 new cases and approximately 290,000 deaths in China every year [2]. Therefore, the treatment of the disease has long been one of the most difficult challenges faced by clinicians and researchers [3]. Although there are currently many therapeutic schemes for the disease whose overall treatment methods are also developing rapidly, radical resection remains the main method for treating it and the only possible way to cure it [4, 5].

With changes in medical model and the improvement of quality of life (QOL), comfortable nursing has gradually been applied to clinical practice in modern nursing [6]. Its extensive application has realized effects of routine nursing and nursing for patients' spiritual level, conducive to their emotional stability and confidence establishment [7]. As a new and increasingly applied service mode in modern nursing science, this mode advocates the service concept of "people-oriented" and puts more emphasis on it on the basis of traditional nursing mode. Preoperative, intraoperative, and postoperative comfortable nursing makes patients feel comfortable both mentally and physically, so it is of great significance to improve their physiological and psychological changes after operation and ensure the therapeutic effect [8, 9]. Radical gastrectomy, a commonly used surgical method for clinically treating early gastric cancer, can eradicate lesions, but it causes large body trauma and has high incidence of postoperative complications. Therefore, effective nursing intervention for patients has an important clinical value [10-12].

In this study, the application effect of comfortable nursing after radical gastrectomy and its effect on patients' QOL were explored, so as to provide reference for clinical practice.

Materials and methods

General information

Eighty-seven patients undergoing radical gastrectomy admitted to our hospital from July 2018 to July 2019 were enrolled as the research objects, grouped into the comfortable nursing group (47 cases; CN group) and the routine nursing group (40 cases; RN group) based on nursing methods. The CN group consisted of 25 males and 22 females, who were aged 34-65 years, with an average age of 40.1±2.7 years, course of disease of 5-11 months, and an average course of disease of 5.5±1.3 months. The RN group consisted of 22 males and 18 females, who were aged 33-63 years, with an average age of 39.7±1.8 years, course of disease of 6-10 months, and an average course of disease of 5.8±1.5 months. All patients were confirmed with gastric cancer by pathological diagnosis and underwent radical gastrectomy for treatment. This study was approved by the ethics committee of our hospital. All subjects were informed of this study and signed an informed consent form. Inclusion criteria: Patients who voluntarily accepted the experiment; patients confirmed with gastric cancer by pathological examination; patients younger than 70 years old. Exclusion criteria: patients complicated with severe hepatic and renal insufficiency, autoimmune diseases, or other malignant tumors; patients accompanied by congenital heart diseases; patients with severe autoimmune diseases; patients accompanied by severe allergic reactions or severe blood cell abnormalities; patients with mental diseases who could not cooperate in surgery.

Nursing methods

Patients in the RN group were routinely nursed. Before operation, the nursing staff assisted the patients to receive relevant examinations, prepared for the operation, and strengthened health education, as well as explained relevant matters needing attention. During operation, the staff guided them patiently to cooperate in the operation, operating in strict accordance with aseptic principle. After operation, the staff did a good job of dietary nursing and disease observation. On this basis, patients in the CN group were given comfortable nursing. (1) Strengthening psychological counseling: before operation, the nursing staff actively communicated with the patients, mastered their psychological characteristics, and implemented individual psychological counseling measures, so that they could receive treatment in a positive state. The staff also explained the contents, advantages, objectives, precautions, and complications of the operation to patients and their families, so as to gain their trust and support, make good psychological preparations, and avoid increasing the patients' physiological and psychological stress responses due to negative emotions. After operation, the staff informed the patients of the operation situation in time, answered their questions patiently, and helped them relieve their postoperative tension and anxiety, thereby helping them relieve their postoperative pain. (2) Pain nursing: after operation, the patients' pain assessment was performed based on the pain grading standards formulated by the World Health Organization (WHO). The nursing staff created a good hospitalization environment for the patients, guided them to breathe correctly, and carried out hot compress on local areas, or relieved their postoperative pain through attention diversion (reading humorous stories or watching humorous videos). (3) Complications nursing: at early period after operation, nutritional support was given for the patients, whose catheters were regularly cleaned to reduce the incidence of postoperative infection. After operation, the nursing staff guided the patients to excrete sputum correctly for keeping their respiratory tract unobstructed, and made records of gastric tube drainage. Any abnormal situation was reported to the doctor in time for symptomatic treatment. The staff supervised and guided the patients to fast. After passage of gas by anus, they were allowed to eat liquid food first and then common food. (4) Other nursing: after operation, the nursing staff assisted the patients to take a proper position, and raised their upper body slightly to reduce abdominal tension. The staff also assisted them to get out of bed early for activities and to shorten the recovery time of gastrointestinal function, thereby reducing the incidence of complications such as intestinal adhesion and obstruction. In addition, the staff carried out continu-

Table 1. Comparison of recovery after nursing ($\bar{x}$±sd)

Groups	n	Anal exhaust time (d)	Gastric tube extraction time (d)	Time to get out of bed (d)
CN group	47	1.14±0.19	3.24±0.52	5.12±0.58
RN group	40	2.38±0.48	5.31±0.45	6.98±0.88
t	-	16.290	19.670	11.790
P	-	<0.001	<0.001	<0.001

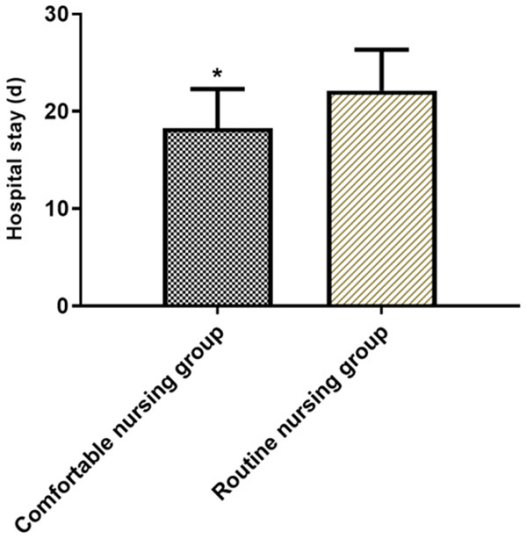

Figure 1. Comparison of hospitalization. The hospitalization time in the CN group was significantly shorter than that in the RN group (P<0.05). Note: * indicates P<0.05 compared with the RN group.

ous health education to the patients, so that they could understand the necessity and significance of follow-up treatment and improve their coordination of the treatment.

Outcome measures

Patients in the two groups were compared in terms of their postoperative recovery (anal exhaust time, gastric tube extraction time, time to get out of bed) and hospitalization. Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS) were used to assess the patients' anxiety and depression [13]. The pain grading standards from the WHO were used to assess the patients' postoperative pain. No pain was grade 0; tolerable slight pain was grade 1; tolerable obvious pain was grade 2; intolerable severe pain was grade 3 [14]. The complications were compared between the two groups. 36-Item Short-Form Health Survey (SF-36) was used to evaluate the patients' QOL, including social, physical, role, and cognitive dimensions. Each dimension had 0-100 points, and a high score indicated better QOL. Patients in the two groups were compared with respect to their nursing satisfaction, QOL, and incidence of complications [15]. The self-made nursing satisfaction survey and evaluation form was used to investigate the patients' nursing satisfaction, which was divided into satisfied, generally satisfied, and dissatisfied. The nursing service satisfaction questionnaire developed by Aiken and others [16] was used to anonymously score the patients' nursing satisfaction on discharge. The questionnaire consisted of 15 items, with a full score of 90 points. Each item was divided into satisfied (6 points), improved (3 points), and dissatisfied (1 point).

Statistical analysis

The data were statistically analyzed by SPSS22.0. Measurement data were expressed by mean ± standard deviation ($\bar{x}$±sd) and analyzed by t test. Count data were expressed by % and analyzed by χ^2 test. When P<0.05, the difference was statistically significant.

Results

Comparison of recovery after nursing

According to the relevant indicators of recovery after nursing, compared with the RN group, patients in the CN group had significantly shorter anal exhaust time, gastric tube extraction time, and time to get out of bed (P<0.05). See **Table 1**.

Comparison of hospitalization

According to the statistics of hospitalization time, the time in the CN group was obviously shorter compared with the RN group (P<0.05). See **Figure 1**.

Comparison of pain severity

The patients' pain severity was graded and recorded. In the CN group, there were 24 cases

Table 2. Comparison of pain severity [n (%)]

Groups	n	Grade 0	Grade 1	Grade 2	Grade 3
CN group	47	24 (51.06)	17 (36.17)	4 (8.51)	2 (4.26)
RN group	40	12 (30.00)	18 (45.00)	5 (12.50)	5 (12.50)
Z	-		-2.146		
P	-		0.032		

Table 3. Comparison of SAS and SDS scores before and after nursing ($\bar{x}$±sd)

Groups	SDS score		SAS score	
	Before nursing	After nursing	Before nursing	After nursing
CN group (n=47)	51.64±4.01	23.97±3.84*	56.37±5.22	25.86±3.20*
RN group (n=40)	52.19±3.81	36.92±3.46*	55.94±4.15	39.46±4.97*
t	0.655	16.540	0.428	14.870
P	0.514	<0.001	0.670	<0.001

Note: *indicates P<0.05 compared with before nursing.

(51.06%) of grade 0 pain, 17 cases (36.17%) of grade 1 pain, 4 cases (8.51%) of grade 2 pain, and 2 cases (4.26%) of grade 3 pain. In the RN group, there were 12 cases (30.00%) of grade 0 pain, 18 cases (45.00%) of grade 1 pain, 5 cases (12.50%) of grade 2 pain, and 5 cases (12.50%) of grade 3 pain. According to Mann-whitneyU rank sum test, the pain severity in the CN group was obviously lighter than that in the RN group (P<0.05). See **Table 2**.

SAS and SDS scores before and after nursing

Before nursing, the differences were not statistically significant in SAS and SDS scores between the CN and RN groups (P>0.05). After nursing, the two scores in the two groups were significantly reduced (P<0.05), and the scores in the CN group were significantly lower than those in the RN group (P<0.05). Therefore, the reduction in the SAS and SDS scores in the CN group was more significant compared with before nursing. See **Table 3** and **Figure 2**.

Comparison of nursing satisfaction

According to the classification and recording of nursing satisfaction, 26 cases (55.32%) were satisfied, 19 cases (40.42%) were generally satisfied, and 2 cases (4.26%) were dissatisfied in the CN group, while 13 cases (32.50%) were satisfied, 18 cases (45.00%) were generally satisfied, and 9 cases (22.50%) were dissatisfied in the RN group. The satisfied and generally satisfied rates were the total satisfaction rate. According to the χ^2 test, the total satisfaction rate in the CN group was higher than that in the RN group (P<0.05). See **Table 4**.

Comparison of incidence of complications

The patients' complications were observed and recorded. In the CN group, 2 cases (4.25%) had incision infection, 0 case (0.00%) had pulmonary infection, 0 case (0.00%) had anastomotic fistula, and 1 case (2.13%) had adhesive intestinal obstruction, with the incidence of complications of 6.38%. In the RN group, 3 cases (7.50%) had incision infection, 4 cases (10.00%) had pulmonary infection, 2 cases (5.00%) had anastomotic fistula, and 3 cases (7.50%) had adhesive intestinal obstruction, with the incidence of complications of 30.00%. According to the χ^2 test, the incidence of complications in the CN group was significantly lower than that in the RN group (P<0.05). See **Table 5**.

Comparison of QOL scores

Before nursing, the differences were not statistically significant between the CN and RN groups in terms of social, physical, role, and cognitive function scores (P>0.05). After nursing, the four scores in the two groups were significantly increased (P<0.05), and the scores in the CN group were significantly higher than those in the RN group (P<0.05). Therefore, the increase in the scores of social, physical, role, and cognitive functions in the CN group was more significant compared with before nursing. See **Table 6**.

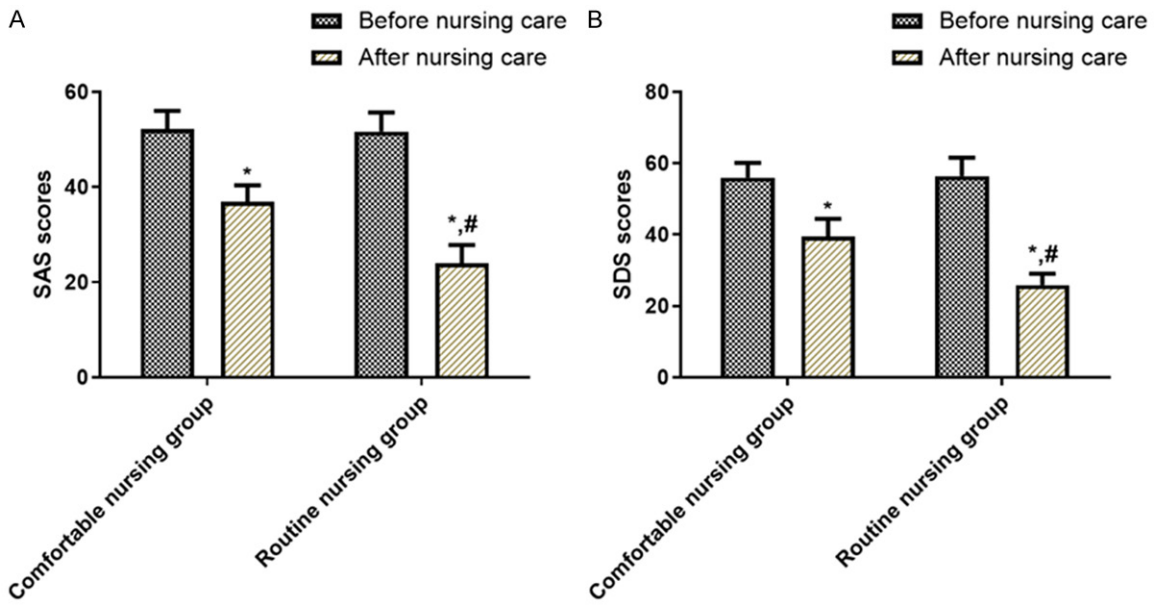

Figure 2. Comparison of SAS and SDS scores before and after nursing. The comparison of SAS score before and after nursing between the CN and RN groups (A). Before nursing, the difference was not statistically significant in SAS score between the two groups (P>0.05). After nursing, the score in the two groups was significantly reduced (P<0.05), and the reduction was more significant in the CN group (P<0.05). The comparison of SDS score before and after nursing between the CN and RN groups (B). Before nursing, the difference was not statistically significant in SDS score between the two groups (P>0.05). After nursing, the score in the two groups was significantly reduced (P<0.05), and the reduction was more significant in the CN group (P<0.05). Note: * indicates P<0.05 compared with before nursing. # indicates P<0.05 compared with the CN group after nursing.

Table 4. Comparison of nursing satisfaction [n (%)]

Groups	n	Satisfied	Generally satisfied	Dissatisfied	Total satisfaction rate
CN group	47	26 (55.32)	19 (40.42)	2 (4.26)	45 (95.74)
RN group	40	13 (32.50)	18 (45.00)	9 (22.50)	31 (77.50)
χ^2	-		-		6.512
P	-		-		0.011

Table 5. Comparison of incidence of complications [n (%)]

Groups	n	Incision infection	Pulmonary infection	Anastomotic fistula	Adhesive intestinal obstruction	Incidence of complications
CN group	47	2 (4.25)	0 (0.00)	0 (0.00)	1 (2.13)	3 (6.38)
RN group	40	3 (7.50)	4 (10.00)	2 (5.00)	3 (7.50)	12 (30.00)
χ^2	-			-		8.447
P	-			-		0.004

Table 6. Comparison of QOL scores before and after nursing ($\bar{x}\pm sd$)

Groups	Social function		Physical function		Role function		Cognitive function	
	Before nursing	After nursing	Before nursing	After nursing	Before nursing	After nursing	Before nursing	After nursing
CN group (n=47)	66.54±3.21	78.01±4.72*	67.21±3.65	80.02±2.44*	64.89±3.43	81.66±3.03*	64.45±2.86	81.94±3.12*
RN group (n=40)	65.78±3.94	71.42±4.36*	66.56±2.30	72.23±3.73*	63.97±4.86	73.20±4.78*	65.62±3.88	73.16±5.21*
t	0.9914	6.72	0.9733	11.68	1.031	10	1.616	9.695
P	0.3243	<0.001	0.3331	<0.001	0.3054	<0.001	0.1099	<0.001

Note: *indicates P<0.05 compared with before nursing.

Discussion

Gastric cancer is a malignant tumor with high incidence and an extremely low 5-year survival rate [17]. Radical gastrectomy for patients with early gastric cancer can remove primary lesions of the stomach and excise the involved lymph node tissue at the same time. However, patients undergoing surgery experience obvious physiological and psychological stress responses, with high incidence of postoperative complications. Therefore, effective nursing intervention is crucial to improve their stress state, reduce the incidence of complications, and promote their postoperative rehabilitation [18-20].

Nursing staff in routine nursing only follow the doctor's advice to complete their nursing tasks, while those in modern nursing science pay more attention to personalized nursing intervention, so that the patients can reach an optimal state in physiology and psychology, which is conducive to their recovery [21, 22]. As a relatively novel clinical nursing mode, comfortable nursing takes patients' physical and mental health as its nursing goal, and requires nursing staff to have good communication with the patients from psychological, physiological, social, and personality aspects. The implementation of patient-centered comfortable nursing before, during, and after operation exerts a greater function in improving the patients' cooperation, reducing their postoperative complications, and improving nursing quality and satisfaction [23-25]. We compared the effects of comfortable and routine nursing on patients undergoing radical gastrectomy, and found that patients in the CN group had better recovery and significantly shorter hospitalization time after nursing. This indicates that comfortable nursing is beneficial to the recovery of patients undergoing radical gastrectomy. The occurrence of complications such as postoperative hemorrhage and intestinal obstruction is directly related to nursing quality. Compared with the RN group, patients in the CN group had significantly lower incidence of complications, significantly lighter pain, and significantly higher total satisfaction. This suggests that comfortable nursing can significantly improve the patients' prognosis and QOL. Conducive to closing nurse-patient relationship, comfortable nursing avoids harm caused by focusing only on single body pathological treatment but not on psychological emotion, as well as promotes the good communication and the harmonious relationship between nurses and patients. Therefore, this mode improves the personality of patients with gastric cancer during treatment, helps them actively cooperate in treatment, and improves their QOL, as well as improves nursing quality while benefiting the patients more. In this study, the satisfaction rate in the CN group was significantly higher than that in the RN group after nursing ($P<0.05$). Additionally, the reduction in the SAS and SDS scores in the CN group was more significant compared with before nursing. These findings reveal that comfortable nursing with strong feasibility for patients undergoing radical gastrectomy can relieve their anxiety, largely eliminate their negative emotions, and help them establish confidence in life.

In summary, comfortable nursing can improve the QOL of patients undergoing radical gastrectomy, optimize the nursing effect, and improve their psychological states and nursing satisfaction, so it is widely recommended in clinical practice.

Disclosure of conflict of interest

None.

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