

Application of Integrated Nursing in Minimally Invasive Rotatory Resection for Multiple Breast Tumors

Xiaohui Chen* and Yanyan Gong

Department of Nursing, Zhejiang University, Hangzhou, China

Corresponding author: Xiaohui Chen, Department of Nursing, Zhejiang University, Hangzhou, China, E-mail: 510383408@qq.com

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Abstract

Objective/Purpose: The objective of this study is to investigate the application of integrated nursing in the minimally invasive rotatory resection for multiple breast tumors.

Method: A multicenter, prospective research strategy was adopted to recruit a specific number of patients who underwent minimally invasive rotatory resection for multiple breast tumors. This approach involved providing systematic and individualized treatment to the patients.

Results: The application of integrated nursing measures has resulted in reducing surgery time, enhancement of surgical results, mitigation of surgical complications and facilitation of patient recovery. The incidence of postoperative hemorrhage and infection is decreased. Furthermore, research has demonstrated that integrated nursing can enhance patients' psychological well-being and elevate their satisfaction and overall quality of life.

Conclusion: The results of this study suggest that integrated nursing has wide-ranging potential in the use of minimally invasive rotatory resection for multiple breast tumors, and it can offer excellent nursing solutions for minimally invasive clinical breast surgery.

Keywords: Integrated nursing; Minimally invasive rotatory resection for multiple breast masses; Surgical effect; Reduced complications; Rehabilitation promotion; Satisfaction improvement

implementing integrated nursing, healthcare professionals can effectively address the physiological, psychological and social requirements integrated of patients, leading to enhanced patient satisfaction and increased quality of life [3]. We can collect and evaluate clinical data from patients and their feedback *via* satisfaction surveys to assess the practical implementation of integrated nursing in minimally invasive breast surgery. This study aimed to assess the impact of integrated nursing during the perioperative phase on the implementation of minimally invasive rotatory resection in 100 patients with Benign breast cancers at our institution.

Inclusion criteria

(1) A solid or intricate cystic mass was verified through a breast ultrasound examination; (2) Ultrasound imaging revealed focal or suspicious micro calcifications, indicating severe proliferative lesions; (3) Molybdenum target examination revealed distortion of the breast structure and ultrasound indicates highly suspicious malignant breast tumors; (4) New lesions have appeared around the incision site following breast-conserving surgery.

Exclusion criteria

(1) A lesion with a diameter greater than 3 cm; (2) A condition affecting the hematopoietic system, including an abnormal tendency to hemorrhage or hematopoietic abnormalities; (3) Being pregnant or nursing; Patients suffering from infectious diseases, mental illness, suspicious breast hemangiomas, small breasts (affected breast volume <100 ml), lesions close to the nipple (<1 cm away from the nipple base), axillary or chest wall lesions that were difficult to remove fully and individuals with breast implants are among the mentioned categories.

Introduction

Due to advancements in medical technology and the widespread adoption of minimally invasive breast surgery, it has become a prevalent approach for treating breast illnesses. Nevertheless, the nursing responsibilities associated with minimally invasive breast surgery are gaining significance. The integrated nursing has garnered increasing interest from clinical practitioners due to its potential to enhance patient recovery, mitigate surgical risks and optimize surgical results [1,2]. By

Materials and Methods

General information

A cohort of patients who received minimally invasive rotatory resection for multiple breast tumors at Shangyu Maternal and Child Health Hospital in Shaoxing City between April 2022 and February 2023 were included in the study. They were randomly

assigned to either an observation group (50 cases) or a control group (50 cases) (**Table 1**).

Table 1: General information of patients.

| Age (years) | Duration of disease (months) | Tumor diameter (cm) |
|--|------------------------------|---------------------|
| Observation group 30~60, 44.84 ± 8.36 | 9.70 ± 4.46 (2~21 months) | 0.95 ± 0.53 |
| Control group 31~60, 45.20 ± 7.26 | 9.96 ± 5.12 (2~20 months) | 0.98 ± 0.62 |

The control group consisted of 7 cases of fibrous hyperplasia, 41 cases of breast fibro adenoma and 2 cases of other conditions. The observation group comprised 9 cases of fibrous hyperplasia, 39 cases of breast fibro adenoma and 2 others. Patients suffering from organ problems, mental disorders and unconscious conditions were not included. The two groups of general data showed no statistically significant difference ($P>0.05$), indicating that they are comparable. The Medical Ethics Committee of our hospital has authorized this study.

Research methods

The control group was managed by traditional nursing quality standards: The care provided to the control group consisted of the following: (1) Preoperative education to enhance understanding of the disease and operation-related knowledge; (2) Preoperative basic nursing in the ward; (3) Attentive and high-quality intraoperative nursing services in the operating room; (4) Standard postoperative nursing care and psychological counseling.

The observation group adopted an integrated nursing model of quality management: The care provided to the observation group was as follows: (1) A cohesive medical and nursing team was formed to operate in the surgical ward. The breast surgery team consisted of one chief physician, a deputy chief physician and an assistant chief physician. The nursing staff included four head nurses and four nurses; (2) Formulated an all-encompassing workflow strategy, which doctors and nurses critically examined and deliberated upon together; (3) Tailored emotional counseling, psychological counseling, and health education; (4) Demonstrated adept collaboration in adhering to the operating room's standard quality protocols and consistently monitored patients' psychological fluctuations.

Observation indicators and evaluation criteria: The following criteria were included.

- **Evaluation criteria for incision healing (0–3 points):** Grade A (3 points) denotes the initial healing of a well-healed incision without any negative reactions such as redness, swelling, or hardening; Grade B (2 points) indicates inadequate wound healing, with redness, swelling and hardening at the wound site, but without the presence of pus; Grade C (0 points) signifies a pus-filled and cracked incision. Higher scores correspond to superior healing outcomes.
- **Visual Analogue Scale (VAS) (0–10 points):** The VAS is described as follows, 0 points: Painless; less than 3 points: Tolerable mild

pain; From 4 to 6 points: Soreness that disrupts sleep but may still be endured; Scoring between 7 and 10 points on the pain scale corresponds to experiencing severe and unendurable pain that significantly impacts one's appetite and sleep.

- **Self-Rating Anxiety Scale (SAS):** SAS consists of a collection of 20 items. The standard score is derived by multiplying the overall score by 1.25, resulting in an integer value. A standard score below 50 is regarded within the normal range; A score ranging from 50 to 60 is categorized as mild, while a score ranging from 61 to 70 is classified as moderate. A score of 70 or higher is deemed severe. The SAS was assessed preoperatively and postoperatively. As the score increases, the severity of anxiety and sadness also increases.
- **Nursing attitude satisfaction:** A questionnaire survey was conducted with a total score of 100. The higher the score, the better the relevant indicators [4].

Statistical methods: Data processing was performed using the statistical software SPSS 22.0. The quantitative data were presented as mean ± standard deviation ($\bar{x} \pm s$), t-test (normal distribution), or rank sum test (non-normal distribution), whereas the count data were analyzed using the χ^2 test (n (%)). A statistically significant difference was defined as $P<0.05$.

Results

Comparison of wound healing evaluation between two groups

The assessment of wound healing in the observation group exhibited a significantly greater outcome than the control group, whereas the occurrence of complications in the observation group was significantly lower than that in the control group, with statistical significance ($P<0.05$). **Table 2** depicts the analysis.

Table 2: Comparison of incision healing evaluation.

| | Grade A | Grade B | Grade C |
|---------------------------|---------|---------|---------|
| Observation group n=50 | 49 | 1 | 0 |
| Control group N=50 | 42 | 8 | 0 |
| Total | 91 | 9 | 0 |
| χ^2 | | 4.3956 | |
| P value | | <0.05 | |

Comparison of VAS pain scores between two groups

The pain scores of the observation group exhibited a considerable decrease compared to those of the control group, with a statistically significant difference ($P<0.05$). **Table 3** shows the analysis.

Table 3: Comparison of VAS pain scores between two groups.

| Group | VAS score |
|--------------------------|-------------|
| Observation group (n=50) | 1.04 ± 0.19 |
| Control group (n=50) | 1.24 ± 0.51 |
| t value | 2.55 |
| P value | <0.05 |

Comparison of SAS scores between two groups

There was no statistically significant difference in the Subjective Assessment Score (SAS) between the two groups ($P>0.05$). The postoperative SAS scores of the observation group were markedly lower than the control group, with a statistically significant difference ($P<0.05$). The postoperative SAS scores of both the observation and control groups were lower than their preoperative scores and this difference was statistically significant ($P<0.05$). **Table 4** presents the analysis.

Table 4: Comparison of SAS scores between two groups.

| Group | SAS score | | | |
|--------------------------|----------------|---------------|---------|---------|
| | Before surgery | After surgery | t value | P value |
| Observation group (n=50) | 57.84 ± 3.14 | 44.92 ± 2.26 | 23.56 | <0.05 |
| Control group (n=50) | 58.34 ± 3.42 | 53.68 ± 2.18 | 8.11 | <0.05 |
| t value | 0.76 | 19.69 | | |
| P value | >0.05 | <0.05 | | |

Comparison of satisfaction with nursing attitude and nursing technology between two groups

The nursing attitude and technology in the observation group yielded a higher satisfaction rate than the control group, with a statistically significant difference ($P<0.05$). **Table 5** depicts the analysis.

Table 5: Comparison of satisfaction with nursing attitude and nursing technology between two groups.

| Group | Nursing satisfaction | |
|--------------------------|----------------------|--------------------|
| | Nursing attitude | Nursing technology |
| Observation group (n=50) | 98.84 ± 0.91 | 98.78 ± 0.81 |

| | | |
|----------------------|--------------|--------------|
| Control group (n=50) | 95.28 ± 0.83 | 95.68 ± 1.34 |
| t value | 20.37 | 13.92 |
| P value | <0.05 | <0.05 |

Discussion

Integrated nursing improves the relationship between medical staff and patients

Integrated nursing during minimally invasive breast rotatory resection can offer patients individualized, thorough and uninterrupted nursing care. During the initial phase of surgery, the implementation of integrated nursing can assist patients in getting ready for the procedure. This includes conducting preoperative examinations, providing preoperative education [5] and offering preoperative psychological support. These measures aim to alleviate patients' anxiety, as well as enhance the safety and success rate of the surgery. During the middle and later stages of surgery, the implementation of integrated nursing can promptly and effectively address patients' nursing issues through standardized nursing procedures and comprehensive monitoring measures. This approach offers necessary aid and support, ensuring that patients receive comprehensive attention and care during their postoperative rehabilitation and recovery.

Integrated nursing improves nursing level and medical service quality

Integrated nursing is a comprehensive and individualized nursing model that emphasizes integrating different aspects of nursing work and focuses on patients' physical and mental health needs from all aspects. Integrated nursing in minimally invasive breast surgery can enhance nursing quality and patient satisfaction [6], hence crucial in patients' recovery and psychological well-being. Hence, it is imperative to conduct more research and enhance the implementation of integrated nursing in minimally invasive breast surgery to enhance the standard of nursing care and the quality of medical services [7].

Integrated nursing emphasizes interdisciplinary teamwork and provides comprehensive medical and nursing professional support

Ensuring timely and efficient communication among team members is crucial to providing patients with optimal nursing care. During the postoperative recovery period, the integrated care team will collaborate with the doctor's instructions to perform postoperative evaluations and relevant pathological testing, ensuring effective management of the postoperative condition.

Application of integrated nursing in minimally invasive breast surgery

Application of integrated nursing in the early stage of minimally invasive breast surgery: First, the integrated nursing team communicates with patients to comprehend their conditions, requirements and anticipations. Subsequently, they formulate tailored nursing strategies based on the unique characteristics of each patient. During the initial phase of surgery, integrated nursing offers patients thorough preoperative preparation and education to ensure their comprehension of minimally invasive surgery and their desire to cooperate. Second, integrated nursing offers robust assistance for minimally invasive breast surgery through thorough preoperative assessment and readiness. The interdisciplinary nursing team will gather the patient's medical history, do a physical examination and comprehensively analyze relevant examination findings. Simultaneously, the cohesive nursing team will assess patients' psychological and social aspects and formulate appropriate nursing strategies. Furthermore, the utilization of integrated nursing during the initial phase of minimally invasive breast surgery includes the coordination and organization of preoperative preparation tasks. The cohesive nursing team will collaborate closely with surgeons, anesthesiologists, radiologists and other professionals to formulate precise preoperative readiness strategies, guaranteeing optimal surgical procedure conditions. Ultimately, the integrated care team will offer emotional assistance, alleviate patients' stress and unease and enhance patients' feeling of safety throughout the surgical procedure [8].

Application of integrated nursing in the middle and late stages of minimally invasive breast surgery: In the middle and late stages of minimally invasive breast surgery, integrated nursing focuses on providing meticulous and practical care for patients. Nurses will formulate individualized nursing care plans tailored to the patient's surgical condition and postoperative recovery, ensuring effective patient care. During the procedure, the nurse will utilize sophisticated painless infusion technology to manage the patient's pain effectively. Following surgery, nurses will proactively instruct patients on self-care techniques during the healing process and guide the proper utilization of rehabilitation apparatus to prevent any potential issues. Furthermore, integrated nursing significantly emphasizes interdisciplinary collaboration and offers comprehensive medical and nursing expertise. Ensuring timely and efficient communication among team members is crucial for delivering optimal nursing care to patients. During the postoperative recovery period, the collaborative nursing team will work with the doctor to conduct postoperative reviews and relevant pathological tests to ensure effective management of the patient's postoperative condition.

Conclusion

This study aimed to explore the application of integrated nursing in minimally invasive breast surgery. Through systematic, personalized care for patients, this article finds that integrated nursing has broad application prospects in minimally invasive

breast surgery and can provide effective nursing strategies for clinical minimally invasive breast surgery. This study adopted a multicenter, prospective research methodology and recruited a specific cohort of patients who underwent minimally invasive breast surgery. The following results were derived from the analysis of the collected data: Initially, by using comprehensive nursing interventions, this study discovered a decrease in surgical duration, as well as a mitigation of the likelihood of postoperative hemorrhage and infection. The personalized characteristics of integrated nursing can make personalized nursing plans according to the specific situation of patients, improve the effect of surgery, and reduce the complications of surgery. Second, integrated nursing also plays a positive role in the psychological aspect. Minimally invasive breast surgery elicits significant physiological and psychological stimulation in patients. Ultimately, integrated nursing's psychological measures can enhance patients' psychological well-being, alleviate worry and apprehension and enhance patient satisfaction and overall quality of life.

There are also certain limitations in this study. First, the unique nature and individual variances of minimally invasive breast surgery may influence the study outcomes, as there may be discrepancies among patients and institutions. Therefore, further in-depth investigations are necessary to validate these findings. Hence, future investigations can be extended and broadened by considering the following aspects: Firstly, it is necessary to do further research on various forms of minimally invasive breast surgeries to investigate the extent and efficacy of integrated nursing. Second, there is a need to enhance research efforts in integrated nursing training to enhance the proficiency and practical skills of nurses. By advocating for comprehensive nursing education, the overall quality of care in minimally invasive breast surgery can be enhanced. Finally, conducting long-term follow-up research on minimally invasive breast surgery can provide further validation of the lasting benefits and importance of integrated nursing in the postoperative rehabilitation process.

This study comprehensively examined the implementation of integrated nursing in minimally invasive breast surgery. The findings indicate that integrated nursing holds significant potential for use in this surgical procedure. Additionally, the study proposes future research directions and practical recommendations. We anticipate that the findings of this study can serve as a valuable point of reference and inspiration for the nursing practices involved in minimally invasive breast surgery in clinical settings. Furthermore, we aim for these findings to enhance and recover patients' quality of life significantly.

Statements and Declarations

Funding

None.

Competing interests

No conflict of interest.

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