

Discussion on the Application of Operating Room Nursing in Patients with Uterine Fibroids and Diabetes

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Abstract

Objective: To analyze the application value of surgical nursing in patients with uterine fibroids and diabetes. **Method:** Sixty diabetic patients who agreed to undergo surgery for uterine fibroids at the Sun Yat-sen University Cancer Center from January 2021 to May 2022 were randomly selected as the study subjects. According to criteria such as number of patients, age, nursing methods, and treatment methods, the patients were evenly divided into an observation group and a control group. The control group received routine nursing measures, while the observation group received focused surgical nursing measures based on the routine ones. The blood glucose and blood lipid metabolism status, the incidence of adverse reactions, and nursing satisfaction were compared between the two groups. **Results:** The blood glucose and blood lipid metabolism status of the observation group were safer than those of the control group ($P < 0.05$). The observation group had advantages in terms of the incidence of adverse reactions and nursing satisfaction compared to the control group ($P < 0.05$). **Conclusion:** Systematic surgical nursing for patients with uterine fibroids and diabetes during surgery can help patients control their blood glucose and blood lipid metabolism status, reduce the incidence of adverse reactions, and improve the patient's experience during the treatment stage.

Keywords

Uterine Fibroids, Diabetes, Care, Safety

1. Introduction

Uterine fibroids are benign tumors with a very low chance of malignancy, but this does not mean that they do not have an impact on patients' lives [1] [2].

Currently, surgery is the primary treatment method for uterine fibroids, with medication as a supplementary treatment. This approach can achieve relatively ideal treatment outcomes for uterine fibroids. However, in patients with metabolic diseases such as hypertension, diabetes, and dyslipidemia, it is difficult to predict the treatment effects of surgery. In particular, diabetes patients who undergo major surgery are more prone to adverse reactions during and after the procedure. These adverse reactions may even directly lead to death during or after surgery. In such cases, the significance of treating uterine fibroids is lost. In addition to necessary medication, surgical procedures, and nursing, play an essential role in this situation [3] [4] [5] [6]. With the in-depth research, it is currently believed that when it comes to performing surgery on diabetic patients with uterine fibroids, the first consideration should be the safety of the patient, followed by the effectiveness of the surgical treatment. As medical technology advances, surgical procedures for uterine fibroids have become quite mature. However, ensuring the safety of patients with metabolic diseases such as diabetes during surgery still requires rigorous nursing measures. This article will focus on the aforementioned points as the core and explain the research process regarding the role of operating room nursing in the care of patients with uterine fibroids and diabetes.

2. General Information and Methods

2.1. General Information

A total of 60 diabetic patients who agreed to undergo surgery for uterine fibroids at the Sun Yat-sen University Cancer Center from January 2021 to May 2022 were randomly selected as the study subjects. Based on criteria such as the number of patients, age, nursing methods, and treatment methods, the patients were equally divided into an observation group and a control group. In the observation group, the age ranged from 52.2 to 60.7 years, with an average age of (56.1 ± 2.1) years. The disease progression time ranged from 0.6 to 2.7 years, with an average duration of (2.1 ± 0.3) years. The types of fibroids were as follows: intramural fibroids in 19 cases, subserosal fibroids in 7 cases, and submucosal fibroids in 4 cases. The types of diabetes were as follows: 2 cases of type 1 diabetes and 28 cases of type 2 diabetes. There were 15 cases of early-stage diabetes and 15 cases of mid-stage diabetes. In the control group, the age ranged from 52.8 to 59.9 years, with an average age of (55.8 ± 2.1) years. The disease progression time ranged from 0.9 to 2.4 years, with an average duration of (1.9 ± 0.4) years. The types of fibroids were as follows: intramural fibroids in 20 cases, subserosal fibroids in 6 cases, and submucosal fibroids in 4 cases. The types of diabetes were as follows: 1 case of type 1 diabetes and 29 cases of type 2 diabetes. There were 19 cases of early-stage diabetes and 11 cases of mid-stage diabetes. There were no significant differences in general information between the two groups ($P > 0.05$). According to the survey, none of the patients in both groups had malignant tumors, autoimmune diseases, and mental abnormalities, loss of

communication function, surgical contraindications, late-stage diabetes, or kidney diseases. This study was conducted with the consent of the patients and their families and was approved by the Ethical Committee of our hospital.

2.2. Methods

2.2.1. Control Group

The control group patients receive routine nursing measures.

They are required to refrain from eating or drinking the day before surgery. Patients are instructed to cooperate with the doctor's guidance and undergo preoperative examinations such as blood routine, urine routine, coagulation tests, infection control, electrocardiogram, electrolyte levels, etc., to ensure that the doctor has a comprehensive understanding of the patient's condition. If patients experience mental tension the night before surgery, they can be treated with sedatives to a certain extent, but the use of such medications should be based on the measurement of blood glucose and lipid levels.

During the surgery, nurses assist the anesthesiologist in administering anesthesia measures for the patient. They continuously assess the patient's physical condition through methods such as electrocardiography, blood pressure monitoring, and catheterization, and promptly inform the surgeon in case of any abnormalities.

Postoperatively, pain management is provided for the patient. On the first day after surgery, the patient is taught how to cough effectively, and if necessary, they are given cough suppressants or other medications to alleviate discomfort. Antibiotics may also be administered appropriately to reduce the risk of inflammation in the patient's body.

Additionally, medications such as nebulizers are prepared to facilitate the easy expulsion of phlegm after surgery.

2.2.2. Observation Group

In the observation group, systematic operating room nursing is implemented for patients based on the measures established in the control group blueprint.

Operating room nursing is responsible for ensuring the individual condition of each patient. Upon the patient's entry into the operating room, a brief explanation of the surgical procedure is provided, and the nurse patiently soothes the patient, implementing necessary psychological support to make the patient feel at ease and stabilize their emotions. During the preparation stage of the surgery, the nurse assists the patient in adjusting to the necessary positions, also ensuring the patient's comfort during this stage. Limbs are secured according to the requirements of the surgery to enhance patient comfort, and if necessary, appropriate sedatives are administered to help stabilize the patient's emotions. Assisting the anesthetist in preparing for anesthesia, and helping the doctor adjust the patient's position from the post-anesthesia to the surgical stage. Proper temperature regulation is maintained during the surgery. Throughout the surgery, the nurse assists the doctor in closely monitoring the patient's vital signs, blood glucose levels, and blood gas analysis indicators to promptly identify any ab-

normal signs. Blood pressure and blood glucose levels are measured regularly, and insulin and glucose solutions are administered intravenously as per the doctor's orders to adjust blood glucose levels. During the later stages of the surgery, the nurse assists the doctor in properly managing the incision for the patient, and timely measures are taken when the patient's wound shows signs of swelling.

As the surgery nears its end, when the patient wakes up, they are promptly informed of the surgical situation, and the nurse patiently comforts the patient, guiding them to control their emotions reasonably and avoid adverse reactions after surgery. At the same time, the patient should be informed that some unavoidable adverse reactions may occur within the first day after surgery, and during this stage, the patient needs to cooperate with the nurse to take measures to minimize the impact of adverse reactions. After the patient returns to the ward, the operating room nursing staff completes the handover work and inquires about the patient's recovery status during the week following the surgery, providing instructions for postoperative care to the patient's family members. In case of any emergencies, effective communication with the ward nurses is essential.

2.3. Observation Indicators

This study focuses on human subjects, aiming to collect and analyze data on the occurrence of adverse reactions closely related to diabetes in two groups of patients during or within one week after surgery. It also compares the glucose and lipid metabolism within one week after surgery in the two patient groups. Furthermore, the study evaluates the nursing interventions for both groups of patients two weeks after the surgery.

2.4. Statistical Method

In this study, SPSS22.0 was used as the statistical software to calculate and compare the differences in observed indicators between two groups of patients. For categorical data, % was used and χ^2 tests were conducted. For continuous data, $\bar{x} \pm s$ was used, and t-tests were conducted.

3. Results

3.1. Comparison of Adverse Reactions

The incidence of adverse reactions during or even after surgery in the observation group of patients was significantly lower than that in the control group of patients, with $P < 0.05$ (**Table 1**).

3.2. Comparison of TG, TC, LDL-C and HDL-C Levels

The performance of the observation group patients in terms of lipid indicators such as triglycerides showed that they were safer compared to the control group patients, with $P < 0.05$ (**Table 2**).

Table 1. Risk ratio comparison [(n) %].

Group	Number of cases (n)	Insulin abnormalities	Infection, edema	Long-term inflammation	Incidence rate
Observation group	30	1	0	0	3.33% (1/30)
Control group	30	1	1	1	10% (3/30)
χ^2					6.667
P					0.010

Table 2. Comparison of the four levels of blood lipid realization ($\bar{x} \pm s$, mmol/L).

Group	Number of cases (n)	TC	TG	LDL-C	HDL-C
Observation group	30	1.67 ± 0.28	5.17 ± 1.32	3.11 ± 0.82	1.87 ± 0.19
Control group	30	2.41 ± 0.24	6.71 ± 1.32	4.84 ± 0.87	1.16 ± 0.19
t		7.672	3.821	7.652	9.774
P				P < 0.05	

3.3. Blood Sugar Control

The performance of the observation group patients regarding fasting blood sugar, blood sugar levels two hours after a meal, and glycated hemoglobin was more optimistic compared to the control group patients, with $P < 0.05$ (Table 3).

3.4. Satisfaction Rate with Care

Overall, the satisfaction rate of the observation group patients towards nursing care was 90% (27/30), while the satisfaction rate of the control group patients towards nursing care was 76.67% (23/30); the satisfaction rate for operation room nursing was higher than that of conventional nursing measures, with $P < 0.05$.

4. Discussion

In many cases, patients undergoing surgery suffer from more than one disease, and it is necessary to analyze whether there is a relationship between these diseases based on the patient's condition. A typical case in clinical treatment is uterine fibroids and diabetes [7]. Uterine fibroids are known for their recurrence, and surgical treatment does not suppress the manifestation of this disease in such cases. As the exploration of the recurrence of uterine fibroids continues, the study of the connection between metabolic diseases such as hypertension, diabetes, and the recurrence of uterine fibroids has gradually attracted attention. In fact, the formation of this connection also has an underlying background, which is immunology.

Table 3. Comparison of blood glucose control among three groups of patients ($x \pm s$, mmol/L).

Group	Number of cases (n)	Fasting blood glucose	Blood sugar of two hours after meal	Glycated hemoglobin
Observation group	30	6.39 ± 1.19	9.04 ± 1.21	6.51 ± 1.73
Control group	30	7.32 ± 1.01	10.71 ± 1.82	8.82 ± 2.01
t		3.911	11.467	8.761
P			P < 0.05	

From an immunological perspective, uterine fibroids are a type of tumor. Although most are benign tumors, the process of tumor formation inevitably involves abnormal changes in serum cytokines such as IL-6, TNF- α , and IGF-1. The occurrence of metabolic diseases such as diabetes, hypertension, and hyperlipidemia is closely related to these abnormal changes in serum cytokines. Therefore, many scholars naturally connect these diseases with uterine fibroids. However, after many years of efforts by most scholars, they have only observed the connection between hypertension, high blood sugar, high blood lipids, and the occurrence of uterine fibroids. Overall, hypertension, high blood sugar, and high blood lipids are high-risk factors for the occurrence of uterine fibroids. Therefore, creating a relatively normal metabolic status for patients in the late postoperative period and after surgery can to some extent reduce the risk of uterine fibroid recurrence. Intraoperative nursing also directly concerns a more critical issue—the prognosis of patients and the prevention of postoperative adverse reactions [8] [9].

The research results showed that the observation group had advantages over the control group in terms of the observed indicators. Generally, for patients without metabolic diseases such as hypertension and diabetes undergoing uterine fibroid surgery, when abnormal situations such as infection and bleeding occur, the treatment period is shorter and the nursing difficulty is lower. However, for patients with diabetes who experience extensive infections, the nursing challenges are greater. Firstly, patients with diabetes have high concentrations of sugar and fat in their body, which facilitate the growth of pathogens such as bacteria. Moreover, the pathogens that can infect patients in the hospital generally have certain drug resistance. On the one hand, insulin resistance involves dysfunction of insulin-producing beta cells, leading to abnormal immune mechanisms, making patients more susceptible to external invasion.

Overall, for patients with diabetes undergoing surgeries such as uterine fibroid surgery, it is necessary to ensure that the metabolic status related to insulin resistance is relatively stable after the surgery in order to prevent postoperative complications. Important indicators for observing this phenomenon include blood sugar and lipid levels. By comparing these two results, it can be concluded that patients in the observation group are in a safer state compared to the con-

trol group. This is evident in the occurrence of adverse reactions and satisfaction with nursing care.

Generally speaking, the surgical stage is the most critical stage that has the most significant impact on patients during the perioperative period. Some behaviors during the intraoperative stage can even directly and explicitly affect the implementation of postoperative nursing measures. We can consider postoperative nursing as an extension of intraoperative nursing. For diabetic patients undergoing uterine fibroid surgery, the impact of intraoperative measures on patients' postoperative condition is more evident. Insulin resistance is the main pathological physiological change in diabetic patients, and general anesthesia can even cause temporary insufficient insulin secretion in non-diabetic patients [10].

In clinical practice, the anesthesia measures during surgery have a significant impact on symptoms of insulin resistance. Moreover, the nervous system in the location of uterine fibroid growth is highly sensitive, which requires patients in this group to face such risks. Therefore, this stage requires close monitoring of patients by nurses. In the measures adopted for patients in the observation group, nurses collaborated closely with doctors to monitor changes in the patients' vital signs, blood sugar levels, and blood gas analysis indicators. They took proactive measures to address fluctuations in patients' blood sugar levels, ensuring that patients safely passed through this stage.

5. Conclusion

In summary, a systematic perioperative nursing approach for patients with uterine fibroids and diabetes can help control their glycemic and lipid metabolism, ensuring patient safety.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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