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Perioperative Nursing of Catheter Thrombolysis Therapy for Deep Vein Thrombosis in Lower Limbs

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Abstract: ***Objective:*** *This article evaluates the clinical treatment of lower limb deep vein thrombosis and analyzes the clinical nursing effect after catheter thrombolysis therapy.* ***Method:*** *According to the research requirements, clinical data of 25 patients with lower limb deep vein thrombosis who met the requirements were selected and analyzed. The patients were treated with direct contact thrombolysis with a catheter and received postoperative nursing intervention.* ***Result:*** *All selected patients were successfully placed with thrombolytic catheters, with a success rate of 100.00%, and the clinical treatment efficacy was significant.* ***Conclusion:*** *Catheter thrombolysis therapy for lower limb deep vein thrombosis has significant clinical effects, a convenient treatment process, and effectively prevents the occurrence of complications. It plays a positive role in improving the rate of thrombolysis and ensuring the quality of life of patients.*

Keywords: Lower extremity deep vein thrombosis; Catheter thrombolysis therapy; Perioperative nursing.

1. Introduction

Lower limb deep vein thrombosis is caused by abnormal accumulation of blood in the deep vein vessels, leading to blockage of the vessel wall and affecting venous return. Once a patient develops lower limb deep vein thrombosis, it can cause swelling and pain, leading to pulmonary embolism in the early stages and even sudden death in severe cases. If these diseases are not detected and treated early, they can cause varying degrees of sequelae and inconvenience to the patient's daily life. Lower limb deep vein thrombosis is a surgical disease, and conservative treatment and surgical treatment have been used in clinical practice for lower limb deep vein thrombosis, but the clinical effect is not ideal and it can also cause serious trauma to the patient. Practical research has shown that using catheter thrombolysis and anticoagulation therapy combined with nursing intervention can effectively improve patients' clinical symptoms, with ideal treatment effects and minimal side effects. This study selected 25 eligible patients with lower limb deep vein thrombosis from our hospital for analysis. The patients were treated with catheter thrombolysis and provided with nursing interventions. The clinical efficacy was analyzed, and the specific content is as follows.

2. Data and Methods

2.1 General Information

To validate the research content, clinical data of 25 patients with lower limb deep vein thrombosis were analyzed, including 19 male patients and 6 female patients, with ages ranging from 35 to 72 years old. One patient developed pulmonary embolism, with onset time ranging from 18 hours to 6 days. The patient's clinical symptoms included swelling, bruising, intense pain, and limited mobility in the affected limb. The patient's clinical data was evaluated, and there was no statistically significant difference (P>0.05).

2.2 Treatment Methods

This time, anticoagulant injections (low molecular weight heparin calcium, oral: rivaroxaban thrombolytic drug: urokinase, 100000 units) were administered to the patient. The location and type of venous thrombosis were determined by digital subtraction angiography, and a retrievable inferior vena cava filter was inserted from the healthy side for protection. Contact thrombolysis with a catheter was performed using SeLdinger technology to insert the thrombolysis catheter into the thrombus site, and the catheter was directly infused with thrombolytic drugs to dissolve the thrombus.

2.3 Statistical Analysis

When analyzing and processing the data of this study, the SPSS19.0 statistical software package was mainly used. The mean ($\bar{x} \pm s$) was used to represent the quantitative data, and x^2 was used to test the count data. The difference between the two groups of data with P<0.05 is significant and statistically significant.

3. Results

The retention time of the catheter in this patient's treatment was 3.5 days ± 7.2 days, and there was no detachment or blockage of the thrombolysis catheter. There were no cases of infection, and no complications such as important organ bleeding and pulmonary embolism occurred. The vascular recanalization rate reached 100%.

4. Nursing

4.1 Preoperative Nursing Intervention

Before the surgery, the nursing staff should require the patient to rest absolutely in bed, raise the affected limb to a position 20-30cm above the level of the heart, which is more conducive to venous return. Do not massage or pat the affected limb to avoid the occurrence of pulmonary embolism caused by thrombus detachment. Keep the patient's affected limb warm and closely monitor the skin temperature, skin color, and dorsalis pedis artery pulsation of the affected limb. Measuring and statistically analyzing the circumference of the affected limb is more conducive to postoperative observation and comparison, strengthening risk awareness education, allowing patients to have a comprehensive understanding of their own disease knowledge and treatment plans, and improving their medical cooperation.

4.2 Postoperative Patient Limb Care Intervention

Within 24 hours after the surgery, the patient's affected limb was wrapped with an elastic bandage, and the brake was raised. The hip joint of the healthy side limb was immobilized for 24 hours. Close

attention was paid to whether there was hematoma, bleeding, skin color, skin temperature, etc. at the puncture point of the patient. The circumference of the patient's affected limb's large leg and bare foot was measured in a timely manner, and compared with the corresponding plane of the healthy limb before surgery. This allowed the patient to understand the clinical treatment efficacy and improve their confidence in treatment. After surgery, the patient was required to engage in independent activities such as dorsiflexion exercises.

4.2 Nursing of Thrombolytic Catheters

Under the imaging effect, the thrombolytic catheter can be inserted into the thrombus from the vein, effectively fixing the catheter. Fix the catheter sheath with a transparent dressing of 8mm x 10cm, and then reinforce it with 3m pressure tape. Measure the exposed length of the patient's catheter in each shift, and make detailed statistics on the dedicated inspection card for catheter thrombolysis patients to implement the handover work. The outer part of the catheter is relatively long, so more attention should be paid to the fixed position of the catheter coil to avoid bending, displacement, and other situations that may affect the thrombolytic effect to a certain extent. Clearly label the sheath and thrombolysis catheter, place warning signs at the bedside to enhance clinical nursing safety. Patients should choose a micro pump when using medication, and the medication should be administered on site. Pay close attention to the speed and dosage of drug infusion, and observe whether they are consistent with the actual situation. Each class should pay attention to the residual amount of urokinase and record it on the dedicated inspection card for catheter thrombolysis patients to avoid situations such as catheter blockage, which may affect the infusion of medication.

4.3 Dietary Care

After the surgery, patients should be informed to drink plenty of water, which can quickly eliminate the contrast agent from the body and reduce blood viscosity. Inform patients that smoking and alcohol should be prohibited during the process of recuperation. During the treatment period, the patient's physical activity is relatively low. Patients should be advised to consume more vitamins, vegetables, fruits, and other foods, reduce salt intake, and focus on low-fat foods. Detailed instructions should be given on not exerting force during bowel movements to prevent increased pressure on the abdomen.

4.4 Psychological Care

Due to the impact of the disease, patients lose their ability to work, coupled with the high treatment cost of thrombolytic catheters and a lack of understanding of their own symptoms. Patients are more prone to negative emotions and negative psychology such as fear, worry, and anxiety. Nursing staff should have good communication skills, actively interact and communicate with patients, provide correct psychological counseling and emotional support, stabilize patients' emotions, and encourage them to actively cooperate with medical treatment.

5. Discussion

Lower limb deep vein thrombosis has a serious impact on the physical and mental health of patients. The clinical efficacy of previous systemic thrombolysis treatment methods is very unsatisfactory. Catheter thrombolysis is currently an effective method for treating lower limb deep vein thrombosis and is a treatment guideline developed by the Thrombology Surgery Group of the Chinese Medical Association to promote treatment. It can effectively improve clinical symptoms, prevent patients from developing complications, reduce the dosage of urokinase through catheter thrombolysis, and local

medication will not affect the patient's collateral circulation. The dosage of medication is also relatively clear. Preoperative health education, dietary guidance, and treatment preparation should be provided to patients. Effective postoperative care should be provided for the puncture site and affected limb area, and a dedicated inspection card for catheter thrombolysis patients should be established to strengthen catheter management, ensuring effective thrombolysis treatment and avoiding the formation and development of complications.

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