

Research on Clinical Nursing Key Points and Complications Prevention Strategies after Coronary Heart Disease Stent Implantation

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Abstract: With the development of the social economy and the continuous improvement of people's living standards, the number of coronary heart disease patients is on the rise, even affecting some younger groups. When a patient's coronary artery stenosis endangers their life, doctors usually recommend coronary artery stent surgery to effectively improve myocardial ischemia and prevent sudden death. After a successful operation, it is necessary to clarify the key points of clinical nursing and prevent complications. Starting from the situation after coronary heart disease stent implantation, this article analyzes the key points of clinical nursing and proposes specific strategies for preventing complications, aiming to improve the surgical effect and provide a reference for complication prevention activities.

Keywords: Coronary heart disease stent; Post-operative clinical nursing; Complication prevention

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1. Introduction

Coronary heart disease is a common cardiovascular disease in clinical practice. To relieve patients' pain, hospitals recommend stent surgery for some patients as an effective treatment. According to specific clinical data, restenosis is a common problem after coronary heart disease stent implantation, with a relatively high incidence rate, and it may even cause acute in-stent thrombosis. To effectively solve these problems, hospitals need to grasp the clinical nursing requirements after surgery, attach importance to the construction of a scientific nursing system, effectively reduce the risk of complications, protect patients' lives and health, and improve their quality of life.

2. Analysis of key points of clinical nursing after coronary heart disease stent implantation

2.1. Pay attention to post-operative wound care

After coronary heart disease stent implantation, patients will have small puncture points on their bodies, including the wrists and the root of the thighs. Although these wounds are small, the nursing process cannot be taken lightly.

Medical staff need to regularly check the patients' wounds. After the operation, regularly check whether there is bleeding at the puncture site and whether the surrounding tissues are swollen ^[1]. If the patient has swelling and obvious pain, it may be a sign of bleeding or hematoma, and the doctor should be called immediately. At the same time, for the post-operative wounds of patients, attention should be paid to keeping the wounds dry. Before the wounds heal, keep the puncture site dry and avoid contact with water. In particular, the puncture wound on the femoral artery needs to be carefully cared for and maintained for 24–48 hours. In addition, medical staff need to remind the accompanying family members to pay attention to the patient's wound, avoid compression and pulling, do not place heavy objects on the puncture site, and avoid excessive stretching and bending ^[2]. These actions are likely to affect wound healing and may cause pain and bleeding.

2.2. Pay attention to post-operative risk factors

Coronary heart disease is usually caused by the stenosis or blockage of the heart blood vessels, resulting in an insufficient blood supply to the heart muscle. The risk factors involved include hypertension, hyperlipidemia, etc. ^[3]. The presence of these primary diseases can put great pressure on the blood vessels, thus increasing the risk of cardiovascular diseases. After a coronary heart disease stent implantation, hospitals need to develop a good medication plan according to the patient's condition, so that patients can take medications correctly and control their primary diseases. For example, long-term use of anticoagulant drugs can help patients prevent thrombosis ^[4]. Under the guidance of medical staff, patients can avoid reducing or stopping medications without permission, which is helpful for the stability of their condition.

2.3. Maintain a good lifestyle

Medical staff can provide suggestions for patients' post-operative lives, which mainly include the following two aspects: First, pay attention to dietary adjustment. To help post-operative patients recover their wounds, light and easily digestible foods such as rice soup and noodles can be chosen, and spicy and irritating foods should be avoided. ^[5]. At the same time, patients can also eat an appropriate amount of high-protein foods such as beef and eggs to help their bodies recover quickly. The accompanying staff should provide patients with low-salt and low-fat foods and avoid high-fat foods. From the patient's own perspective, they need to temporarily quit smoking and drinking, maintain a good life routine, and avoid staying up late. In addition, patients need to manage their emotions well and maintain a healthy and positive attitude. They should view the stent surgery correctly, understand the precautions for post-operative recovery, strengthen communication with relatives and friends, and engage in appropriate entertainment to maintain a good attitude, which can effectively speed up the recovery process ^[6]. Many patients are prone to anxiety after stent surgery, overly worried about whether there are problems with the stent, which can even affect their normal lives. In this regard, medical staff need to comfort patients, help them understand the principle of the stent, and realize that occasional chest discomfort is a normal phenomenon.

2.4. Conduct regular outpatient reexaminations

For patients' reexaminations, medical staff mainly check their blood pressure, blood lipid, blood sugar, etc., and conduct analysis based on the data. Patients can set a fixed time for reexamination, such as a three-month cycle. If patients experience symptoms such as chest tightness and headache within one month after the operation, they need to seek medical attention promptly ^[7]. Six months after the operation, if they experience chest pain and chest tightness, they also need to be vigilant and understand the possibility of restenosis.

2.5. Give full play to the advantages of the CCU ward and cooperate to carry out in-hospital cardiac rehabilitation

In clinical nursing after coronary heart disease stent implantation, it is of great significance for in-hospital cardiac rehabilitation specialist nurses to cooperate with the rehabilitation department to carry out cardiac rehabilitation work in the early stage. With professional rehabilitation knowledge and skills, specialist nurses communicate closely with the doctors in the department and develop personalized rehabilitation activities according to the individual differences of patients. In the CCU ward, medical staff not only need to pay close attention to the physical recovery of high-risk patients after stent implantation but also need to deeply understand their psychological conditions, conduct psychological counseling promptly, and help patients build confidence to overcome the disease. At the same time, strengthen health education for patients and their families to make them fully understand the value of cardiac rehabilitation. Through early collaborative rehabilitation, formulating personalized rehabilitation plans, and providing comprehensive care for patients' physical and mental health, the rehabilitation effect of high-risk patients after stent implantation can be significantly improved, the incidence of complications can be effectively reduced, and the subsequent quality of life of patients can be effectively guaranteed.

2.6. Organize post-operative exercise activities

Post-operative exercise activities are also an indispensable part of the nursing after coronary heart disease stent implantation. According to the specific conditions of patients, the rehabilitation team will develop suitable exercise plans, such as increasing the walking distance and performing aerobic exercises. These activities can not only promote the blood circulation of patients but also enhance myocardial function and improve the quality of life. At the same time, medical staff can explain in detail the precautions for post-operative exercise activities to patients and their families to ensure that patients can exercise effectively under safe conditions.

3. Complications after coronary heart disease stent implantation and prevention strategies

3.1. In-stent thrombosis

In-stent thrombosis refers to the formation of a thrombus at the stent implantation site due to the influence of the patient's comprehensive quality after stent surgery. The thrombus can cause coronary artery occlusion and a series of clinical manifestations, such as sudden death and unstable angina pectoris. According to the actual situation of patients, in-stent thrombosis can be divided into different types. Taking the formation time as a reference, it includes acute, late, and very-late thrombosis. The main causes of in-stent thrombosis include the following: First, the influence of factors brought by stent implantation. Poor stent apposition is a common factor that can easily cause in-stent thrombosis^[8]. Second, patients stopping the use of anticoagulant drugs too early can easily cause late-stage stent thrombosis. Patient-related factors include many aspects, such as comorbid diabetes, malignant tumors, and comorbid cardiac insufficiency.

In addition, for the complications after coronary heart disease stent implantation, in the face of in-stent thrombosis, corresponding measures can be taken for good prevention and treatment. Hospitals can adjust clinical techniques. According to the patient's situation, select an appropriate-length stent to meet the requirements of coronary heart disease stent surgery, avoid problems such as insufficient stent coverage and poor apposition, and preferably use IVUS or OCT as a guide to effectively place the stent^[9]. At the same time, the hospital catheterization laboratory can perform coronary angiography to identify the early appearance of in-stent

thrombosis. If the cause is considered to be insufficient apposition between the stent and the blood vessel wall, a high-pressure balloon shorter than the stent length can be used to perform PTCA. If the cause of early in-stent thrombosis is determined by angiography, such as intimal tears at the proximal or distal end of the stent, the stent can be reimplanted. Hospitals should attach importance to the implementation of dual-antiplatelet therapy after PCI. According to the patient's situation, check for contraindications and set a fixed time for patients to regularly take aspirin and clopidogrel and adhere to taking them, which can effectively reduce the formation of in-stent thrombosis and help patients with subsequent rehabilitation.

3.2. No-reflow phenomenon or slow flow

After coronary heart disease stent surgery, patients may experience various types of complications, such as the no-reflow phenomenon and slow flow. Specifically, during PCI, the stenosis of the epicardial coronary artery is relieved, and obvious dissection, thrombosis, and other problems are excluded, but the patient shows a significant reduction or loss of coronary blood flow, presenting a problem of no perfusion in the myocardial tissue^[10]. Based on the specific complications, the pathogenesis is judged. The reasons for patients to develop no-reflow and slow flow are as follows: microcirculation embolism, vasospasm, and contraction induced by coronary intervention operations, and individual susceptibility.

In addition, for the prevention and treatment of no-reflow and slow-flow symptoms, the following prevention and treatment methods can be adopted by hospitals: First, carry out drug treatment. Provide patients with medical advice on drug use, including vasodilators, platelet glycoprotein GPIIb/IIIa receptor antagonists, etc. Second, attach importance to the implementation of non-drug treatment. Carry out device-based treatment activities for patients. Based on the recommendations for coronary intervention treatment, clearly identify high-risk acute myocardial infarction patients (AMI) and understand the presence of thrombus-laden lesions. Manual or mechanical thrombus aspiration can be used to carry out good treatment activities^[11]. Through the recommended application of the above methods, it can help patients remove the thrombus in the blood vessels and provide patients with good medical services.

Perform intra-aortic balloon counterpulsation. In the face of patients with acute myocardial infarction, medical staff can promptly use the intra-aortic balloon counterpulsation technique to effectively reduce the area of the infarcted area, so that the patient's coronary artery has a higher blood perfusion volume. By using scientific and reasonable treatment methods, it is helpful to optimize the value of the myocardial microcirculation, reduce the probability of the no-reflow phenomenon, and promote the reduction of the no-reflow myocardial area, which is helpful for the post-operative rehabilitation of patients.

Adjust the diagnosis and treatment process for coronary heart disease patients. To effectively deal with acute coronary syndrome patients (ACS) and improve the treatment effect, hospitals need to pay attention to adjusting the treatment methods for patients^[12]. Specifically, it includes the patient's first-contact medical treatment process, focusing on shortening the time, such as the time from chest pain onset to blood vessel opening. By reducing the ischemic time, the no-reflow phenomenon in patients can be reduced, and timely and effective treatment activities can be carried out.

3.3. Coronary artery dissection

There are many common types of complications after coronary heart disease stent implantation, such as coronary artery dissection. During the PCI process, significant arterial intimal injury can easily cause coronary intimal tear, accompanied by the formation of local thrombus. According to the specific clinical manifestations, this symptom is highly similar to acute coronary syndrome, specifically presenting as angina pectoris, myocardial infarction, etc. It

is difficult for hospitals to effectively distinguish based on symptoms, and mainly rely on coronary angiography. If a patient has a severe coronary artery dissection, it can easily cause large-area ischemia and myocardial infarction, especially in patients with comorbid hypertension.

Analyzing the causes of coronary artery dissection, the specific factors include the following:

3.3.1. Device-related factors

- (1) Guide catheter factors: large-diameter catheter lumen, use of special-type guide catheters, etc.^[13]
- (2) Balloon factors: high-pressure expansion of calcified lesions with ordinary balloons, balloon rupture.
- (3) Guide wire factors: calcified and tortuous lesions of the guide wire can easily cause intimal injury of the blood vessels
- (4) Contrast agent factors: injection of contrast agent can aggravate the dissection^[14].

3.3.2. Operation-related factors

Medical staff's improper selection and operation of devices such as guide catheters and guide wires can easily cause vascular dissection. In addition, the treatment of coronary artery dissection includes specific methods such as medical conservative treatment, coronary stent implantation, and coronary artery bypass grafting. After drug treatment for coronary artery dissection, it usually can heal on its own, but there are still some patients with long-term dissection^[15]. Coronary stent implantation is an important and preferred treatment method for coronary artery dissection. Through coronary angioplasty, the stent covers the dissection to effectively prevent the dissection from expanding and stabilize the vascular lumen. For patients with left main coronary artery dissection and complex lesions, especially those with shock and unsuccessful interventional treatment, emergency coronary artery bypass grafting can be immediately used for treatment.

4. Conclusion

In conclusion, clinical nursing and complication prevention for patients after coronary heart disease stent implantation are of great value. To grasp the nursing key points, it is necessary to carry out meticulous nursing activities for the patients' post-operative wounds, pay attention to various risk factors, and require patients to participate in regular outpatient reexaminations to help patients with subsequent rehabilitation. Specifically, in the process of complication prevention, for coronary heart disease stent surgeries carried out by hospitals, it is necessary to clarify the types of complications, such as in-stent thrombosis and coronary artery dissection, and propose corresponding prevention strategies to effectively reduce the incidence of complications and improve the quality of life of patients.

Disclosure statement

The author declares no conflict of interest.

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