Cheng Hsin General Hospital

Preoperative and Postoperative Care for Heart Surgery

1. Coronary artery bypass surgery

1.1 The coronary arteries play a vital role in supplying blood to the heart. Narrowing of the coronary artery due to atherosclerosis can lead to myocardial ischemia, which can be life-threatening. This condition can cause angina or even myocardial infarction and requires prompt medical attention.

1.2 If medication and coronary artery balloon dilation are not effective in treating obstructive coronary artery disease, your doctor may recommend coronary artery bypass surgery as an option.

1.3 With advancements in science and technology, the risks associated with surgery have significantly decreased. Your primary care physician will provide you and your family with detailed information about the procedure and associated risks.

1.4 During the surgery, a blood vessel is taken from your leg or inner chest wall and attached to the coronary artery to restore proper blood flow to the heart.

2. Valve replacement or repair surgery

The heart contains four valves that direct the flow of blood throughout the body. When it comes to compromised valve function that requires surgical intervention, a thorough evaluation by a cardiologist is of utmost importance. When it comes to valve surgery, there are various approaches depending on the patient's condition. It may entail either repairing or replacing the valve, which can be done through open-heart surgery or a cathterization procedure. The decision on which method to use will be made by the surgeon after a thorough evaluation of the patient and observation during the surgery. You can rely on the knowledge and expertise of your healthcare team to guide you through this important decision-making process.

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Make a Decision

2.1 Prosthetic valves: Mechanical valves and tissue valves

2.1.1 Mechanical valves:

2.1.1.1 They are known for their durability and longer lifespan, but they can also increase the risk of blood clots that may lead to valvular dysfunction or vascular obstruction, necessitating lifelong use of anticoagulants (such as warfarin) and regular follow-up appointments to assess treatment effectiveness.

2.1.1.2 The concentration of anticoagulants in the blood may vary due to dietary changes, medication, and physical conditions. When the concentration is too high, it can result in a tendency to bleed, and when it is too high, it can result in a rendency to bleed, and when it is too low, it can cause thrombosis.

2.1.1.3 However, with good cooperation with a physician, disease control can generally be satisfactory. Trust in the expertise of your healthcare team as they guide you through managing this condition.

2.1.2 Tissue valves:

2.1.2.1 They are made from the tissues of animals such as pigs or cows, are less likely to cause blood clots, and therefore usually don't require long-term use of anticoagulants. This eliminates the potential side effects of anticoagulants, although patients still need to take them for three months after surgery.

2.1.2.2 On average, the lifespan of a biological tissue valve is around 15 years (with a range of 10-20 years) before degeneration in the body may cause problems requiring reoperation

2.1.2.3 Trust in your healthcare team to discuss the advantages and disadvantages of each option and guide you through the

decision-making process.

2.2 Transcatheter valve replacement surgery:

2.2.1 Transcatheter valve replacement surgery involves placing a valve in the appropriate position via catheter, determined by high-speed CT scans.

2.2.2 The valve used in this surgery is made of animal tissue (cow) and is less likely to cause blood clots, so long-term anticoagulant use is not necessary.

2.2.3 The technology is relatively new, with about ten years of experience in large-scale clinical use.

2.2.4 Clinical studies have shown that tissue valves used in transcatheter valve replacement surgery perform equivalent to traditional valves after seven years of use.

2.2.5 However, all tissue valves may degenerate and malfunction in the body, requiring further surgery.

2.2.6 Regular valve examinations are necessary after surgery to ensure proper function.

3. Congenital heart disease surgery

The goal of this surgery is to address heart defects, which vary in severity from person to person. Therefore, the surgical approach and associated risks will be tailored to each individual's specific needs, as determined by their doctor.

4. Preoperative preparation:

4.1 Before undergoing heart surgery, several tests may be performed to assess heart function, such as cardiac catheterization, echocardiography, pulmonary function tests, and blood tests. It is important to refrain from consuming alcohol and smoking and maintain a healthy lifestyle to

ensure that your body is optimal condition for surgery.

4.2 Maintaing a healthy lifestyle by avoiding harmful habits such as alcohol and smoking, prioritizing a balanced diet, exercise, and adequate rest can optimize the chances of a successful surgery and promote a faster recovery.

4.3 Healthcare professionals will guide you through breathing exercises, coughing techniques to prevent postoperative pneumonia, and rehabilitation exercises after surgery. Before the procedure, nurses will provide instructions for preoperative care, including signing a consent form and receiving an enema.

4.4 After surgery, the patient will be transferred to the cardiac intensive care unit. After the patient enter door number 5 of the operating room, you can return to the ward to gather the belongings, then you can wait in the family waiting area, located outside the door number 6 of the Second Medical Building. After the surgery, you will be notified through a broadcast or by someone coming to the waiting area to find you. Please remain patient and wait for further instructions.

5. Postoperative precautions:

5.1 Upon awakening from surgery, you will find yourself in the CCU with several tubes such as endotracheal tubes, Swan-Ganz or central venous catheters, arterial catheters, urinary catheters, and intravenous lines in place, and your hands restrained. You may also notice that your hands are restrained, but there’s no need for alarm as is done to ensure that you don’t accidentally dislodge any tubes while you sleep. Once you are fully alert and your vital signs, including heart rate, blood pressure, and oxygen levels, are stable, your hands will be released as soon as the endotracheal tube is removed.

5.1.1 Endotracheal Tubes

5.1.1.1 During the procedure, you will be under general anesthesia and connected to a ventilator via a endotracheal tube to help you breathe.

5.1.1.2 The nurse will suction your sputum, so please do not be nervous and do not bite the breathing tube while this is being done.

5.1.1.3 You may experience difficult talking or eating for a period of time after this procedure. If needed, you may communicate with medical staff by nodding, shaking your head, or using a whiteboard.

5.1.1.4 Then, the medical team will carefully monitor your vital signs, and a respiratory therapist will assist you with breathing exercises to ensure a smooth extubation process. It's normal to feel nervous or uncomfortable during this time, but please try to relax and avoid biting the breathing tube while it's being removed.

5.1.1.5 You may experience some temporary hoarseness or soreness in your throat after the tube is removed, but rest assured that your medical team will provide you with appropriate care and support during your recovery.

5.1.2 Nasogastric tube

As a result of the anesthesia and ventilation used during surgery, it is common to experience abdominal bloating which can impact the function of the heart and lungs. To alleviate this issue, a nasogastric tube will be placed, but it will be removed shortly after the breathing tube is taken out.

5.1.3 Arterial Catheters

They are placed on the lateral side of the wrist or the medial of the elbow to monitor blood pressure changes continuously and for blood

sampling purposes. These devices will be removed on the same day that patients are discharged from the CCU.

5.1.4 Swan-Ganz or Central Venous Catheters

They are placed on your neck or collarbone to test and evaluate your heart function. Please do not pull on them. Usually, these devices are removed on the same day that patients are discharged from the CCU.

5.1.5 Chest tube

The two or three chest tubes placed during surgery will exit from below your chest in order to monitor postoperative bleeding. They will usually be removed after about three to four days.

5.1.6 Urinary catheter

After heart surgery, it is necessary to accurately measure the amount of water in your body and measure your urine output regularly. Therefore, a urinary catheter will be placed. Some people may feel like they need to urinate constantly due to the stimulation of the catheter, but in fact, the urine has already been drained out through the catheter.

5.2 Pain

After your surgery, you may experience pain from your wounds and feel hesitant to move or perform activities like deep breathing or coughing due to the presence of multiple tubes in your body. Your nurse will provide assistance with chest care, including chest and back percussions, postural drainage rehabilitation, and encourage and support you to turn over, move your limbs, breath deeply, cough, and get out of bed to prevent complications such as bedsores, deep vein thrombosis in the lower limbs, and pneumonia. When moving, you can gently apply pressure to the wound with your hand or hold a pillow tightly against your chest to reduce pain from vibrations. To ensure you get enough

sleep, the medical staff will evaluate your condition and administer appropriate painkillers and sedatives.

5.3 Diet

After the removal of breathing tube, there is no need to wait for flatulence before you can drink a small amount of water. You may feel thirsty in the first two days after surgery, but it's important not to drink too much water to avoid putting an extra burden on your heart. Once you've had some water, you can start with a soft diet. If you prepare your own food, it should be light and easy to digest.

5.4 Defecation

Due to the reduced level of activity in the CCU, it is common to experience constipation or bloating. Please inform your nurse and we will promptly provide assistance to alleviate any discomfort.

5.5 Upon transfer to the CCU, we kindly ask you to have a washbasin, toothbrush, toothpaste, mouthwash cup, graduated water cup, interfolded toilet paper, wet wipes, spoons and chopsticks, bendable straws, comb, shower gel, body lotion, shoes, NHI card, and mouthwash prepared. If the patient wears dentures, please hand them to the nurse.

5.6 The visiting hours at the CCU are from 10:30 to 11:00 am and from 7:00 to 7:30 pm. Typically, after your condition stabilizes three to four days after surgery, the doctor will transfer you to a general ward.

5.7 We understand that it's natural to feel uncomfortable after surgery and in the sometimes noisy environment of the CCU. If you feel experience any discomfort, please don't hesitate to inform your nurse. We kindly ask that you work closely with our doctors and nurses, as they are here to provide the best care possible.

5.8 The stitches on your wound can be removed in about ten to fourteen days. You can take a shower three days after all the stitches are removed, but

please confirm with your doctor before doing so.