仁安醫院
UNION HOSPITAL

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Operation Information

Permanent Cardiac Pacemaker

Introduction

Heart rhythm is mainly controlled by the conduction system of the heart. Any abnormality in the conduction system may result in abnormal heart rhythm (arrhythmia). Arrhythmias with slow heart rate may cause dizziness, syncope, heart failure or occasionally cardiac death.

Permanent cardiac pacemaker is an implantable device used for treatment of slow heart rate. It consists of leads which connect the pulse generator to the patient's heart. The device can be programmed to suit individual patient's need.

Outcomes

Permanent cardiac pacemaker is the only effective long-term treatment for patients with slow heart rate. If left untreated, patient may develop severe consequence.

Procedures

1. The operation is performed under local anaesthesia or monitored anaesthetic care in a cardiac catheterization laboratory or operation theatre under X-ray guidance.
2. 1 to 2 pacing lead(s) will be advanced to the heart chambers through subclavian or axillary vein under X-ray guidance.
3. The generator will be connected with the pacing lead(s) and implanted in a pouch created underneath the skin or in the muscular layer.
4. The wound will be closed with sutures and covered with pressure dressing.
5. For leadless pacemaker implantation. A guiding catheter is placed into the right ventricle through groin vein. The pacemaker will be implanted directly into the right ventricle through the guiding catheter. After the procedure, the guiding catheter will be removed. The wound will be closed with sutures and covered with sterile pressure dressing.
6. The operation usually takes around 2 to 3 hours.

Possible Risks & Complications

1. Minor
   - i) Wound infection (<1%)
   - ii) Wound haematoma (<1%)
   - iii) Air embolism
   - iv) Vascular injury
   - v) Vein thrombosis (<1%)
   - vi) Contrast allergy
   - vii) Pneuomothorax
   - viii) Haemothorax
2. Major
   - i) Serious heart or lung perforation (<0.1%)
   - ii) Death (<0.1%)

3. Risks related to the device include lead dislodgement, insulation break or fracture, and pocket erosion.

** The risks listed above are in general terms and the list of complications is not exhaustive. Please understand that even though all operations are carried out with utmost professionalism and care, complications can still occur. In the event of peripheral organ damage or post-operative haemorrhage or leakage, further operations may be required.

Pre-operative Preparations

1. Good hygiene can prevent wound infection. Therefore, we advise you to clean up yourself on the day of operation.
2. The procedure and possible complications will be explained by the doctor and a consent form must be signed prior to the operation.
3. Please inform the doctor and nurse all your past medical history, previous surgical operations, current medication and any complication with drug or anaesthesia.
4. Blood thinner (e.g., Aspirin, Warfarin, Xarelto and Pradaxa) or Metformin (for diabetes) may need to be stopped several days before the operation as doctor's instruction. Steroid will be given if contrast injection is required and there is history of contrast allergy.
5. If you are a female, please provide the last menstrual period (LMP) and avoid pregnancy before the operation as this operation involves exposure to radiation.
6. You may have some preliminary tests including electrocardiogram, chest X-ray and blood tests before the operation if needed.
7. Please shave axillary or groin hair to keep the implant site clean.
8. No food or drink four to six hours before operation. An intravenous drip may be set up.
9. Please change into a surgical gown after removing all belongings including undergarments, dentures, jewelry and contact lenses.
10. Please empty your bladder before the operation.

Post-operative Instructions

General

1. After the operation, you will be under close monitoring in the ward. Nursing staff will check the pulse and wound regularly.
2. Please inform the nursing staff if there is wound pain. Analgesics will be given as prescribed by the doctor.
3. You may be discharged 1 – 2 days after the operation. Doctor will perform test to ensure proper functioning of pacemaker.
4. Product specialist from supplier will visit you to register the contact information and details of the pacemaker for examining and adjusting the function of the pacemaker in the future.

Wound Care

1. The wound will be inspected and covered with pressure dressing. Please keep the wound site clean and change dressing if wet.
2. Please avoid elevation of the affected arm and lift the affected arm over the shoulder for 2 – 3 months, and also avoid vigorous arm movement in the first month to prevent stretching the wound while it heals.

Advice on Discharge

1. You will be arranged to attend follow-up for regular pacemaker analysis, re-programming and battery power assessment.
2. Please bring along with the pacemaker identity card at all times.
3. Follow doctor's instructions or refer to the information booklet from the pacemaker company to avoid near area with high voltage or high frequency of magnetic fields (e.g. do not stand under the cable) due to electromagnetic interference.
4. Please keep a distance of at least 15 cm (6 inches) from an active mobile phone as well. Household electrical or electronic appliance usually does not affect the pacemaker.
5. The generator may need to be replaced in 5 – 10 years' time upon individual model and battery life expectancy.
6. Product specialist from supplier will monitor and adjust the function of the pacemaker regularly to meet your needs.

Should there be any enquiries or concerns, please consult the attending doctor.

Under the professional care of the doctor, you will gradually recover. We wish you all the best during your treatment and recovery.

If you have any questions after reading the entire leaflet, please write them down in the spaces provided in order for the doctor to further follow-up.

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Compiled by Union Hospital Operating Theatre (OT) Governance Committee

The above information is for reference only, please enquire your physician for details
Our Hospital reserves the RIGHT to amend any information in this leaflet without prior notification