



Procedure Information – Permanent Cardiac Pacemaker

Visit No.: Dept.:
Name: Sex/Age:
Doc. No.: Adm. Date:
Attn. Dr.:
Patient No.: PN

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*Please fill in /
affix patient's label*

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 cause dizziness, syncope, heart failure or occasionally cardiac death. Permanent cardiac pacemaker (PCP) is an implantable device used for long-term treatment of arrhythmias with slow heart rate. It consists of a battery-powered generator and leads which connect the generator to the patient's heart. If the heart rate is slow, the pacemaker will stimulate the heart at a desirable rate.

Importance of Procedure

PCP is the only effective long-term treatment for patients with slow heart rate. If left untreated, patients can develop syncope, heart failure, or occasionally cardiac death. If you refuse this procedure, the result may be detrimental. Alternative treatments include conservative management.

The Procedure

1. This invasive procedure is performed under local anesthesia in a cardiac catheterization centre or an X-ray room. You are alert during the procedure, but we may give you sedation to calm you down.
2. Electrodes are adhered to the chest to monitor the heart rate and rhythm. Blood oxygen monitor through your finger tip will be set up. Measurement of blood pressure from your arm will be taken during the examination.
3. Skin disinfection will be performed and a small skin incision (about 3-5 cm long) will be made under your left (sometimes right) clavicle.
4. Contrast may be injected intravenously to visualize the veins in your arm and needle puncture under the clavicle may be required to obtain access to your vein.
5. 1 to 2 leads will be advanced to your heart chambers through your vein under X-ray guidance.
6. The generator will be connected with the lead(s) and implanted in a pocket created under the skin or muscle. The wound will be closed with suturing material and covered with pressure dressing.
7. The procedure usually takes around 1 to 2 hours.

Risks and Complications

The overall complication rate is around 3%

- Major complications:
 - Serious heart or lung perforation (<0.1%)
 - Death (<0.1%)
- Other potential risks:
 - Wound infection (<1%)
 - Wound haematoma (<1%)
 - Vascular injury
 - Haemothorax
 - Air embolism
 - Pneumothorax
 - Vein thrombosis (<1%)
 - Contrast allergy
 - Special risks related to the device include lead dislodgement, insulation break or fracture, and pocket erosion.

Before the Procedure

1. Your doctor will explain to you the reason, procedure and possible complications. You will need to sign a consent form.
2. You will have preliminary tests including electrocardiogram, chest X-ray and blood tests. Alternatively, because of emergency situation, you may already have a temporary cardiac pacing performed.
3. Blood thinning drugs or metformin (for diabetes) may have to be stopped several days before the procedure. Steroid will be given if contrast injection is necessary and there is history of allergy.
4. An IV infusion will be set up and you need to fast for 4-6 hours.
5. Shaving near the implant site may be required.
6. If you are a female, please provide your last menstrual period (LMP) and avoid pregnancy before the procedure as this procedure involves exposure to radiation.



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After the Procedure

A. Hospital care

1. After the procedure, you will be kept on close monitoring in the ward.
2. Nursing staff will check your pulse and wound regularly.
3. You should inform your nurse if you find blood oozing from the wound site.
4. Mild wound pain is common. You may take simple analgesic to relieve pain.
5. Antibiotics will be given for a few days to minimize the risk of wound infection.
6. Pre-discharge pacemaker programming may be performed.
7. You may be discharged from hospital 1-2 days after the PCP implantation.

B. Follow up

1. The wound will be inspected and covered with light dressing. Please keep the wound site clean and change dressing if wet. In general, showers are allowed after 2 days.
2. You may need to come back to the ward or clinic for suture removal 1 week after the procedure. You may remove the dressing 2-3 days after suture removal.
3. Please avoid lifting the affected arm for 1 week, and avoid vigorous arm movement in the first month after the procedure.
4. You will be arranged to attend pacemaker clinic for regular pacemaker analysis, re-programming and battery power assessment.
5. Please carry your pacemaker identity card at all times.
6. Follow your doctor's instructions or refer to the information booklet from the pacemaker company to minimize the risk of pacemaker malfunction due to electromagnetic interference. In general, strong electro-magnetic field or radiofrequency signal will interfere. Your pacemaker. Please keep a distance of >15 cm (6 inches) from an active mobile phone. Household electrical or electronic appliance usually does not affect pacemaker.
7. The generator will need to be replaced several years later when the battery is depleted.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. Should a complication occur, another life-saving procedure or treatment may be required immediately. For further information please contact your doctor.

Reference

Hospital Authority – Smart Patient Website

I acknowledge that the above information concerning my operation/procedure has been explained to me by Dr. _____. I have also been given the opportunity to ask questions and receive adequate explanations concerning my condition and the doctor's treatment plan.

Patient / Relative Name

Signature

Relationship (if any)

Date