Gleneagles Hospital
HONG KONG
港怡醫院

Hosp No.	:	HKID No.:	
Case No.	:		
Name	:		
DOB	:	M / F	
Adm Date	:		
Contact No.	:		

Procedure Information Sheet – Permanent Cardiac Pacemaker

1. Introduction

1.1. 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.

2. Importance of Procedure

2.1. 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.

3. Before the Procedure

3.1. You need to sign an informed consent.
3.2. You will be invited to a ward or a clinic for some preliminary tests including electrocardiogram, chest X-ray and blood tests. Alternatively, because of emergency situation, you may already have a temporary cardiac pacing performed.
3.3. 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.
3.4. An IV infusion will be set up and you need to fast for 4-6 hours.
3.5. Shaving near the implant site may be required.
3.6. 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.

4. The Procedure

4.1. 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.
4.2. 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.
4.3. Skin disinfection will be performed and a small skin incision (about 3-5 cm long) will be made under your left (sometimes right) clavicle.
4.4. 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.
4.5. Leads will be advanced to your heart chambers through your vein under X-ray guidance.
4.6. The generator will be connected with the lead(s) and implanted in a pocket created under the skin or muscle.
4.7. The wound will be closed with suturing material and covered with pressure dressing.
4.8. The procedure usually takes around 1 to 2 hours.

5. After the Procedure

5.1. After the procedure, you will be kept on close monitoring in the ward.
5.2. Nursing staff will check your pulse and wound regularly.
5.3. You should inform your nurse if you find blood oozing from the wound site.
5.4. You may resume oral diet as instructed.
5.5. Mild wound pain is common. You may take simple analgesic to relieve pain.
5.6. Antibiotics will be given for a few days to minimize the risk of wound infection.
5.7. Pre-discharge pacemaker programming may be performed.

5.8. You may be discharged from hospital 1-2 days after the PCP implantation.

6. Follow Up

6.1. 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.
6.2. 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.
6.3. Please avoid lifting the affected arm for 1 week, and avoid vigorous arm movement in the first month after the procedure.
6.4. You will be arranged to attend pacemaker clinic for regular pacemaker analysis re-programming and battery power assessment.
6.5. Please carry your pacemaker identity card at all times.
6.6. 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 >15cm (6 inches) from an active mobile phone. Household electrical or electronic appliance usually does not affect pacemaker.
6.7. The generator will need to be replaced several years later when the battery is depleted.

7. Risk and Complications

7.1. The procedure carries certain risks. The overall complication rate is around 3%.
7.2. Major complications include death (<0.1%) and serious heart or lung perforation (<0.1%).
7.3. Other potential risks include wound infection (<1%), wound haematoma (<1%), vein thrombosis (<1%), air embolism, contrast allergy, vascular injury, pneuomothorax and haemothorax.
7.4. Special risks related to the device include lead dislodgement, insulation break or fracture, and pocket erosion.

8. Remarks

8.1. It is hard to mention all the possible consequences if this procedure is refused.
8.2. The list of complications is not exhaustive and other unforeseen complications may occasionally occur. The risk quoted is in general terms. In special patient group, the actual risk may be higher.
8.3. Should a complication occur, another life-saving procedure or treatment may be required immediately.
8.4. If there is further query concerning this procedure, please feel free to contact your nurse or your doctor.

9. Reference

9.1. American College of Cardiology Foundation, American Heart Association (2008). Guidelines for Device-based Therapy of Cardiac Rhythm Abnormalities.
9.2. Hospital Authority. Smart Patient Website.

I acknowledged the above information concerning the operation or procedure. I have also been given the opportunity to ask questions and received adequate explanations concerning the condition and treatment plan.

Patient/ Relative Signature: _____

Patient/ Relative Name: _____

Date: _____