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London Bridge Hospital
Cromwell Hospital
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NHS:
King's College Hospital

Outer London Consulting Rooms:
Blackheath Hospital
Chelsfield Park Hospital
Shirley Oaks Hospital
Sloane Hospital

INFORMATION FOR PATIENTS UNDERGOING PACEMAKER INSERTION

Your doctor has recommended that you require a pacemaker. This can be for a number of reasons:

- Your heart goes too slowly which may cause you to feel breathlessness, dizzy or even blackout
- The doctor needs to give you medication which may make your heart go too slowly
- The pacemaker may help to prevent some abnormal fast heart rhythms
- If you have a weak heart certain types of pacemaker may improve its pump function

Your doctor will have discussed this with you but if you have further questions, do ask.

IMPORTANT

- **If you are taking warfarin we will need to ensure that your INR (a measure of your blood's thinness) has been well controlled prior to the procedure. We will also need to control it for the procedure. Please arrange to have your INR checked 5 days before your procedure. Phone us on that day so that we can advise you whether to stop the warfarin. If this coincides with a weekend, phone us at the earliest opportunity. Please have your yellow book to hand when you phone. You MUST tell us if you are taking warfarin for an artificial heart valve or a recent clot in the leg (deep vein thrombosis /DVT) or on the lung (pulmonary embolus /PE).**
- **If you are taking Clopidogrel (Plavix) you will need to stop this 5 days prior to your procedure. However if you have had an angioplasty (balloon treatment to one of your heart arteries) please phone us for advice before stopping. This also applies to other blood-thinning drugs. If in doubt, ask.**
- **Please take all of your other tablets on the day of your admission and bring them with you.**
- **If there is any chance that you may be pregnant please let us know.**
- **If you are taking antibiotics on the days leading up to your procedure, please let us know so that we can advise you what to do.**

You will usually be admitted the day of your procedure and should expect to stay in for a minimum of one night. On the morning of your procedure you will be asked to take a shower or bath as this helps reduce the risk of infection. You must also not have anything to eat or drink for four hours before the procedure.

The procedure usually takes place in one of the Cardiac Catheter Labs. There will always be a nurse available to explain what is happening.

A pacemaker consists of a metal box, which contains a battery and computer circuitry and one or more wires which connect the pacemaker box directly to your heart muscle. The pacemaker detects your heart's electrical activity and if necessary, using a small electric charge passed through the wires, can cause your heart to beat. The procedure to implant the pacemaker usually takes about an hour and a half. Occasionally in difficult cases it can take two to three hours. This is especially likely if you are receiving a pacemaker to help the pumping action of your heart (so-called CRT or biventricular pacemakers).

This procedure is generally performed under local anaesthetic; you will also receive some sedation (as much as you wish). A 5-7cm incision is made by your left shoulder (if you are right-handed, vice versa if you are left-handed) just under your collarbone. A wire (or wires) is passed into your heart through a vein either in your shoulder or just under your collar bone. Once in the correct place, the wire is secured to reduce the chances of it moving in everyday life. Once the wires are in the correct position, the pacing box is then attached and inserted under the skin. Finally, the wound is stitched closed. These stitches are usually dissolvable and therefore do not require removal. For the procedure you will be given a course of antibiotics (before and afterwards) to prevent pacemaker infection. The antibiotics usually used are Penicillin-based. Therefore **it is very important to inform staff if you are allergic to penicillin**. If this is the case an alternative antibiotic is used.

You will stay overnight after the procedure and on the following day will have a chest x-ray to check the position of the pacemaker wires and a pacemaker check to make sure that all is well. If all goes well, we will discharge you the day after the procedure with a follow-up appointment in the pacing clinic in six weeks.

You may notice some pain after the procedure but this should not be too bad. It can usually be relieved with 'over-the-counter' pain killers, such as paracetamol. Shoulder stiffness can develop if you are reluctant to use the affected arm soon after implantation. Gentle arm movements the day after the procedure are advised to prevent this. You are advised that when doing these gentle movements you should **NOT** lift the arm on the pacemaker side above shoulder height. Do discuss what effect this procedure may have on your home life and work with one of the doctors or nurses.

You will be given a pacemaker identification card – please carry this with you at all times.

You are not allowed to drive after a pacemaker for one week if you hold a normal driving licence. This is a DVLA requirement. If you have a commercial licence this is extended to six weeks, and you should always let the DVLA and your car insurance company know what you have had done.

Complications

This procedure cannot be performed without some element of risk; you need to understand the possible complications before you sign the consent form. It is important that you understand these are uncommon and unpredictable. The majority of patients have no problems. The possible complications are listed below for your information:

Pneumothorax (air leak around the lungs): this occurs in *approximately 1 in 100 patients*. The veins used to get the pacemaker wires to your heart lie very near to the lung. It is possible to nick the lung on the way past causing an air leak. Sometimes this resolves on its own. Occasionally a chest drain is needed; if so, your stay in hospital may be delayed by several days.

Pericardial effusion (blood leak around the heart): this occurs in *approximately 1 in 500 patients*. When the wire is positioned in the heart it can cause a fluid collection around the outside of the heart. Sometimes this resolves on its own but occasionally a drain is needed; very rarely an operation is needed. If so, your stay in hospital may be delayed by several days.

Infection: this occurs in *approximately 2 in 100 patients*. Antibiotics are given routinely to

help prevent this.

Haematoma (severe bruising): this occurs in *approximately 4 in 100* patients. Rarely this bruising may need drainage. Patients taking blood thinning drugs are more prone to haematoma formation.

Wire displacement: this occurs in *approximately 5 in 100* patients. This causes the pacemaker to pace inappropriately. In most cases the wires need to be repositioned requiring further surgery.

X-rays:

Your examination and/or treatment involves a period of x-ray scanning that will give you a relatively small x-ray dose. In some cases where we need to do more extensive investigation and treatment, there is a small chance that you will get a skin reddening reaction like sunburn which will fade after a few days. Please ask the radiographer if you require further information.

Items which you should bring with you:

Current tablets/medicines including your yellow warfarin book if you have one, details of your GP, next of kin and one other person (telephone numbers at home and at work), dressing gown, pyjamas/night dress.

You may also need:

Slippers, shaving equipment, mirror, comb/brush, flannel/sponge, towel, clothes for travelling home, change for the phone, reading glasses and hearing aid (if required).

You should not bring:

Television, jewellery (except wedding ring), large amounts of money.

When you come into hospital, further advice will be available from the doctors and nurses.