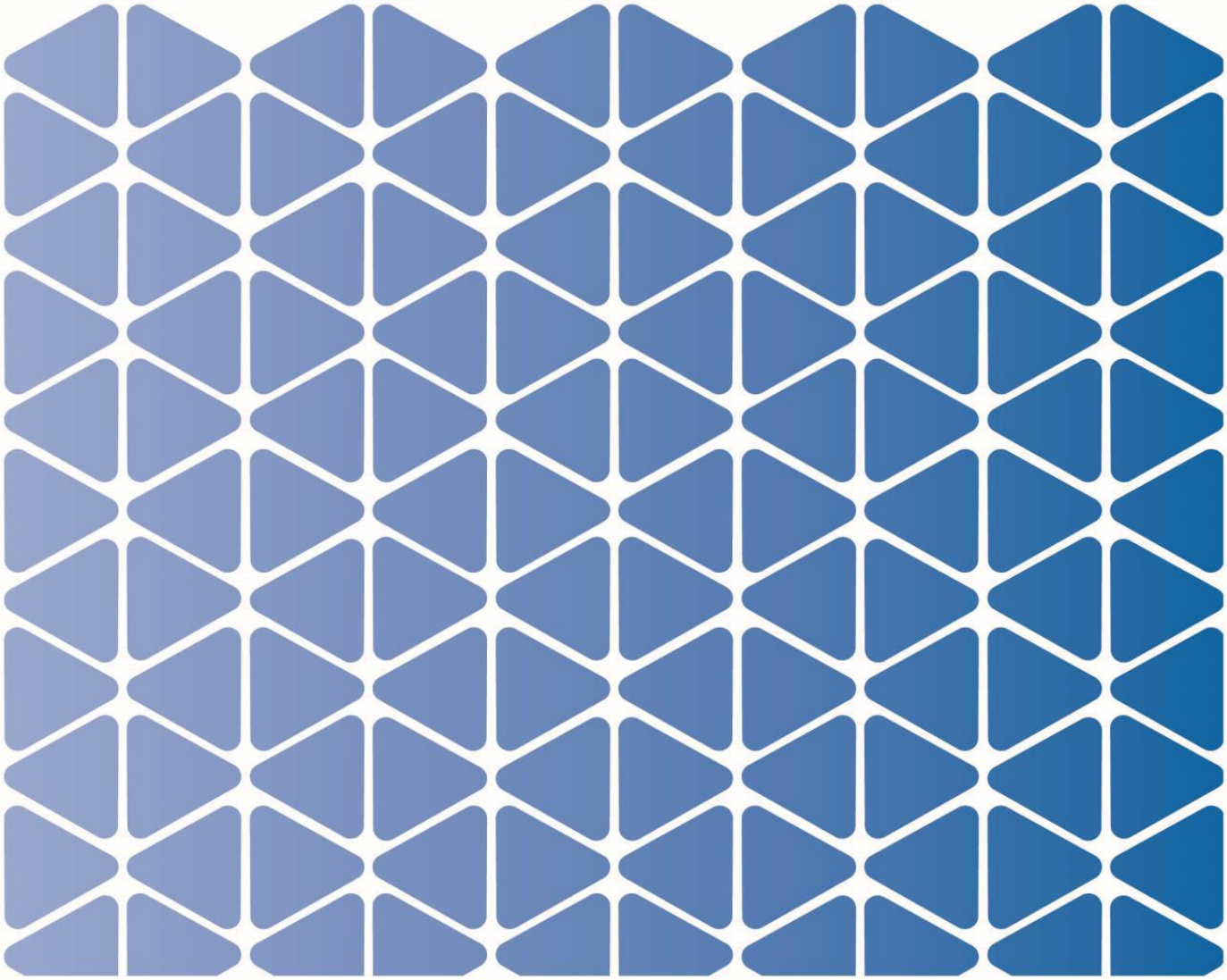
PATIENT INFORMATION

ATRIOVENTRICULAR (AV) NODE ABLATION



It has been recommended that you have an AV node ablation in order to treat your atrial fibrillation (AF) that has not responded to medication. This leaflet is in two sections. The first section is a summary of the procedure, its risks and benefits The second is more detailed information about the procedure and immediate time before and after the procedure, including the risks and benefits.

Section one: summary information

Summary of the procedure itself

The procedure is performed under local anaesthetic, with the option of sedation. X-ray guidance will be used so if you think you might be pregnant please do let us know before your procedure. Local anaesthetic is injected into the skin in the groin (usually on the right) and a small tube (sheath) is placed in the vein at the top of the leg. A special ablation catheter (thin, flexible wire) is guided up into the heart chamber to reach the AV node. Radiofrequency energy (heat) is passed through the catheter to destroy (ablate) the node. This blocks the connection between the upper and lower chambers of the heart (the AV node) which stops the fast, irregular impulses reaching the ventricles (lower chambers).

After the procedure, your underlying heart rate will be too slow, and you will need a permanent pacemaker (PPM). If you do not have one of these already, this will usually be implanted at least 6 weeks before your AV node ablation. A pacemaker is a small battery operated device that senses if your heart is beating too slowly and sends out signals, if needed, at a steady rate.

Summary of the benefits

The procedure has three main benefits:

- Excessively rapid heart rates for a prolonged period of time can cause heart damage. Following this procedure, your heart will no longer beat rapidly but will be appropriately controlled by your pacemaker.
- Your heart rhythm will be regular and you may no longer require some of your medications to control your heart rhythm (you will be advised by your doctor as to which ones you may stop taking).
- Often an excessively high heart rate causes symptoms, so it is likely those symptoms will improve after the procedure. Additionally, sometimes symptoms are due to side effects from medications required to slow the heart down – and after the procedure it is often possible to stop some of those medications and therefore any side effects from medications can be reduced.

Summary of risks

AV node ablation is a low risk procedure and is considered very safe. The main risks are –

- Damage to a blood vessel at the top of the leg
- Bleeding around the heart requiring insertion of a small drain
- Stroke (very rare)
- Blood clots in the veins at the top of the leg, or within the heart, that can occasionally pass to the lungs (embolus).
- Pacemaker wires may be dislodged or damaged by the procedure requiring a further procedure to rectify.

Section 2: Detailed information about AV node ablation:

This leaflet explains some of the benefits and risks of the procedure. We want you to have an informed choice so that you can make the decision that is right for you. Please ask the cardiology team about anything you do not fully understand or want explained in more detail.

We recommend you read this leaflet carefully. You and a member of the cardiology team will need to record your agreement to the procedure by signing a consent form, which you will be given.

What is an AV node ablation?

The AV node is a small area of tissue which sends an electrical heartbeat signal from your upper chambers (atria) to your lower chambers (ventricles) of your heart. An AV node ablation is usually reserved for patients in whom all other treatments of atrial fibrillation have been ineffective. It is a minimally invasive procedure that uses heat energy to strategically damage your AV node. This will prevent any of signals in the atrium (which is fibrillating) reaching the ventricles. Your pacemaker will now have complete control of your heart rhythm which will be regular and will no longer race rapidly.

What is atrial fibrillation?

Atrial fibrillation (AF) is one of the most common types of rhythm disturbance. It is due to disorganised / chaotic electrical activity in the upper chambers of your heart. When it occurs, the rapid chaotic activity can drive the pumping chambers (ventricles) very rapidly and erratically as these impulses override the heart's natural pacemaker. During AF patients can be troubled by uncomfortable palpitation, shortness of breath, dizziness, fatigue and exercise intolerance. In rare cases, fast heart rates from AF can lead to a weakening of the heart muscle (heart failure).

Why do I need this procedure?

In most cases, AF can be treated with medications, which can be very effective. In some people the option of a catheter ablation procedure to try to stop the AF is appropriate, which is a minimally invasive procedure intended to control AF. However, if all other treatments have not worked, AV node ablation is an option for those who already have a pacemaker, cannot tolerate medications to control the abnormal heart rhythm due to side effects, or have failed to control AF with medications or catheter ablation.

How is the procedure performed?

Before the procedure you will have a cannula (thin plastic tube) inserted in a vein in your arm. You will be taken to the procedure room (known as the cardiac catheter lab) and will lie on the bed. Sometimes sedation is given to make you feel more comfortable during the procedure. After pre-procedure final checks, the top of your leg will be cleaned with antiseptic. Local anaesthetic will be injected using a small needle.

A small tube will be placed in the femoral vein at the top of the leg and a thin wire will be passed through this into the heart. You should not feel much when the wires are passed; the local anaesthetic stings but typically you will not feel much after that.

Once the wire is positioned and the exact location of the AV node has been found, radiofrequency energy is applied to the area through the wire. The AV node is permanently damaged to the extent that it can no longer cause the abnormal conduction and rhythm problems. It can be tricky to find the exact spot, but it is usually possible to identify the area within a few minutes.

After a successful AV node ablation, the pacemaker will be checked and reprogrammed to pace your heart a little faster for a few weeks; you will then need to attend the pacing clinic to have the rate reprogrammed to a more normal long term level.

Intended benefits of the procedure

The aim of the procedure is to permanently eliminate the rapid, irregular impulses, caused by AF from reaching the ventricles.

Limitations of an AV node ablation

An AV node ablation is a permanent procedure which cannot be reversed. You will be dependent on a pacemaker for the rest of your life. An AV node ablation does not cure AF and will not convert AF to a normal rhythm (sinus rhythm). Your atria will still beat quickly and erratically (fibrillate). You will have to continue to take a blood thinner to prevent strokes.

Success rates
The success rate for this procedure is over 90%. In the rare event that the procedure is unsuccessful it may be possible to repeat it at a later date.

Serious or frequent risks
As with any procedure that involves implanting something in the body, the procedure does carry some risks, although these are quite small. Complications can generally be treated and are very rarely life-threatening.

At the time of the procedure, there may be –

- Accidental damage to blood vessels (most commonly at the top of the leg) (approximately 0.5-1%)
- Discomfort or pain during the procedure. It is done under local anaesthetic and sedation can be given so you should tell the nurse if you are finding the procedure uncomfortable so more pain relief or sedation can be given.
- Bleeding around the heart requiring emergency insertion of a small plastic tube (drain) through the upper abdomen to remove the blood that accumulates and allow the leak to heal (approximately 0.5-1%)
- Reaction to the drugs used to sedate you.
- Changes in heart rhythm requiring emergency treatment (there will always be adequate equipment and staff available to deal with this during the procedure).
- Rarely (less than ½ %), a stroke can occur due to a small blood clot forming in the left side of the heart and passing up to the brain.
- Blood clots in the legs that can then embolise (move to the lungs) is a rare but serious complication.
- The procedure may cause dislodgement or damage to one or more of your pacemaker wires, which would require a further procedure to rectify.

After the procedure there may be –

- Bleeding from the groin; it is common to have minor oozing but if a blood vessel has been damaged then there may be significant bruising and / or swelling around the site of the punctures.
- Chest pain. Discomfort is common after ablation procedures but is not usually severe and responds well to standard painkillers.

These risks are all rare but it is our duty to make you aware of them before you sign the consent form. Please do not hesitate to ask the doctor any questions you may have to help allay any concerns prior to signing the consent form.

You will be cared for by a skilled team of doctors, nurses and other professionals. If problems arise, we will be able to assess them and deal with them appropriately.

Before you come into hospital
You will receive a letter from the hospital explaining your admission date and where to go.

Instructions for eating and drinking
It is important that you follow the instructions we give you about eating and drinking.

If your planned procedure is early in the morning (admission time before 9am), you should have nothing to eat that morning before the procedure. If your planned procedure is later (morning admission after 9am), please have a normal breakfast no later than 7am on the day of the procedure. If your admission is 12pm or later, please have a normal breakfast and nothing to eat or drink after 10am.

Your usual medicines
We will usually ask you to continue with your normal medication (except as instructed below), so please bring it with you. You may have sips of water with any medications you have to take on the morning of the procedure.

Clopidogrel / Prasugrel / Ticagrelor / Dipyridamole (antiplatelet drugs)
If you are taking these types of blood thinners, you should continue them including on the day of the procedure. **Please do not stop taking any of these medications unless specifically instructed to.**

Dabigatran / Rivaroxaban / Apixaban / Edoxaban (anticoagulants)
If you are taking these types of blood thinners, you should continue them **except** on the day of the procedure. **Please do not stop taking any of these medications apart from the day of your procedure.**

If you take warfarin, please ensure you have a blood test for your INR done 24-48 hours prior to the date of your procedure. If you are able to find out the result and bring that with you it is helpful.

Medications to control your heart rhythms
You should receive clear instructions on what to do. Please continue to take these as prescribed. These medications can be discussed in more detail after your procedure. **Please ensure you ask what to do if you are not sure.**

Diabetes
If you are **diabetic,** you should follow the appropriate instructions below.

Diabetes treated with a special diet:
You do not need to follow any specific instructions other than the above.

Diabetes treated with tablets:
Take all your diabetic tablets as normal (with a sip of water).

Diabetes treated with insulin:
If you take insulin you should not take your usual dose on the morning of your procedure. The nurses will do regular checks on your blood sugar levels. You will be able to have some food and drink after your procedure. Please bring your insulin with you so that you can have your usual dose at this time.

If you have any questions or concerns about your diabetic treatment, please contact whoever normally advises you about your diabetes.

What to do if you feel unwell before attending for your procedure
If you don't feel well and have a cough, a cold or any other illness when you are due to come into hospital for your procedure, we need to know. Depending on your illness and how urgent your procedure is, we will advise you whether or not your procedure should be delayed.

On the day of the procedure
You will usually be admitted to the cardiac catheter lab unit on the day of your procedure so that we can prepare for your procedure. We will welcome you to the ward and check your details. We will fasten an armband containing your name and hospital information to your wrist. We will ask you to change into a gown ready for your procedure. You will have an ECG (heart trace) performed.

Before your procedure you will be seen by a member of the cardiology team who will check that everything has been arranged correctly for you to have your treatment. A cannula (fine plastic tube) will be inserted into a vein in your arm so that we can give you any treatments required during the procedure. Please let us know in advance if you are allergic to any medications.

Very occasionally it may be necessary to cancel your procedure at the last minute (i.e. after you have arrived in the hospital); this may occur due to equipment failure or unexpected complications from an earlier procedure. We will do our best to minimise the risk of this happening and if it does we will rebook you at the earliest opportunity.

During the AV node ablation

The procedure is undertaken in a Cardiac Catheter Laboratory equipped with an X-ray camera facility, monitoring equipment and a table on which you will be asked to lie for the duration of the procedure. The procedure (or parts of it) may be carried out by a suitably qualified trainee doctor but all parts will always be directly supervised by a consultant.

You will be taken from the ward by a nurse or healthcare assistant and will be handed over to the care of a nurse or support worker who will stay with you throughout your procedure.

The procedure usually takes less than one hour, during which time you may be given a sedative injection into the tube in your arm to make you feel pleasantly drowsy. You will also be attached to a heart monitor throughout the procedure. After this, the top of your right leg may be shaved if necessary, cleaned with a skin disinfectant preparation and injected with a local anaesthetic.

A tube will be inserted into the vein at the top of the leg. A thin wire is passed through the tube up to the heart – it is unusual to feel anything as the wire passes up through the body. It is positioned in the relevant area of the heart, at the location of the AV node.

A small burn will be delivered to the AV node through the tip of the catheter. This essentially destroys this electrical conduction pathway by creating a scar (scar tissue cannot conduct electrical impulses). During this, you may feel some discomfort in your chest (sometimes in other areas such as your shoulder, jaw, arm, or upper abdomen). It is important to try to avoid taking large breaths during this time, and to avoid excessive movements.

After the procedure is complete the catheter and tube at the top of your leg will be removed. Firm pressure will be applied to your groin, where the tube was inserted, to stop the bleeding.

Before your leave the catheter lab the cardiac physiologists will check your pacemaker and re-program it as necessary.

After your procedure

You will return to the catheter lab day unit. The nurse will check your pulse and blood pressure and monitor groin site(s) for any signs of bleeding or swelling. If you have had sedation you will need to rest in bed for a couple of hours, depending on how sleepy you are. You will be required to stay in bed for 2 hours to allow the vein punctures to heal up. A nurse will perform an ECG on the ward.

You will then be able to get up and dressed and walk around. You can eat and drink as soon as you feel like it so long as the nurses are confident you are sufficiently awake.

Leaving hospital

Most patients having this procedure will be in hospital most of the day, but will not need to stay overnight. You may find that you feel slightly drowsy for a couple of days, while you are recovering from your procedure and particularly from the
effects of the sedation. It is, therefore, wise not to make any important life changing decisions until these feelings have worn off.

We advise that there is a responsible adult present with you for 24 hours following the procedure. If this will not be possible, please ensure you discuss it with the team prior to the day of admission.

You will have some bruising around the wound area and this is quite normal, but the wound itself should not be actively bleeding or swollen. If you have any concerns, please contact us – contact details are on the advice sheet given immediately after the procedure. It is generally much better to contact us rather than your GP or practise nurse as we deal with these procedures all the time.

You are advised not to do any heavy lifting, such as carrying shopping bags or moving heavy furniture for 48 hours after the procedure. Don't be afraid to ask for help from your family and friends and take it when it is offered.

You cannot, by law, drive for **at least** two days after the procedure and so you cannot drive yourself home; after that time, it is ok to resume driving so long as you are confident that your leg has healed to the extent that you would have no difficulty performing an emergency stop if required.

Medication when you leave hospital

If you take any blood thinners, we will usually ask you to continue them.

If you are not taking any blood thinners, you will need to take a mediation to reduce the risk of clots if an ablation was performed. Aspirin 150mg once daily or (if intolerant to Aspirin) Clopidogrel 75mg once daily is required for six weeks after the procedure.
We can issue a prescription for this medication but (in the case of Aspirin) you may find it easier and cheaper to buy it 'over the counter' from a pharmacy. You should ensure you know what you should be taking before you leave hospital.

Convalescence
How long it takes for you to recover fully from your procedure varies from person to person. Once home, it is important to rest quietly for the remainder of the day.

Most people feel some discomfort at the top of the leg for the first few days. You can take a simple pain killer such as paracetamol. We recommend that you are not alone at home the night after your procedure.

Groin wound
If you experience any obvious bleeding from the groin or any swelling or troublesome pain around where the tubes were inserted, you should seek further help and advice (see below). It is usually better to contact the hospital team rather than your GP as we are more familiar with problems that may arise from these procedures.

Exercise
For the first 48 hours after the procedure you should avoid any strenuous exercise – limit yourself to gentle walking.

For the following 7 days, you can gradually increase your exercise levels up to normal.

Work
When you return to work will depend on your job. If your job involves heavy manual work you may be advised to take some time off. If your job does not include manual work or lifting you may be able to return to work within a few days of your procedure.

Communication
A report of your procedure will be sent to your doctor (GP) within a few days.

Follow-up arrangements
You will receive a follow-up appointment in the pacing clinic to reprogram the device back to a more normal heart rate, about 6 weeks after the procedure.
You will receive a follow-up appointment in the arrhythmia clinic, typically 3 months after the procedure unless stated otherwise. If you have not received an appointment within 5 months of the procedure, please telephone Dr Foster's secretary on 01905 760217 to explain the situation.

Contact details

If you have any specific concerns that you feel have not been answered and need explaining, please contact the following:

Arrhythmia team secretary (Lauren Neathway), telephone 01905 760217
Arrhythmia Clinical Nurse Specialists, telephone 01905 760 868
Coronary care unit (Worcester) – for out of hours emergencies, telephone 01905 760561

Additional Information

The following Internet websites contain additional information that you may find useful:

www.patient.co.uk
Information fact sheets on health and disease.

www.nhsdirect.nhs.uk
On-line Health Encyclopaedia and Best Treatments website.

www.bhf.org.uk
British Heart Foundation website.

www.heartrhythmcharity.org.uk
Arrhythmia alliance website

If your symptoms or condition worsens, or if you are concerned about anything, please call your GP, 111, or 999.

Patient Experience

We know that being admitted to hospital can be a difficult and unsettling time for you and your loved ones. If you have any questions or concerns, please do speak with a member of staff on the ward or in the relevant department who will do their best to answer your questions and reassure you.

Feedback

Feedback is really important and useful to us – it can tell us where we are working well and where improvements can be made. There are lots of ways you can share your experience with us including completing our Friends and Family Test – cards are available and can be posted on all wards, departments and clinics at our hospitals. We value your comments and feedback and thank you for taking the time to share this with us.

Patient Advice and Liaison Service (PALS)

If you have any concerns or questions about your care, we advise you to talk with the nurse in charge or the department manager in the first instance as they are best placed to answer any questions or resolve concerns quickly. If the relevant member of staff is unable to help resolve your concern, you can contact the PALS Team. We offer informal help, advice or support about any aspect of hospital services & experiences.

Our PALS team will liaise with the various departments in our hospitals on your behalf, if you feel unable to do so, to resolve your problems and where appropriate refer to outside help.

If you are still unhappy you can contact the Complaints Department, who can investigate your concerns. You can make a complaint orally, electronically or in writing and we can advise and guide you through the complaints procedure.

How to contact PALS:

Telephone Patient Services: 0300 123 1732 or via email at: wah-tr.PALS@nhs.net

Opening times:

The PALS telephone lines are open Monday to Thursday from 8.30am to 4.30pm and Friday: 8.30am to 4.00pm. Please be aware that a voicemail service is in use at busy times, but messages will be returned as quickly as possible.

If you are unable to understand this leaflet, please communicate with a member of staff.