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No of Badges required:

I enclose a cheque/postal order for £..... payable to TAKE HEART



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I would like to make a donation of £..... to TAKE HEART

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If you are a UK taxpayer, the Charity can benefit further from your donation.

If you would like further details, please tick this box:

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Donations are always welcome and will be acknowledged, and published in our newsletter

*Please send completed Membership/Donation Forms to:
The Secretary, Take Heart, The Yorkshire Heart Centre, 'F' Floor, Jubilee Wing,
The General Infirmary at Leeds, LS1 3EX. Tel: 0113 392 2888. Fax: 0113 392 5222.*

500/10/11

TREATING ATRIAL FIBRILLATION WITH CATHETER ABLATION

It has been decided by you and your doctor that you are suitable to undergo catheter ablation for atrial fibrillation. The information provided in this booklet is designed to help you to understand more about the ablation procedure. It should be used in addition to the information given to you by doctors and nurses. If you have any questions please ask your doctor or specialist nurse.

Normal Heart Rhythm

The heart is divided into two upper chambers (atria) and two lower chambers (ventricles). Usually, the heart beats in a regular way and a normal heart beat is initiated by the sinus node, an area of specialised pacemaker cells which are situated in the right atrium (Figure. 1). An electrical impulse is

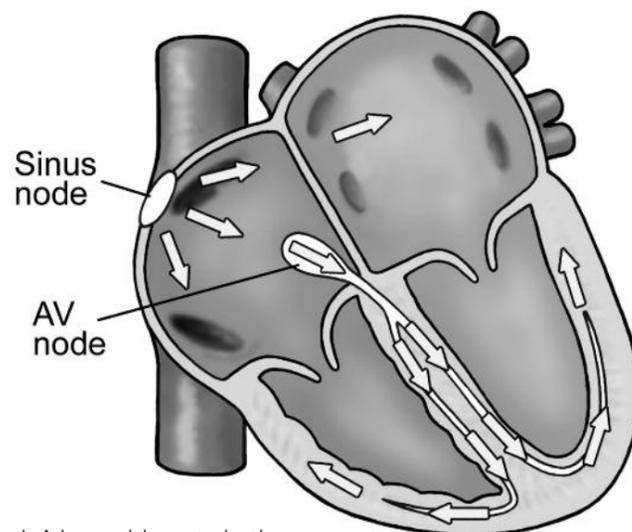


Figure 1: Normal heart rhythm

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generated by the sinus node which spreads through the right and left atria before being conducted to the ventricles via the atrio-ventricular (AV) node. When the heart beats normally, this is termed "sinus rhythm".

Atrial Fibrillation (AF)

Atrial fibrillation is an irregular heart beat, often fast, resulting from chaotic rapid electrical activity in the upper chambers (atria). This irregular rhythm can often conduct rapidly to the lower chambers (ventricles) via the AV node and can cause symptoms such as palpitations, breathlessness, chest pain and light headedness. If these episodes are intermittent, then it is called paroxysmal AF. In other patients, the heart rhythm is always irregular and may then be called persistent or permanent AF.

A range of treatments can help with atrial fibrillation. Medication can be effective in preventing episodes from occurring or may be used to control the rate at which the ventricles beat in patients with persistent or permanent AF, often combined with a blood thinner (aspirin or warfarin) to prevent complications such as a stroke. Normal heart rhythm can also be restored by resetting the heart with an electrical shock whilst you are asleep (cardioversion). When medicines or cardioversion fail to control the symptoms of atrial fibrillation, catheter ablation may be considered.

What is ablation?

Ablation is a procedure that uses energy (usually radiofrequency) to destroy or isolate sources of abnormal electrical impulses that can cause or maintain AF. It is performed by placing catheters into the heart through a vein usually in the groin or occasionally the arm or neck, guided by x-ray. The term ablation means making small burns in the heart tissue in order to cause a small scar, which can no longer conduct abnormal impulses. Most healthy tissue is unharmed.

*Author
LTHT arrhythmia team*

Useful contact numbers for advice

Craig Russell (specialist nurse)	0113 392 5884	Mobile: 07765 403828
Keith Tyndall (specialist nurse)	0113 392 3222	Mobile: 07956 258513
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Arrhythmia Nurses Fax:	0113 392 5513	

Left atrial ablation for AF

Paroxysmal atrial fibrillation often originates from the four pulmonary veins that drain blood from the lungs into the left atrium (Figure. 2). With this procedure, catheters are placed in the heart and guided to the left atrium. Ablation is then performed around the pulmonary veins to prevent the abnormal electrical impulses from entering the left atrium and causing AF. The particular pattern of ablation performed varies from specialist to specialist. In patients with persistent AF, additional lines of ablation in the left atrium may be required. This type of ablation procedure is usually reserved for patients who have significant symptoms from their atrial fibrillation and have failed medication.

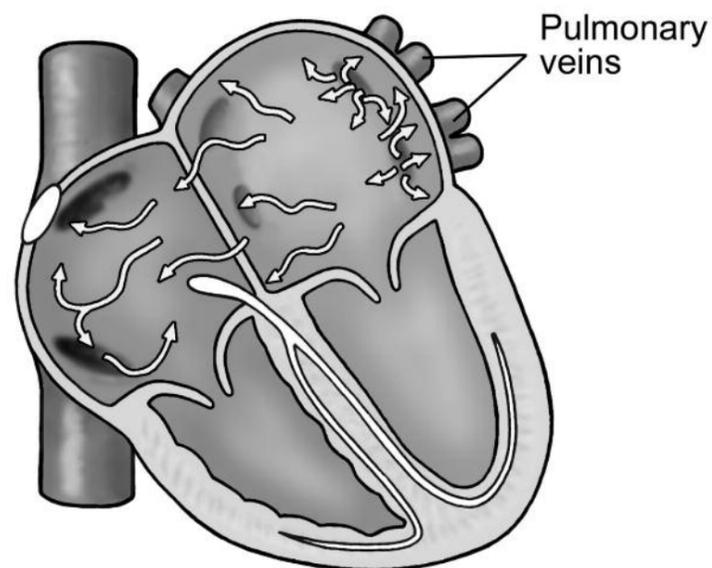


Figure 2: AF originating from the pulmonary veins

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During the ablation, you may feel some chest discomfort and a nurse will be monitoring you closely. You will routinely receive pain killer during the ablation and if it becomes too unpleasant, further medication and sedation can be given. At the end of the procedure, you may also require a cardioversion to reset your heart rhythm back to normal. This involves delivering an electric shock to the heart after giving you additional sedative so that you are asleep.

Are there any risks of the ablation?

Although serious complications arising from catheter ablation are uncommon, there is always a small risk that they can occur. It is important that you understand what these risks are so that you can make an informed decision as to whether you want to go ahead with the ablation. Your doctor will discuss these risks with you before you decide to proceed.

Minor problems such as chest pain or bruising in the groin are common and usually settle spontaneously. More serious complications occur in up to 3-4% of patients and are listed below.

- **Stroke:** Caused by a blood clot or bleeding from one of the arteries in the brain
- **Heart perforation:** Catheter ablation may cause a hole in the heart. This can cause blood to accumulate in the sack surrounding the heart, preventing it from pumping normally. This is called "tamponade" and must be treated by immediately draining the blood to relieve the pressure. This is done by passing a small tube through the chest into the sack around the heart. Very occasionally, this is not possible and emergency surgery may be necessary.
- **Pulmonary vein stenosis:** Ablation is performed around the pulmonary veins and occasionally this can cause them to narrow (stenose). This may not cause any immediate symptoms but it is possible to experience

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shortness of breath or a cough which may be bloodstained. Fortunately, this complication is now relatively uncommon since newer ablation techniques have emerged.

- **Other:** There are other very rare complications such as paralysis of the diaphragm and perforation of the gullet
- **Death:** This is very rare. A worldwide survey of catheter ablation for AF showed that death occurred in 1 in every 2000 procedures (0.05%)

After the procedure

You will be returned to the ward and usually attached to a cardiac monitor. You will also have your blood pressure monitored and groins checked regularly. You will be able to eat and drink on returning to the ward but will have to remain on bed rest for a period of time. If you are already taking warfarin this will normally be continued. If you are not, then this will normally be recommended for some months following the procedure to reduce the risk of stroke. You may receive an injection of a blood thinning medication on the evening and morning after the procedure. You will subsequently be seen in the outpatient clinic by your doctor after 6-8 weeks who will review your medication at that stage.

What to expect in the first few days and weeks after ablation

Most patients recover quickly after the ablation although it is common to feel below par for several days, particularly if you have been given a lot of sedation. Your groins may feel bruised and you should avoid heavy lifting for at least 3 days following the procedure. If there is active bleeding, or a large lump develops after you have gone home, it is important to seek medical advice.

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It is very common to experience pains in the chest, shoulder or neck that may catch your breath in the first few days or weeks that are related to the inflammation resulting from the ablation. You can take simple painkillers such as paracetamol to ease the symptoms.

It is not uncommon to experience short lived palpitations after an ablation. These may feel like missed beats. This will settle down in due course.

Your symptoms of atrial fibrillation may come back. This can happen early on after the procedure and may settle down. Provided that you are not overtly unwell with this you do not need to be concerned. This may require adjustment of your medication. It is also helpful if you are able to get an ECG recorded if you think that your AF is back. Your GP may be able to organise this. It may be that you will need to have another procedure and we will discuss this with you when we see you in clinic.

If you are worried by symptoms or feel particularly unwell you may contact the arrhythmia nurses for telephone advice. One of the arrhythmia nurses will normally see you prior to discharge and give you their contact details. These can also be found at the back of this booklet.

DVLA rules state driving can be resumed after 48 hours though you may wish to wait a little longer particularly if your groin area is uncomfortable. The DVLA need not be notified routinely.

Drivers of HGV and public service vehicles should normally be able to resume work after 2 weeks unless your AF has caused faintness or loss of consciousness. It is wise for HGV licence holders to discuss licensing with the DVLA.

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Before the procedure and pre-assessment

- If you are not on warfarin we will either refer you to the anticoagulation clinic or your GP to get it started.
- You will be invited to attend a pre-admission clinic a few days before the ablation. Please ensure that you have not had anything to eat or drink from midnight.
- We will fill in our pre-assessment form and take a note of your medication.
- Your blood will be tested. In particular, we will check your INR levels to ensure that your blood is neither too thick nor thin for the procedure. Generally we will ask you to continue taking your usual dose of warfarin, however we may advise you to amend the dosage or stop warfarin before the procedure.

There will be opportunity to discuss the procedure with a Nurse Specialist and hopefully any questions you have will be answered

You will also find out whether you need to avoid eating and drinking prior to admission and instructions will be provided regarding your current medications such as which to stop and for how long beforehand.

After seeing the nurse you may need to have an ultrasound scan of the heart called a trans-oesophageal echocardiogram. The purpose of this test is to view the heart in detail and ensure that there are no blood clots within the heart which could lead to stroke if an ablation procedure is performed.

How this is done

Your throat will be sprayed with a local anaesthetic to make it numb. You may then be given sedation into a vein. Following this you will be asked to swallow a probe into your gullet and stomach. The test takes about 30 minutes. Common side effects of the test include a sore throat and discomfort during the procedure. Although there is a risk of damaging your foodpipe, this is very rare.

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After the procedure it is advisable not to eat or drink for 2 hours. If you have received any sedation, you will be observed on the ward for about one hour. You will normally go home afterwards.

To assist with the ablation it may be necessary to undergo a detailed scan of the heart such as CT or MRI scan beforehand. These scans may provide useful information about the left atrium and pulmonary veins to assist the doctor performing the ablation. If this is required you will receive an appointment to attend the radiology department.

You will usually be admitted to hospital on the day of the procedure. Your doctor will talk to you again about the ablation before asking you to sign a consent form that outlines the benefits and risks of the procedure.

During the procedure

The ablation is carried out in a cardiac catheter laboratory under sterile conditions. The procedure can take anything from 2 ½ to 4 hours and is usually carried out using local anaesthetic together with sedation to make you more relaxed. There will be a team of staff present including the doctor, nurses, a cardiac physiologist and a radiographer to assist with the x-ray equipment. A lot of special equipment will be present and you will have adhesive patches attached to you so your heart rhythm can be monitored. A blood pressure cuff will be placed on your arm and you may be given an oxygen mask to wear.

During the first part of the procedure, a local anaesthetic will be given into the groin areas and several catheters will be positioned in the right atrium via the femoral veins. The catheters are then guided to the left atrium by making a small puncture between the right and the left atrium. This is called a "transseptal puncture" and is necessary for the doctor to perform the ablation in the left atrium. Special computer equipment is then used to make a 3-dimensional map of the left atrium. Ablation can then be performed.

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It is important that you seek immediate advice for any of these symptoms:

Severe chest pain

Worsening breathlessness

Loss of consciousness, collapse or worsening dizziness

Numbness or weakness of any part of your body

What are the success rates?

Whether or not the ablation will be successful depends on many factors such as the type of AF you have (paroxysmal or persistent), the length of time you have had AF and whether you have any additional heart disease. On average, AF ablation is successful in approximately 60-70% of patients although this figure may be lower for patients with persistent AF. In addition, approximately 1 in 3 patients (30%) require a second or even third procedure.

Are there any alternatives?

AV node ablation

The AV node normally conducts the electrical impulse from the atria to the ventricles. Ablation destroys the node and prevents the rapid irregular impulses from conducting to the ventricles, thereby improving symptoms. As the normal connection between the atria and ventricles is damaged, it is necessary to undergo pacemaker implantation to prevent the heart from beating too slow. This is usually performed several weeks prior to AV node ablation to allow the pacemaker to "bed in". AV node ablation offers very good symptomatic relief and is relatively straightforward to perform; however it does mean that you are subsequently "dependent" on the pacemaker to maintain your heart rhythm.

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