Arrhythmia Alliance

The Heart Rhythm Charity

Promoting better understanding, diagnosis, treatment and quality of life for individuals with cardiac arrhythmias

Catheter Ablation Patient Information

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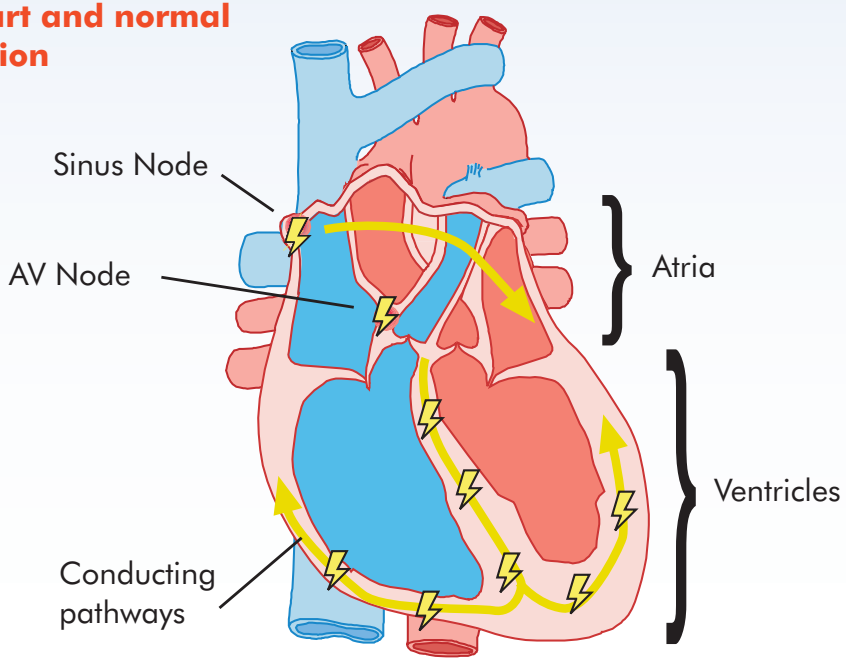
The heart during normal rhythm (sinus rhythm)

The heart is a muscular pump, which delivers blood, containing oxygen to the body. It is divided into two upper chambers, or "atria", which collect blood returning via the veins, and two lower chambers or "ventricles", which pump blood out through the aorta (main artery) and the lungs.

Normally, the heart beats in a regular, organised way, at a rate of 60-100 beats per minute. This is because it is driven by the "sinus node", a clump of specialised cells, which emit electrical impulses and is situated in the atria. These electrical impulses spread through the atria and then into the ventricles via a connecting cable (the "AV node").

The sinus node controls the timing of the heart, according to the needs of the body. An example of this is during exercise, when the heart rate speeds up. When the heart is beating normally like this, we refer to it as "sinus rhythm", or "normal sinus rhythm".

The heart and normal conduction



Heart rhythm disturbances

Sometimes the electrical conduction system in the heart travels in a different direction, due to extra electrical connections, known as "pathways", or due to extra electrical cells within the heart. Often these pathways are present at birth, but may only start to work in adulthood.

When the heart has an extra beat (an ectopic), it can travel down the pathway and travel up the normal conduction system. If this continues, palpitations can start. This means that the heart suddenly starts to race, causing an awareness of a fast heartbeat. If the abnormal heart rhythm is arising from the upper chambers of the heart, this is known as SVT, or supra-ventricular tachycardia.

This type of heart rhythm disturbance is not life threatening, but can cause unpleasant symptoms and interfere with your quality of life. If the abnormal heart rhythm comes from the lower pumping chambers of the heart (the ventricles), it can be dangerous, particularly if it is associated with fainting.

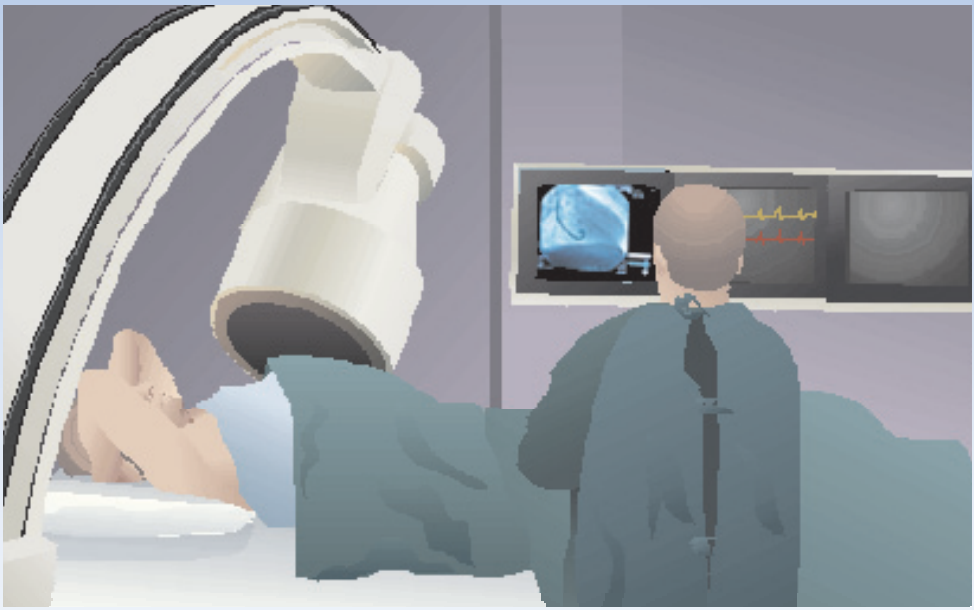
These heart rhythm disturbances may be treated in a variety of ways, such as medication to suppress the fast heartbeats. Over the past 20 years or so a technique called catheter ablation has been developed as a treatment for a variety of heart rhythm problems. Catheter ablation aims to cure the abnormal heart rhythm by destroying the pathway, or area of extra cells, which are causing the palpitations.

The ablation procedure

Catheter ablation is carried out in a Cardiac catheter laboratory, a room which is similar to an operating theatre. There will be a team of people present, some of whom you may have met before. The doctor, or Electrophysiologist, will carry out the procedure with the help of a physiologist, who gives technical support, nurses, who will look after you and assist the doctor and a radiographer who will assist with the x-ray equipment.

Catheter ablation is a minimally invasive procedure, which is usually performed using local anaesthetic. Most patients are also given some sedation, which makes you feel relaxed and you may go to sleep for a while.

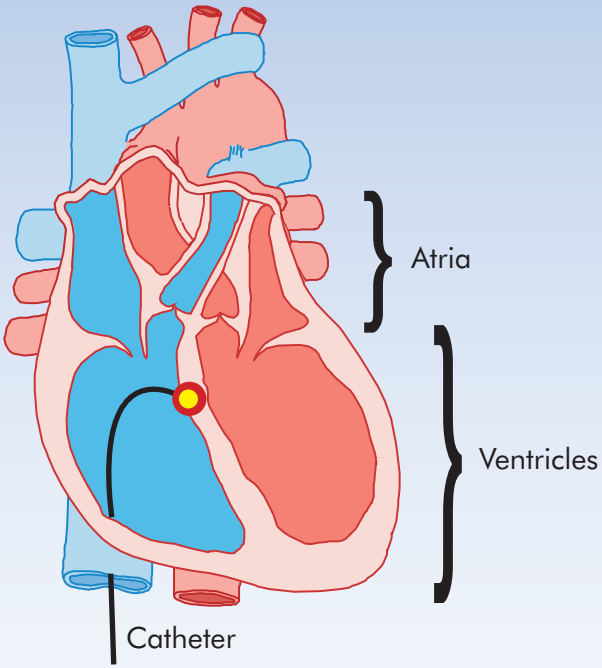
Cardiac catheter laboratory (The Cath Lab)



During the study you will be required to lie flat and the local anaesthetic will be administered to your groin and possibly in the side of your neck. Some fine tubes will then be inserted into the blood vessel at the top of the right leg, and sometimes under the collarbone via your neck.

Fine wires, or catheters are then passed through the tubes and positioned within the heart. This is done with the guidance of an x-ray machine. Once the wires are positioned within the heart, extra beats are delivered using an external pacemaker, which may bring on your palpitations. This is necessary to see where the heart rhythm is coming from. It is possible to put the heart back into normal rhythm within a few seconds, by delivering some extra beats.

The doctor performing the procedure will then decide to ablate the pathway or area of extra electrical cells. This is done by delivering a form of energy down the wire to the target area within the heart. Most commonly the energy used is a heat source, called radio-frequency energy, but other types may be used, such as cryo therapy, which freezes the area.



This part of the procedure may be a bit uncomfortable, so usually more sedation is given. Once the procedure has finished, the wires and tubes will be removed and you will spend a few hours recovering on the ward.

After the ablation

Most people recover quickly from the procedure and feel well enough to carry on with normal activities the following day. You should avoid heavy lifting for about 2 weeks afterwards. The DVLA state that you must not drive for one week after the ablation. If you work, you may wish to take a few days off to fully recover.

Following the ablation, it is quite common to be aware of your own heartbeat, even in normal rhythm. Some people are aware of extra or "missed beats". Try not to worry too much about these symptoms, which usually settle down with the passage of time. If you experience your palpitations or racing

heartbeat, you should report this to your doctor, as this may indicate that the procedure has not been completely successful.

It is common practice for you to be seen in the outpatient clinic a few months after the procedure, to see how you are progressing.

Risks and benefits

The benefit of having a catheter ablation is that your heart rhythm disturbance is cured. This is possible in the vast majority of cases. Your local hospital will be able to give you exact figures, depending on the type of ablation and your individual case. A small number of individuals will need more than one session of treatment.

There is no procedure in medicine with zero risk and catheter ablation is no exception. One reason why it has become a popular treatment in recent years is that it has a very good safety record. The mortality risk of catheter ablation is either 1 in 1000 or 1 in 2000 (Heart Rhythm Society) depending on the type of ablation. More specific risks and complications will be discussed with you at your local hospital.

Useful Websites

If you have access to the Internet you may find the following websites useful:

www.arrhythmiaalliance.org.uk

www.dvla.gov.uk/at_a_glance/ch2_cardiovascular.htm

www.guidant.com

www.medtronic.com

www.sjm.com

Executive Committee

Please remember these are general guidelines and individuals should always discuss their condition with their own doctor.

Arrhythmia Alliance

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