Dr Aruna Arujuna
MBChB, MD, MRCP, FACC, FESC
Consultant Electrophysiologist and Cardiologist

Typical Atrial Flutter Ablation

This patient information leaflet is intended to provide general information about Atrial Flutter ablation and post-operation care. It is not a substitute for medical advice. Please talk to your doctor about any questions you may have.

What is Atrial Flutter?

Atrial flutter is an abnormal heart rhythm where the electrical signals in the upper chambers of your heart (atria) are very fast but usually regular, in a continuous circuit pattern. This causes the atrial muscles to beat too fast (we call this fluttering). When the atria flutter, the atrial muscles have little time to squeeze and relax. This means they cannot pump blood through the heart as well as they should. Typically the impulses travel around the atrium at a rate of between 220 and 300 beats per minute, and a proportion of these conduct to the pumping chambers (the ventricles) - often every other beat or every third beat from the atria conducts to the ventricles.

This usually results in the ventricles beating too quickly, causing problems in the longer term, and increases the risk of other complications including strokes

A fluttering, fast heart beat can cause you to feel a thumping in the chest (palpitations), a racing heart, short of breath, dizzy, extremely tired all the time, and even chest pressure or pain.

Atrial flutter can occur intermittently or the patient can permanently be in this rhythm.

Different kinds of Atrial Flutter

Atrial flutter is classified as typical or atypical (non-typical) flutter depending on the location of the electrical circuit — the pathway that allows the electrical signal to move too fast around the heart. While the symptoms are similar, the treatments may differ.

> Typical Flutter : The electrical impulses in typical atrial flutter are organised and follow a defined circuit around the right top chamber called the right atrium. The treatment area of interest is located within the Cavo-Tricuspid Isthmus.
>
> Atypical Flutter: The electrical impulses in atypical atrial flutter may take a less well-defined circuit.

How does Atrial Flutter affect your quality of life?

Synchronous Contraction of the heart chambers allows for the optimum filling and blood volume being ejected out of the heart during each cycle of rhythmic movement. During Atrial Flutter, the altered timing between the conventional natural timing between the chambers impacts on the blood volume called the cardiac output. Symptoms vary from person to person and include:

- Feeling tired and not have enough energy
- Heart palpitations (feeling like your heart is racing, pounding, or fluttering)
- Fast, steady pulse
- Shortness of breath
- Trouble with everyday exercises or activities
- Pain, pressure, tightness, or discomfort in your chest
- Dizziness, feeling lightheaded, or fainting

What is the best way to manage your Atrial Flutter?

Ablation is usually offered to people with atrial flutter who do not respond to medications or who continue to have troublesome symptoms even with medication. Some patients will undergo an atrial flutter ablation instead of taking medications because atrial flutter is curable and the procedure is relatively low risk. In general, more than 90% of patients with atrial flutter will be cured of their arrhythmia after an ablation procedure. All current guidelines recommend Atrial Flutter ablation as a first line procedure over medication. In a small number of cases, there is slowing of the heart rate and atrial flutter with a slow heart rate would best be treated with a back up pacemaker to ensure adequate heart rate before taking a decision on the ablation strategy.

How is Atrial Flutter treated?

Catheter Ablation as mentioned above is by and large the first line treatment for Typical Atrial Flutter. An ablation procedure is the process of applying either thermal or non-thermal energy in a focussed way to an area of the heart in order to modify or destroy the cardiac tissue that is participant or contributing to the unwanted arrhythmia circuit. In typical atrial flutter, the impulses pass in a circuit around the right atrium, and part of that circuit is a narrow strip of tissue known as an ‘isthmus’ (cavo-tricuspid isthmus) between the vein passing up through the abdomen into the heart and the valve connecting the atrium to the ventricle on that side of the heart. All the atrial flutter impulses passing around the circuit pass through this isthmus and so destroying it by ablation prevents the circuit from conducting. Thermal energy by radiofrequency energy and heating of the area to cause controlled tissue injury is the modality of treatement. This terminates / prevents atrial flutter. The outcome of ablation is to prevent that part of the heart from conducting electrical impulses and so prevent the abnormal rhythm from occurring. Conduction continues through the normal circuit from the atrium through to the ventricle.

Some patients are in persistent atrial flutter at the time of the procedure. In these cases, the first part of the procedure is to confirm the diagnosis followed by the ablation. Ablation will normally stop the atrial flutter and then prevent it recurring.

In other patients, atrial flutter has been shown or suspected on an ECG or heart rhythm recording, but the patient is in normal rhythm on the day of the procedure. In these circumstances, the rhythm does not change during the ablation but measurements made before, during and after the ablation show when the isthmus has been destroyed. The EP study and ablation are usually done in the same procedure. The EP study identifies the target for ablation and then the ablation is performed immediately afterwards, i.e. in the same sitting, in order to treat the problem

Why do I need this procedure?

Your heart has its own natural pacemaker. This is called the sinus node; it usually produces between 60 and 100 electrical pulses a minute. These impulses pass from the top chambers (atria) to the pumping chambers (ventricles) where the impulse is distributed around the heart using specialised conduction pathways.

In some circumstances, atrial flutter can occur when an abnormal circuit forms within the right atrium. If atrial flutter has occurred once, it is likely to recur in future. The ablation procedure has a high chance of preventing that from happening.

What are the risks?

Before having your procedure, please feel free to discuss any concerns with the doctors or nurses.

Potential procedural risk include:

- Damage to your groin or a blood vessel.
- Bleeding from your groin or around your heart.
- Stroke or heart attack.
- Need for a pacemaker.
- Damage to your oesophagus (gullet).

Risk resulting in death is rare. If an emergency happens during the procedure, we will do whatever is possible to treat it. Although extremely rare, emergency treatment could include open-heart surgery.

What are the benefits?

The aim of the procedure is to ablate the cavotricuspid isthmus (the tissue involved in the flutter circuit) either to terminate atrial flutter and prevent it recurring, or to prevent future episodes, improve related symptoms and improve quality of life.

Are there any alternatives?

Electrical cardioversion (where a shock is passed through the chest using pads attached to the chest wall) under heavy sedation is very effective at terminating atrial flutter and is often used in the short term. However, it does nothing to prevent the rhythm problem occurring in future which it is very likely to do.

Medications (tablets) can be used to control the rate when in flutter, and this may be effective at preventing excessive symptoms. Some medications can be used to control the rhythm (i.e. prevent further episodes of atrial flutter), and if you do not want to go ahead with the procedure then it is usually possible to achieve a reasonable result with medications. There is always a balance between the risks of long term medications and the risk of a single procedure with low complication rates and high success rates.

It is important to say that atrial flutter is not generally dangerous, although there are some risks to long term health associated with the heart rate being too fast for a long time which often happens in atrial flutter. Flutter ablation should however generally be considered an option to improve quality of life and often is a way to reduce the medications required. In some patients, the heart performance if reduced during atrial flutter does improve following restoration of sinus rhythm.

Will I have to stay in hospital?

You may need to stay in hospital overnight after the procedure.

What to Expect Before the Procedure

The patient may be asked to have some blood tests, an echocardiogram and sometimes either a cardiac CT scan or cardiac MRI scan. The CT scan will determine the size and number of pulmonary veins and confirm the absence of clot in the heart.

Pre-operative instructions are individualised according to the clinical judgment of Dr Arujuna in discussion with the patient. If the patient is not already taking a blood thinning medication Dr Arujuna always prescribes one prior to the procedure.

During the ablation the patient will be under a general anaesthetic.

Eating and drinking: Do not eat or drink for at least eight hours before your procedure. You may take any tablets with a few sips of water.

Preparing for your procedure

When you arrive at the cardiac catheter suite, we will give you a hospital gown to wear and will put a needle (cannula) into a vein in your arm. We will use this to take some blood and give you fluids if required. You will be taken into the cardiac catheter laboratory and meet the team looking after you.

This consists of Dr Arujuna, electrophysiologist (a consultant who specialises in heart rhythm problems), a cardiac physiologist, a radiographer, a nurse, and the anaesthetic team.

What happens during the procedure?

This procedure is normally preformed under general anaesthetic. Once you are asleep, the electrophysiologist will insert small plastic tubes (cannula's) into blood vessels at the top of your legs (your groin). The wires used to record electrical signals will then be advanced through the cannula into the heart. Wire navigation is guided by x-ray equipment. Once the wires are in the right place, your doctor will make rytham measurements and then the heart is paced using the wires. Pacing means that a heartbeat is initiated in the chamber where the wire is placed by passing a small electrical impulse down the wire. The response of the heart's electrical system is measured using the other wires. If you are in atrial flutter on the day of the procedure, specialised pacing techniques are used to confirm that it is indeed 'typical' atrial flutter and that the standard ablation technique is the appropriate treatment. If your heart is not in flutter on the day, usually the operator will perform the ablation for 'typical' flutter and use special pacing techniques to confirm when enough damage has been done to the isthmus.

The ablation is carried by passing a an ablation catheter, a wire that enables delivery of the above described energy, through the vein at the top of the leg up to the target area for ablation. When the exact location is confirmed, radiofrequency energy, a form of thermal heat energy is applied to the area through the wire. The tissue is damaged to the extent that it can no longer cause the abnormal conduction and rhythm problems.

After a successful ablation, the wires are left in place for some time with pacing to confirm that the isthmus does not recover conduction. If it does, further ablation is performed to consolidate the region.

How long does the procedure take?

The procedure usually takes between one and two hours,

What happens after the procedure?

The wires and tubes will be taken out and you will spend a few hours recovering on the ward. You will lie flat for between two to four hours following the procedure.

You may have some discomfort in your groin where the catheters were inserted. You may also experience some irregular heartbeats, but this is usually normal and will improve over time. If there is no bleeding from the groin, we will allow you to sit for a further two hours. If all has gone well, you will be able to walk four hours after the procedure.

During the first four hours after the procedure, you will be attached to a heart monitor and regular checks of your blood pressure and groin will be carried out. Dr Arujuna will come and discuss the outcome of your procedure and check your recovery.

You will have an ECG which will be reviewed by your doctor. You will be advised on any medication changes on discharge.

What happens when I go home?

Going home: You must have someone to collect you from the ward. We do not advise using public transport.

Driving: The DVLA states that you must not drive for two days after this procedure. We would recommend between 5 and 7 days.

Pain and bruising: You may have some chest discomfort for up to one week after the procedure. You may also have some bruising in your groin which will take a few days to ease.

Tiredness: It is normal to feel tired for some time after the procedure.

Medications: Keep taking your medications as normal, unless instructed otherwise.

Activity : Resting for a few days, Not lifting heavy objects, Avoiding strenuous activity for a week.

Going back to work: It is advisable to take one week off work following the catheter ablation.

Follow-up appointment: You will be reviewed in the outpatient/telephone clinic once at 4-8 weeks and a second time point at around six months after the procedure.

Will I still have any symptoms?

You may continue to have some for a while after having the ablation, but this does not necessarily mean that the procedure has failed. However, some patients will need to have the procedure more than once. It can take a while for your heart to settle down after the ablation and for us to know how successful it has been. The first three months is usually taken as the blanking period and as the injured tissue of the heart heals, rhythm disturbance can occur before it settles.

We usually request you to have a portable heart monitor fitted as an outpatient after the ablation.

If your heartbeat remains irregular, it is important to try to have an ECG when this is happening. You can have one at your GP surgery or in the Emergency Department (A&E). If you have these symptoms, please call us to book a clinic appointment.

Who can I contact with queries or concerns?

If you have any general queries or concerns about this procedure, contact the care team. Please leave a message and they will return your query as soon as possible.

Tel: 07538385325 9am to 5pm, Monday to Friday , Email: careteam@avahealth.life

Useful sources of information

- www.atrialfibrillation.org.uk
- www.arrhythmiaalliance.org.uk
- www.bhf.org.uk