

Atrial Fibrillation

Atrial fibrillation is an abnormality in the rhythm of the heart (arrhythmia) where the atria (top chambers of the heart) quiver in response to chaotic electrical signals. This causes ineffective contraction of the atria. This quivering can generate rapid, irregular heart rates and increases the risk of clots forming in the left atrium due to stagnation of blood flow. These clots can embolize, travel downstream in the blood, and cause a stroke.

There are two main goals in the treatment of atrial fibrillation. One, to control the rhythm itself either by restoring normal heart rhythm or normal heart rate; and the prevention of complications of stroke.

The nature of atrial fibrillation is progressive, so if treatment is not obtained, risks for stroke increase and the condition can worsen, becoming more difficult to treat. Not all patients have symptoms, but often patients experience decreased exercise tolerance, shortness of breath on exertion, palpitations and fatigue. In a small but important minority of patients AF can result in heart failure or strokes.

Symptoms

Atrial fibrillation initially is often “paroxysmal”, meaning that occurs as sudden onset attacks. In the initial stages of AF, it will mostly resolve without any treatment or intervention, lasting anywhere from a few minutes or hours to days at a time. Many patients report experiencing symptoms during these attacks such as:

- Light-headedness
- Dizziness
- Chest pains
- Pounding heart or palpitations
- Shortness of breath
- Fatigue
- Decreased exercise capacity
- Feeling faint
- Increased urination

What are the risks involved in an Atrial Fibrillation ablation?

As with all procedures, Atrial Fibrillation ablations carry their own risk profiles that can range from common occurrences, through to uncommon and rare instances. All Risks should be taken into consideration when considering an Atrial Fibrillation ablation to determine if the procedure is an appropriate treatment option for yourself during consultation with your treating cardiologist.

In recommending this procedure, your doctor has made has determined that on balance, the benefits and risks of the procedure outweigh the benefits and risks of not proceeding.

As such, your doctor believes there is a net benefit to you going ahead and that the procedure should be successful overall.

Common risks and complications can include but are not limited to:

- Bruising to the surgical access site/puncture site and surrounding tissues that can take weeks to heal completely in some instances.
- Sore throat from the breathing tube the anaesthetist inserts when you are asleep, or from the trans-oesophageal echo probe that is sometimes used to image the heart during these procedures. This resolves after 2 or 3 days.
- A sense of chest tightness that can last up to 2 to 3 weeks.

Rare risks and complications can include but are not limited to:

- Development of additional arrhythmia
- Blood pooling around the heart (tamponade) that requires immediate drainage or surgical intervention in extreme cases.
- Stroke
- Damage to vessels or nerves at the access site in the groin that may need further procedures to remedy
- Injury to the oesophagus from procedural use or an ultrasound or temperature probe
- Incidences of death due to this procedure are considered incredibly rare but are still possible

Ablation

Ablation for Atrial Fibrillation is an effective treatment that will successfully suppress atrial fibrillation in upwards of 70% of individuals. As atrial fibrillation in most people originates from the pulmonary veins on the left side of the heart, a transseptal puncture is required to access the left atrium during the procedure. During a transseptal puncture, a small hole is created between the top chambers of the heart to allow an access pathway for the catheters to pass through. This hole then heals over in the months following the procedure.

By successfully isolating the pulmonary veins (by creating a ring of scar where the pulmonary veins joins the left atrium), the recurrence of Atrial Fibrillation can be significantly reduced or prevented altogether. The main goal of this procedure is to ultimately restore normal heart rhythm without the need for medications. Multiple different energy sources have been used historically to create this scar. At present, pulsed field ablation and radiofrequency ablation are the energy sources Dr Hunt uses for this ablation.

What Can I expect during the procedure?

Once checked into hospital for your procedure, you will be taken through an admission process where your medical history is taken, preprocedural blood tests are collected if needed and your body is prepared by shaving off some hair on your groin, chest and back. This is done to allow a sterile surgical field to be created at the puncture site in the groin and to ensure that any cardiac mapping pads or electrodes can be adhered to your chest and back in a way that is both effective for use and easy to comfortably remove.

You will then be taken to the anaesthetic holding bay where your anaesthetist will discuss their part in the procedure, your airway management process (as general anaesthetic is required) and discuss any queries or concerns you may have. Upon entering the cardiac catheter laboratory, you will be prepared for your procedure by the cardiac scientists who will position you on the table and apply mapping pads, defibrillation pads and various electrodes to your body prior to anaesthetic administration.

At the commencement of the procedure, you will be drifted off to sleep by the anaesthetist. Dr Hunt will insert two to three small access sheaths into your right groin under ultrasound guidance before passing a catheter up through your femoral vein and into the right atrium of the heart. To perform the transeptal cross to the left atrium, long needle will be inserted and perform a tiny puncture through the septum (the wall between the left and right sides of the heart) to ensure the ablation catheters can be advanced into the appropriate location – this puncture hole reduces in size and eventually heals up over the course of several months. This is performed under x-ray guidance and at times with the use of a trans-oesophageal ultrasound probe in order to be as safe as possible for the patient.

Throughout the procedure, additional blood thinners are administered to maintain a suitable level of anticoagulation of the blood and ensure the patient does not experience a stroke from clot formation following the introduction of the sheaths or ablation catheters. Once the catheters have been advanced into position, a 3D model of the heart is created by software that maps the location of the catheters within the heart. Once the doctor and the cardiac scientists are satisfied with the location of the ablation catheter, energy pulses are delivered and an area of scar is created to block the transmission of unwanted signals that cause atrial fibrillation.

The entire procedure is generally reasonably quick, taking around 1-2 hours to complete in most cases. Ablations can take longer, particularly in re-do ablations if the underlying mechanism causing the atrial fibrillation is complex.

At the completion of the procedure, the catheters are withdrawn and a temporary suture is inserted to the access site in the groin to apply pressure and prevent any bleeding for 4 hours. The patient is then awoken from their anaesthetic and transferred to the post anaesthetic recovery area for observation before transferring to their room in coronary care for overnight observations.

Patients have to remain flat without moving their hips/legs for up to 2-4 hours to prevent any bleeding postoperatively. Provided no complications are observed, patients are discharged the following day once they have been reviewed.

Before Your Procedure

It is important that you fast prior to your procedure in line with your anaesthetists' instructions. Generally, a fast time of 6 hours for solid food and 4 hours for water is required in order to prevent any complications with the use of anaesthesia during your procedure.

For patients taking Ozempic, Trulicity, Saxenda, Wegovy or Mounjaro, the anaesthetic guidelines require you to continue your medication as normal, commence a clear fluid diet 24 hours prior to your procedure and completely fast for 6 hours immediately prior to your procedure to minimise the potential for anaesthetic related complications.

Note: Clear fluids includes: water, apple juice, broths, black coffee and black tea. Any non-transparent fluids such as milk, smoothies, juice containing pulp or soups are not considered clear fluids and can cause a delay in your procedure time if consumed.

After Discharge Process

Prior to discharge from hospital, patients are advised of any changes to their regular medications by their discharging doctor and advised of their follow up process. This usually consists of an investigative Holter monitor appointment to assess the effectiveness of the ablation by observing cardiac activity for 24h hours, followed by an in-clinic appointment with Doctor Hunt in 2-3months. If you are unsure if an appointment has been made, please contact the clinic to ensure all pre-appointment testing can be completed in a timely manner.