Atrial Fibrillation Ablation

A guide for patient and families

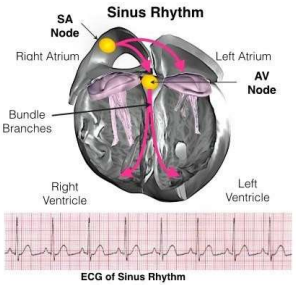
This document outlines:

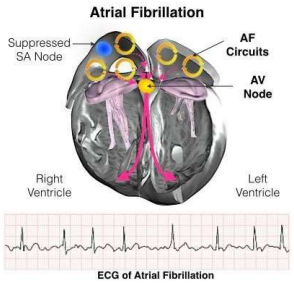
- What is an AF Ablation?
- What to expect before, during and after

Normal Rhythm

The heart is a pump responsible for maintaining blood supply to the body.

The pumping of the heart is regulated by an electrical current. Normally, this electrical impulse begins in the right upper chamber of the heart in a place called the sino-atrial (SA) node. Then travels to the right and left atria causing them to contract evenly. The impulse then travels through the atrio-ventricular (AV) node, which is the only electrical connection between the top chambers and the bottom chambers. The impulse then splits into two branches which allows the electrical signal to spread evenly to the left and right ventricles at the same time. This causes them to contract and pump blood to the lungs and body.





Atrial Fibrillation

Atrial fibrillation (AF) is due to the development of electrical short circuits inside the top chambers of the heart. It usually begins in the left atrium. They are usually triggered by abnormal electrical activity located within the pulmonary veins that drain blood from the lungs back to the heart.

Please follow this link https://www.melbourneheartrhythm.com.au/learn/conditions/73-atrial-fibrillation to find out more information about:

- What is atrial fibrillation?
- Causes
- Symptoms
- Treatments
- Medications and lifestyle management
- When to seek medical attention

(If reading from paper hardcopy - go to the link www.melbourneheartrhythm.com.au then click on ‘Learn about’, then click on ‘Conditions’ and lastly, click on ‘Atrial fibrillation’)

AF Ablation Procedure – PVI (Pulmonary vein isolation)

AF ablation, also known as Pulmonary vein isolation (PVI) is a type of cardiac ablation for the treatment of atrial fibrillation (AF). The procedure is performed with you asleep under general anaesthetic. Once you are asleep we will put a small ultrasound camera (an echocardiogram) in your oesophagus (swallowing tube) to aid in guiding the procedure. You will usually be asleep under a general anaesthetic for 2-3 hours for your procedure.

The procedure is performed via the vein in the groin. A series of 3 or 4 tubes (sheaths) are placed in this vein. The specialised electrical catheters are then inserted and guided into the heart via these tubes. Ablation is performed using either heating (radiofrequency ablation) or cooling (cryoablation). Ablation causes the areas of abnormal electrical tissue to become areas of scar. The most common target are the pulmonary veins at the back of the left atrium. Access to the left atrium requires crossing the thin tissue inside the heart separating the right from the left atrium (called the interatrial septum). This is performed using ultrasound guidance and is a very common and safe procedure.

What is the success rate of the procedure?

This depends on the type of atrial fibrillation that you have. For example:

- *Paroxysmal* atrial fibrillation starts and stops by itself within 7 days. The success rate for this type of atrial fibrillation is approximately 80-85%. This can vary slightly according to the type of heart problem that you have. In approximately 15-20% of patients it is necessary to perform a second procedure if the first was not successful. Even after 2 procedures, approximately 15% of patients will continue to have problems.

- *Persistent* atrial fibrillation continues for more than 7 days or requires a DC shock (cardioversion) to revert. The success rate for this type of atrial fibrillation is approximately 70%. This can vary according to the type of heart problem that you have or the length of time you have been in AF. In approximately 20-30% of patients it is necessary to perform a second procedure if the first was not successful. Even after 2 procedures, approximately 20-30% of patients will continue to have problems.

We will not know for certain whether the procedure has been successful for several months afterwards. During this time it is usually necessary to continue taking medications. Although the majority of patients will be able to stop their anti-arrhythmic tablets, some may need to continue medications to compliment the ablation for prevention of AF. This will be a discussion between you and your cardiologist.

What are the risks of catheter ablation?

Radiofrequency ablation for atrial fibrillation has been developed over more than 20 years and is now a routine procedure in many hospitals around the world. Over 10 AF ablations are performed in a usual week at the Royal Melbourne and Melbourne Private Hospitals (Approximately 3500 AF ablations have been performed at these hospitals-January 2021). Although most people undergoing atrial fibrillation ablation do not experience any complications, you should be aware of the following possible risks (these will be discussed with you).

The risk of any complication is approximately 4 to 6%.

The risk of a major or serious complication is approximately 1 or 2% (1 to 2 in 100).

The risk of death as a complication of the procedure is approximately 1 in 1000.

Major complications (1-2% risk) include but are not limited to:

Stroke (estimated at 0.5%)

Damage to the heart wall (cardiac tamponade) or major artery (aorta) or heart valve. (These complications may require urgent open-heart surgery to correct).

Pulmonary vein stenosis (narrowing the blood vessels that enter the left atrium)

Infection (including in the lung-pneumonia, or the heart-endocarditis)

Blood clots to major organs (e.g. brain, heart causing heart attack, lungs, kidneys, bowel)

Large bleed in the groin or damage to the artery possibly requiring surgery and/or blood transfusion to correct

Rare but serious complications include:

Damage to the oesophagus (the swallowing tube) termed an atrio-oesophageal fistula. (This is considered to be a rare complication but is usually fatal).

Damage to the oesophagus from the trans-oesophageal echo probe.

Damage to major nerves which run near to the heart (these include the nerve to the diaphragm or to the stomach)

Damage to the normal electrical system of the heart resulting in a permanent pacemaker.

Other less severe complications include:

Groin problems where the electrical catheters are inserted: bleeding, blood clot or large bruise. Occasionally there may be numbness on the front of the leg or pain. Rarely this may persist for many months or longer.

Note that the appearance of bruising may track down the leg or up onto the lower abdomen. This is caused by dissipation of the groin bruise along tissue planes. This will gradually disappear over weeks.

Rapid abnormal heart rhythm - in some cases a small electric shock may be required to restore your normal rhythm.

Infection or bruising of an intravenous or intra-arterial cannula.

A rash may develop at the site of the patches applied to your skin.

At The Royal Melbourne Hospital, we have previously published our safety record for AF ablation both in 2010 and in 2018. At present (April 2021), the mortality in approximately 3500 procedures is zero (no-one has died), the major complication rate is less than 1% (1/100) and there have been no major irreversible complications. Many of the above listed potential complications have never occurred in our department.

Do I need to have this procedure?

Atrial fibrillation ablation is designed to cure your symptoms and improve your quality of life. There is also evidence that there may be a reduction in risk of complications due to AF in the long term (such as heart failure, stroke and death). Because the procedure carries a very small risk of a major complication we recommend having a careful discussion with your specialist and with family regarding this decision. We would also usually recommend a trial of medications first as some people will be well controlled on tablets (we understand that some people do not wish to take or cannot tolerate medications).

What to expect before the procedure

1. You will receive a letter/email from the booking office outlining:

- Procedure date
- Pre-admission telehealth date
- Pathology request and instructions
- Telehealth patient information
- COVID patient advice
- Procedure information
- 'Accommodation information' if you live greater than 100kms away from the hospital.

2. Please ring 9342 8583 to contact the 'cardiology booking office' to officially accept the dates you have been given.
3. You will receive a phone call from one of the nurses (usually Mandy or Carolyn), before your Telehealth Pre-Admission Clinic appointment. This is to get you ready for your upcoming appointments and ask you a few questions.

Questions that you will be asked include:

- Can you use telehealth, do you have family/friends/GP to help if needed? Have you completed a test call of Telehealth?

- Go through your list of medications and create a medication plan
- What is the name of the pathology lab/company that you had your bloods / COVID swab taken with?
- Have you received a date for your CT coronary veins scan? If not, we will follow this up.

- Discuss Allergies
- Discuss driving (No driving for 3 days after your procedure)
- Who will be your support person to drive you home?

4. Telehealth Pre-admission clinic (PAC) appointment, you will log on to Telehealth www.theRMH.org.au/telehealth at your nominated date and time. This takes 1 – 2 hours all up. Please call 03 93428670 if you have any problems with telehealth.

During Telehealth Pre admission the doctor will go through:

- Consent
- Medication
- Past medical history
- Details of the procedure
- Discuss blood results

Nurse will go through:

- What to expect pre & post procedure
- Where to arrive on the day of procedure
- Fasting instructions
- Preparation of site i.e. shave and chlorhexidine wash
- Transport details and support person
- Discharge Planning – ensuring you have correct medication and support.

5. Before the procedure, a CT scan of your heart will be performed. This will be used during your ablation procedure, we need to do this CT at Royal Melbourne Hospital as we need the images on our system.

What to expect day of procedure

1. Home:

- Please pack a small bag as there is limited amount of cupboard space at the bedside.
- Toiletries and slippers.
- Change of clothes for the next day.
- There is a television at each bed that can be hired for a small fee. However, if you bring some entertainment i.e. a good book, Sudoku, iPad/tablet and headphones, it will help to make your stay more comfortable.
- Ensure you have followed instructions to shave your groin area
- Fast from midnight – No food, No drinks
- Please take the correct medications at home with a sip of water.

This should be strictly as per your medication plan that was set in the pre-admission clinic appointment.

2. Hospital:

- Arrive at 6:30am for the COVID screening questions at the main entrance
- Arrive at 2SE by 6:45am to check in with the ward clerk.
- Nurse will take you through to the ward where you will get into a hospital gown and fill out relevant paper work to get you ready for your procedure.

3. Cath Lab for procedure

- Then you will be taken round to the Cath lab for your procedure.
- ECG monitoring electrodes (ECG stickers) will be attached to your chest area and patches to your chest and back.
- The anaesthetist will talk to you and insert an intravenous cannula usually into the back of your hand and a second cannula into the artery in your wrist. The entire procedure will be performed while you are “asleep” under general anaesthetic.

What to expect – After the procedure

After the procedure you will be moved to the **recovery area**. When you are completely awake you will be transferred to the **cardiology ward**.

You will have to lie flat for approximately 6 hours after the procedure to avoid any bleeding from the vein in the groin. It is important to keep your leg straight and your head relaxed on the pillow. You will have a compression clamp (Femostop™) on the groin area which stays in place for 4-6 hours. When removed, a small clear plastic dressing will be applied to the wound. You might also have a urinary catheter (IDC) which will be removed later that evening or the next morning.

It is usual to stay in hospital for 1 night after the procedure. Discharge from hospital is usually before 10am the next day. Your heart rhythm will be monitored during this time.

Before going home, ensure you have the correct medication and instructions from the pharmacist. You will also receive a follow up appointment with the cardiologist in about 3 months' time. If you need travel forms signed or medical certificates you must get these before you leave the hospital.

What to expect – When I get home

Do not drive for 3 days after the procedure.

If you develop new swelling, pain or bleeding in the groin, contact your doctor. It is normal to feel a small lump about the size of a pea which may take a few weeks to disappear. It is also common to develop bruising over the front of the thigh over the next few days which gradually resolves over weeks.

Please remove the small plastic dressing from your wound, 24hrs after the procedure.

In the initial few days after the procedure be careful not to place undue strain on the groin. Avoid heavy lifting, or vigorous physical activity.

Normal activities can be resumed one week after discharge. Gradually increase exercise over the week but do not return to vigorous exercise such as the gym/heavy lifting, cycling or running for 10 – 14 days. If you have a 'light job' where you sit most of the time, then 1 week of leave should be sufficient. However, if you have a 'heavy job' where you stand a lot and do lifting, pushing or pulling, then you may require 10-14 days.

It is possible you will have a sore throat and some mild chest discomfort after the procedure. You will also have some discomfort and bruising in the groin after the procedure. This will improve over several days.

It takes several weeks for the areas of ablation in the heart to heal and form scars. It is not uncommon to experience abnormal or irregular heart beat or rhythm in the first month after the procedure. Rarely, atrial fibrillation may be worse for a few weeks after the procedure due to inflammation caused by the ablation. You will then have a follow-up appointment with your cardiologist approximately 3 months after the procedure.

If your groin bleeds

1. In the unlikely event that you develop some bleeding or swelling in the groin after discharge, make a fist or roll up a face washer or hand town and apply firm pressure to the site for 10 minutes. If someone is with you, get them to apply the pressure.
   - If the bleeding stops, see your GP as soon as possible to assess the site.
   - If bleeding continues, continue to apply pressure and Call 000

2. Call your doctor (GP) if you have any other concern about your groin puncture site or if you develop new shortness of breath, chest discomfort, fast and irregular heartbeats or dizziness.

IMPORTANT.
After you are discharged, if you develop any post-operative complications it is important that your GP or doctor discuss this with the consultant who performed your procedure as soon as possible.

Finally,

For animations/videos of the AF ablation and further learning, please visit the cardiovascular library on our website:

www.melbourneheartrhythm.com.au/cardiovascular-library

Or visit www.MelbourneHeartRhythm.com.au and click on cardiovascular library (up the top of the page) then search the topic.

The Cardiology Team, RMH

If there are any questions about your procedure please contact:

Mandy Graham, Arrhythmia Nurse Consultant via

The Cardiology Department 93427133

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