



University Hospitals Birmingham
NHS Foundation Trust



**Adult Congenital heart
disease (ACHD) Unit
Queen Elizabeth Hospital
Birmingham**

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Atrial septal defect (ASD)

An ASD is a congenital abnormality which is present from birth. It is a hole in the septum that separates the top two chambers (the atria) of the heart and is often not discovered until adulthood when it may cause symptoms or is found incidentally.

With an ASD, blood will flow from the left atrium into the right atrium through the hole as the pressure is greater on the left side of the heart. This increases the amount of blood that goes to the lungs and can result in breathlessness, heart rhythm disturbances (atrial fibrillation/flutter), stroke and pulmonary hypertension (high blood pressure in the lungs). Some patients do not have any symptoms.

If the hole is small, there is no need for treatment. If the hole is large and/or you either have symptoms or to prevent you developing symptoms and long-term complications you may be advised to have the hole closed either through a catheter which is a long tube, or open heart surgery.

Closing the ASD

If you have not already had a transoesophageal echo (TOE), this will need to be arranged prior to the procedure. Even if you have had a TOE at a referring hospital we may need to do a further one here if images are not sufficient. The TOE helps us decide whether the hole can be closed by a device or whether open heart surgery is required.

An ASD being closed through a catheter can usually be closed using a 'double-disc' device shaped like a double-sided umbrella positioned across the hole in the atriums. The device is passed through a long tube (catheter) which is inserted at the top of the leg through the femoral vein, up into the heart. The procedure is carried out under a general anaesthetic in the cardiac catheterisation theatre, under ultrasound guidance (a transoesophageal echo -TOE) with x-ray screening. Sometimes, it can be undertaken under local anaesthesia.

Your doctor will discuss this in clinic with you. Some patients may need to have custom made devices from the company and this can lengthen the time you wait for the procedure. Heart tissue will grow over the device once it is in place and it will become part of the heart wall. You cannot feel the device when it is in place.

If during the catheter procedure we are unable to close your ASD with a device, the procedure will be stopped and you will be woken up. The findings will be discussed with you and you will be discharged home. Your case will then be taken to the Surgical Multidisciplinary Meeting and discussed with the surgeons. You will be sent an outpatient appointment to discuss this with the surgeon and it is only after this appointment that you will then be placed on the surgical waiting list.

Sometimes in older patients the left side of the heart gets used to having a hole. We sometimes pre-treat patients with tablets called ACE inhibitors, to allow the left side of the heart to cope with having the hole closed. If this is the case, it will be discussed in clinic with you.

Pre-admission for procedure:

You will be seen in a pre-admission clinic where you will have an electrocardiogram (ECG), bloods and MRSA swabs taken.

We would recommend that you see your dentist before coming into hospital to ensure your teeth and gums are in good condition.

Please shave both groins before the procedure.

On admission:

- You will be admitted the day of the procedure and will usually stay in overnight. You will be told in your admission letter when to stop eating and drinking. You are usually nil by mouth for about six hours before the procedure
- You will be admitted by the ward nursing staff and your blood pressure, pulse and temperature will be taken

- If you have not signed a consent form in clinic this will be completed on the morning of admission by the doctor when they come to see you. They will explain the benefits and potential risks of the procedure before you sign the consent form. Possible complications are bleeding, bruising, palpitations (noticeable heart beats) or a sore throat after the procedure
- Any significant risk of complication is around 2%. ASD device closure is considered a safe and low risk procedure
- The anaesthetist will also come and see you that morning
- You will be given a loading dose of Aspirin or Clopidogrel, this is an initial higher dose of the drug which is given at the beginning of treatment before dropping down to the normal dose you will then take every day. If you are already on Warfarin or alternative blood thinners, stop this 72 hour prior to the procedure. You will be told when to restart this before you are discharged

Post procedure:

- You will be quite sleepy after the procedure due to the anaesthetic
- Usually you will need two hours flat bed rest, then two hours sitting. After this you can move around if there is no bleeding. The nursing staff will guide you and the timings can vary depending on whether there is any bleeding or not. You may have some discomfort and bruising in your groin
- The nurse will monitor pulse, blood pressure and check the femoral access site for bleeding, swelling, haematoma and pedal pulse (pulse in your foot) ½ hourly for two hours, then hourly for two hours
- Once you are awake enough you will be able to drink and eat something. Normally you will first be given sips of water
- Either the same evening or on the day after your procedure you will have a chest X-ray, ECG and echo to confirm that the device is well positioned
- Before discharge the nurse will remove the dressing and check your groin

Discharge:

Do not drive for seven days (see Driving & Vehicle Licensing Agency (DVLA) guidelines).

You can usually return to work after two days. If you are in a physical active job, you may need longer. The doctor will discuss this with you.

You must not do any heavy lifting or contact sport but you can do gentle exercise such as walking but avoid strenuous exercise until you are seen in clinic.

You will need dual anti-platelet therapy (Clopidrogel) for three months then stop, Aspirin for six months then stop. **Avoid any pregnancy while on dual antiplatelet therapy because we do not know the effects of Clopidrogel on the unborn child.**

Once the ASD is closed, female patients can have any form of contraception as long as there are no other contraindications to taking it.

If you are usually on Warfarin this will be restarted after the procedure once the risk of bleeding is reduced and you will not need dual platelet therapy.

Patients should receive an anti-platelet card on discharge and a device card will be sent to them. It is a good idea to take the device card with you if you fly in case of any issues but the metal parts in the devices are very small and usually do not trigger metal detector alarms.

You will have an outpatient appointment in six weeks with a transthoracic echocardiogram on the same day – at this review we will advise about physical activity

You will need long-term follow up.

You should also have regular dental check-ups, at least once every year and clean your teeth twice a day to reduce the risk of endocarditis. Endocarditis is a rare but serious infection of the inner lining of your heart and valves, it generally occurs when bacteria or other germs from another part of your body, such as your mouth, spread through your blood stream and attaches to damaged or previous operation sites or devices within the heart.

We would recommend that you usually wait a week after the procedure before flying.



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