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Stretching your heart's narrowed aortic valve with a balloon (balloon aortic valvuloplasty)

Department of Cardiology

Information for Patients

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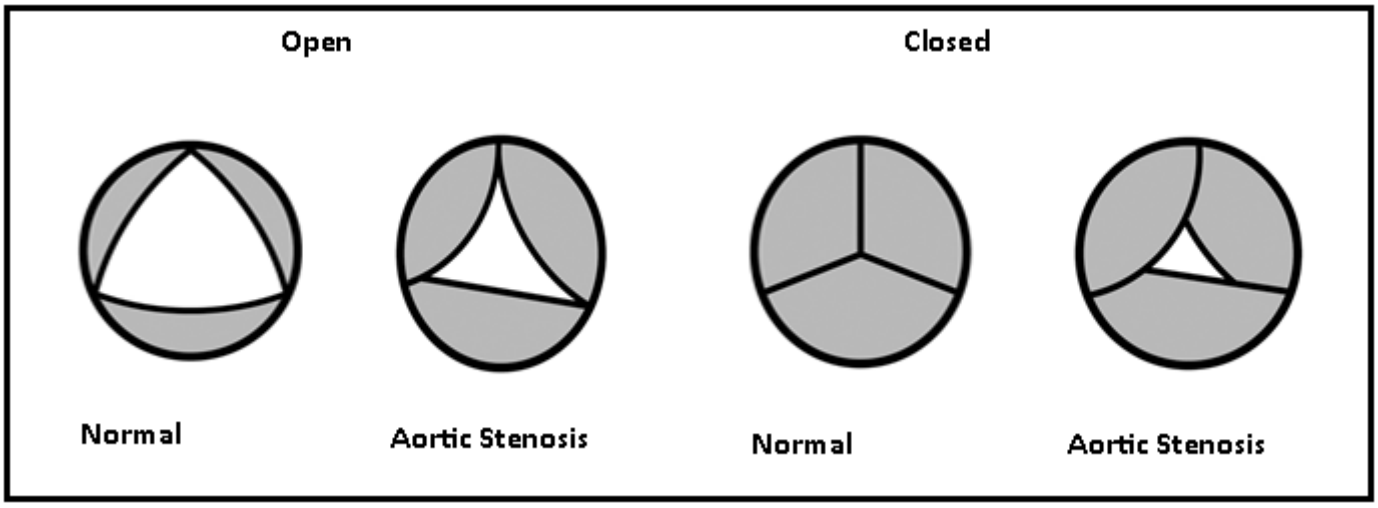
Introduction

This leaflet aims to help you understand what to expect before, during and after your aortic valvuloplasty. If you have any questions, please ask the nursing or medical staff who are looking after you.

What is aortic stenosis?

The aortic valve is 1 of the 4 valves in the heart. The valves control the flow of blood from the heart. Aortic stenosis can happen when the aortic valve has narrowed. When this happens, the aortic valve fails to open and close fully. This makes the heart work harder to pump blood through the valve. The narrowing is often caused by calcium build-up inside and around the valve. This can happen over a lifetime.

As the valve gets narrower, less blood can pass through it each time the main chamber of the heart (left ventricle) pumps.



What are the symptoms of aortic stenosis?

- Breathlessness
- Rapid weight gain due to fluid retention
- Chest pain
- Weakness
- Dizziness
- Swelling in the ankles, feet and/or tummy (abdomen)
- Irregular heartbeat.

What are the treatment options available for aortic stenosis?

Tablets:

Tablets may help to improve some of your symptoms for a short time, but they will not treat or slow down its progress. The only long-term treatment is to treat the diseased valve.

Heart valve replacement:

It may be possible for you to have heart surgery to take out your aortic valve and replace it with a new one. For older people and those who may be at high risk, an operation may not be possible. High risk people can be offered a different procedure called a trans catheter aortic valve implantation (TAVI).

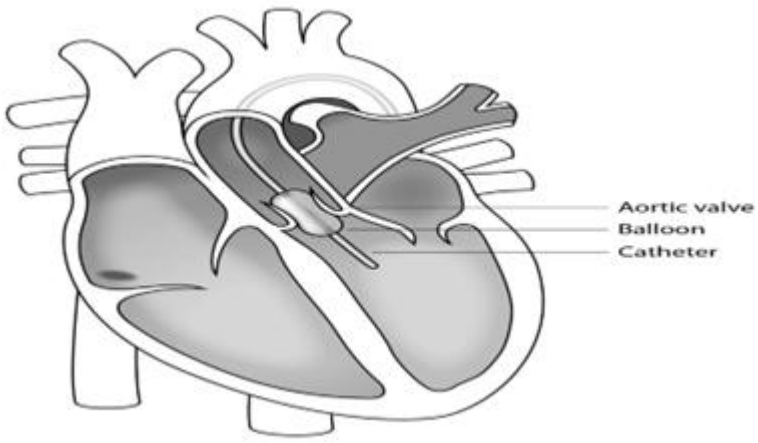
Balloon stretch

Stretching your aortic valve with a balloon. This is a temporary treatment option available for aortic stenosis.

Your cardiologist will decide which of the treatments is best for you.

What is balloon aortic valvuloplasty (BAV)?

A balloon aortic valvuloplasty (BAV) is a procedure that stretches the aortic valve. This improves the symptoms of aortic stenosis. A thin tube (catheter) is inserted into an artery in your groin, and the balloon is threaded into the heart through the catheter. This will reduce the narrowing of the valve by inflating a balloon inside it and widening the valve to allow more blood to flow out of the heart.



What are the benefits having the BAV procedure?

The aim of the BAV is to reduce the narrowing in the valve by inflating a balloon inside it. This widens the valve to let more blood to flow out of the heart. This will help to ease your symptoms like shortness of breath and chest pain. This can help patients go on to have an aortic valve replacement or transcatheter aortic valve implantation (TAVI). A BAV can also help if you are waiting for any other surgery.

The valve will slowly narrow again over time, after the procedure. The length of time it takes for this to happen can vary for each patient. It is likely to start narrowing again after about 6 months.

What are the risks of the procedure?

Every procedure carries some risks, and these can be different for each person. There are a few risks related to balloon aortic valvuloplasty which you must think about before giving your consent to have the procedure done. The serious or most often occurring risks are:

Common risks

- Bruising or discomfort at the place the catheter is inserted
- 5 in 100 risk of causing the blood to flow the wrong way in the heart as the aortic valve does not close properly (significant aortic regurgitation)
- 10 to 20 in 100 risk of needing permanent pacemaker

Rare risks

- 1 to 2 in 100 risk of stroke, heart attack (myocardial infarction), or minor bleeding
- 1 in 100 people there is a risk of death
- 1 to 2 in 100 risk of collecting fluid around the heart.
- 1 in 100 risk of having infection of the inner layer of the heart and valve (infective endocarditis)
- 1 to 5 in 100 risk of bleeding which may need an operation
- Less than 1 in 1000 to 10,000 risk of radiation induced cancer by using the x-ray machine for the procedure.

Blood transfusion: It is very unlikely you would need to have a blood transfusion.

Other procedure: Temporary Cardiac Pacing.

Your doctors will have told you the risks that come with having or not having the valvuloplasty.

It is important that you feel informed and involved in that process. The risks listed above will be on the consent form you sign before the procedure.

Your pre-admission appointment

Eat and drink as normal for this appointment.

You will be asked to go to a pre-admission appointment at Clinic D Glenfield Hospital. This will take about 2 hours.

A nurse will check your current health and medical history. More information will be given to you at this appointment, and you will be able to ask questions.

You will also have an ECG (heart tracing) and blood tests.

Swabs will be taken to check for MRSA (a bacteria), from your nose and between your legs (perineum) and any visible skin wounds.

If you are on blood thinning medications or have diabetes, the nursing staff will talk to you about what tablets you may need to stop taking before coming into hospital.

Remember to bring all your usual medication with you to both your pre-admission appointment and on the day of your procedure.

What happens on the day?

- You will be admitted to the admission ward on the day of the procedure. We ask that you have a shower or bath on the morning of the procedure.
- You will need to fast before your procedure. Solid food will need to be stopped 6 hours before your procedure, and all fluids must be stopped 2 hours before the procedure.
- Hair will be removed from your groin area, arms and chest.
- A needle called a cannula will be inserted into the back of your hand.
- Please take all your morning medication unless you have been told not to.
- Please bring your current medication or recent prescription with you.
- It is a day case procedure. You will normally go home the same day or in the morning of the next day. Please bring an overnight stay bag with you if you need to stay overnight or longer if there are any complications after your procedure.
- You will be admitted to Ward 32. When you arrive, you will be told when you will be having your procedure.

What happens during the procedure?

- You will be taken on your bed to the catheter laboratory. You will be helped onto the table and attached to monitoring equipment. There will be a number of staff in the room with you.
- When you arrive in the catheter room, you will see that there is a lot of machinery. Although this can be quite overwhelming, do not be alarmed. This is specialist monitoring and X-ray equipment and will not harm you in any way.
- BAV is usually done under local anaesthetic. This means you will be awake.
- You will need to lie on an X-ray table. Heart monitor wires will be put on your arms and legs.
- The doctor will clean your left and right groin areas with a cold antiseptic liquid. A clean sterile sheet will be put over you to keep a sterile working area.
- You will then be injected with local anaesthetic in both groins to numb (freeze) the area where the tubes will be put into the blood vessels (1 in either side).
- Through the tubes (sheaths), the doctor will pass small thin tubes (catheters) up into the heart to measure the pressures in the heart.
- During the procedure, you may have injections of X-ray dye into the heart. You may have hot flushes. These will only last for a few seconds and are not painful.

- One of the tubes in your groin will be swapped for a slightly bigger tube. Some more local anaesthetic may be injected into the site to reduce any discomfort. The bigger tube is used to pass the balloon catheter up to the heart.
- You will be given an anti-clotting drug through the needle in your hand or arm. The balloon is then attached to a catheter to be passed up into the heart valve where it is blown up and let down again. This may be repeated a few times. At this point, you may feel dizzy. This is quite normal.
- Once the balloon has been let down and pulled out, you may have another X-ray dye injection.
- At the end of the procedure, the tubes/catheters are removed from the groin. A stitch (suture) will then close the blood vessel entry point. Staff will press firmly on the area to stop any bleeding.
- The procedure usually takes less than 1 hour, and you will have a nurse to support and reassure you during this time

Going back to the ward

- Your nurse will collect you from the catheter suite where a brief handover is given about you.
- When you get back to the ward, the nurse will check your blood pressure, pulse and pulses in your feet (pedal pulses). An ECG (heart tracing) will also be done. These are all routine checks that are needed in case any complications develop.
- You will now be told to stay on bedrest for 2 to 4 hours. It is important to check your ‘sheath site’ on a regular basis in case any bleeding starts. If any bleeding occurs, let the nurse know. The plaster can stay in place for 2 days then it can be taken off, as exposure to the air helps the wound to heal.
- Tell your nurse at once if you have
    - a fever,
    - chest pain,
    - swelling at the groin
    - pain in your groin or leg,
    - bleeding at your groin site.

If you have any specific worries about any of these issues, please talk to your consultant.

Going home after BAV procedure

If there are no complications, you will be able to go home the day after your procedure.

You will need to have someone to drive you home.

You should do as little as possible for 3 days this means **no**:

- heavy lifting
- heavy cleaning
- heavy shopping
- heavy gardening

In the unlikely event that your groin/ wound site starts to bleed, dial 999 (do not drive yourself to the Emergency Department). Whilst you wait for help:

- Lie down flat.
- Ask someone to apply pressure to the area. They must continue the pressure until bleeding stops or you get medical help.
- Keep your leg as straight as possible and head down.
- Slightly more common is the development of a painful bruise over the puncture wound in your groin. This is due to bleeding under the skin. If a painful lump does develop, especially if the groin becomes painful when walking, please get medical advice.
- Bruising or discolouration above and below the groin, even down to the knee may happen over the week after the BAV. This may look very unsightly. It changes from a blue-purple colour to yellow but is often not painful and is not serious. Paracetamol can be taken for minor discomfort.
- If there is any doubt or problem with your groin (or around the wound), within the first week of going home, you should contact your GP.
- If you notice that your leg wound becomes red, inflamed or oozing, then please contact your GP at once as these may be signs of infection.
- If your wound starts to swell or bleed or you feel more breathless than before then get help at once.

IMPORTANT – If you need immediate help, for example if you have chest pain, breathlessness, palpitations (noticeable heartbeats) or dizziness, please contact your GP immediately or go to your local Emergency Department.

Remember – if in doubt ring 999.

You should get urgent medical advice if you feel unwell with after the procedure with symptoms of:

- **chest pain**
- **dizziness**
- **fainting**
- **shortness of breath**

Driving

You are not legally allowed to drive for 1 week after this procedure.

You do not need to contact the DVLA unless you hold a PSV/HGV licence

Going back to work

This will depend on many factors, such as

- the overall state of your health and
- the type of work you do.

Please talk to your doctor about this.

What if I need an interpreter?

Please tell a member of staff if you need an interpreter. We are committed to promoting equality for all patients

More Information

British Heart Foundation – www.bhf.org.uk

The British Heart Foundation funds research into all heart and circulatory diseases and the things that cause them. The website contains a lot of helpful information, including:

- Tests for heart conditions
- Heart valve disease
- Caring for someone with a heart condition
- Cardiac rehabilitation
- Video about TAVI procedure

British Heart Valve Society – www.bhvs.org.uk

This is a group made up of medical staff with an interest in heart valve disease. It includes patient representatives. It is linked to the British Cardiovascular Society. It aims to improve the care of patients with valve disease by education and training programmes, literature and web information. It also aims to set standards of care for individuals, services and hospitals.

Heart Valve Voice – www.heartvalvevoice.com

A charity for heart valve disease. It is made up of people with real-life experiences of heart valve disease. It includes medical staff and patients.

Contact details

Structural Heart Valve Clinical Nurse Specialist: 07950 870853 (Monday to Friday, 8am to 4pm)

Structural Heart Valve Co-ordinator: 0116 258 3361 (Monday to Friday, 8am to 4pm)

Glossary

Cardiac catheterisation: A procedure to examine how well your heart is working. It is also to find out if you have disease of the heart muscle, valves or heart (coronary) arteries. During this test, doctor's put a long, narrow tube (catheter) into a blood vessel in your arm or leg. It is guided to your heart with the aid of a special X-ray machine. Doctors use contrast dye that they inject into your blood vessel through the catheter to create X-ray videos of your valves, coronary arteries, and heart chambers.

Coronary angioplasty: It is a treatment to widen the main blood vessels that supply the heart with blood and oxygen. A catheter with a tiny balloon at the tip is inserted into your arteries supplying blood to your heart. The balloon is inflated and deflated to widen the narrowed artery and improve the blood flow.

Catheter laboratory (Cath Lab): An examination room in a hospital or clinic. It has diagnostic imaging equipment used to visualize the arteries of the heart and the chambers of the heart and treat any stenosis or abnormality found.

Contrast dye: A solution that radiologists use to see your organs and tissues more clearly in your medical images such as X-rays, MRI and CT scan.

Electrocardiogram (ECG): A simple test that can be used to check your heart's rhythm and electrical activity. Sensors attached to the skin are used to detect the electrical signals produced by your heart each time it beats.

Haemodynamic support: Medications are used to keep your blood pressure and heart rate within the normal range.

Intensive care unit (ICU): Specialist hospital wards that provide treatment and close monitoring for people who are very ill.

Methicillin-resistant Staphylococcus aureus (MRSA): An infection caused by a type of staph bacteria that has become resistant to many of the antibiotics used to treat ordinary staph infections.

Percutaneous: a way to access the inner organs by needle (puncture of the skin)

Multidisciplinary team (MDT): A group of professionals with different clinical background who together make decisions about recommended treatment of individual patients.

Radiologist: A doctor who is specially trained to interpret diagnostic images such as X-rays, MRI and CT scans.

Temporary Cardiac Pacing: Temporary Cardiac Pacing is a method where a small electrical current is delivered to the heart to initiate the contractions artificially when the heart is insufficient to pump. A temporary pacemaker is used to treat a slow heart rate when the condition is short-lived or to bridge until a permanent pacemaker is placed.

Trans-catheter Aortic Valve Implantation (TAVI): Using catheters to replace your narrowed aortic valve.

Health information and support is available at www.nhs.uk or call 111 for non-emergency medical advice

Visit www.uhleicester.nhs.uk for maps and information about visiting Leicester's Hospitals.

To give feedback about this information sheet, contact uhl-tr.informationforpatientsmailbox@nhs.net

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہِ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔

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If you would like this information in another language or format such as EasyRead or Braille, please telephone 0116 250 2959 or email uhl-tr.equalitymailbox@nhs.net

We are a research hospital and you may be asked to take part in research

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