

Aortic stenosis and balloon aortic valvuloplasty (BAV)

This leaflet explains how a balloon aortic valvuloplasty (BAV) is used to treat aortic stenosis. Please feel free to ask your doctor any questions you may have about this treatment.

What is aortic stenosis?

The aortic valve is a small flap of tissue between the lower chamber of your heart and the large artery (aorta) that takes blood around your body and to your vital organs. The aortic valve ensures that the blood runs in one direction only.

Aortic stenosis is when the valve narrows because of a build-up of calcium. This stops the valve from working properly and blocks the flow of blood out of the heart. This means your heart may have to work harder to force blood past the valve.

Symptoms of aortic stenosis are:

- Weakness and shortness of breath during physical activity.
- Chest discomfort.
- Fainting episodes.

What is BAV and what are the benefits of having the procedure?

The standard treatment of aortic stenosis is surgical aortic valve replacement (SAVR), which involves an operation to open the chest.

BAV is offered to patients:

- Who are unsuitable for open heart surgery or transcatheter aortic valve implantation (TAVI) as it is considered to be too high risk.
- Where we are not certain that the aortic stenosis is causing the symptoms.
- To minimise the need for further treatment and reduce the risk of surgery.

The aim of the BAV is to reduce the narrowing in the valve by inflating a balloon inside it and widening the valve to allow more blood to flow out of the heart.

The valve will gradually narrow again following the procedure. The length of time it takes for this to happen can vary between in each patient.

What are the risks associated with BAV?

As with any operation, there are risks involved with BAV. These vary from patient to patient and include:

- A potential risk is that widening the valve will then stop it from closing properly and cause it to leak. This is known as regurgitation.
- In our experience and in published data, other risks include: heart attack, stroke and disturbances to the heart rhythm.
- Internal bleeding from blood vessels that the device is inserted into as the blood vessels are often fragile due to age and other disease processes.

There is a 10% chance (1 in 10 patients) of complications occurring during the procedure. We carefully screen all our patients to ensure the complication rate is minimised but please understand this is a high-risk procedure.

Is BAV right for me?

You are being considered for BAV after being reviewed by a consultant cardiologist and / or surgeon. They will review your echocardiogram (an ultrasound scan that looks at your heart and nearby blood vessels) and your medical history to ensure that you are suitable for the procedure. Your details will be discussed at our local (Reading) and also a dedicated specialist (London) multi-disciplinary team (MDT) meeting to make sure that BAV is the most suitable option for you.

The other remaining option is medical management, which involves continuing with your medications to help with symptom control.

What happens during the procedure?

The procedure is carried out under local anaesthetic, in the catheter laboratory. It takes approximately one hour. During this time, and for a few hours after you will need to remain lying flat, but will be awake throughout.

The procedure involves attaching a deflated balloon to a narrow tube (called a catheter), and then passing this through a large blood vessel in your leg up to the narrowed valve. This involves making a small hole (puncture) in your groin to insert the catheter.

We use X-rays to ensure that balloon is in the correct position. When the balloon is inside the valve it is inflated to widen the valve and allow blood to flow out more easily. At the end of the procedure the balloon is deflated and removed from the body.

If you do not already have a pacemaker, we will insert one temporarily for the procedure. This allows the doctors to increase your heart rate during the balloon inflation. During this time, you may feel your heart beating fast and this can cause a light-headed or dizzy spell but this will only last for a few seconds. They need to do this to ensure the balloon is correctly positioned. It will be removed after the procedure if there are no complications.

How do I prepare for BAV?

If you are taking Warfarin (or other anticoagulation), you must stop taking them five days before your procedure. Please speak to your cardiologist about this and whether you need an alternative blood-thinning medication during that time. Do not stop taking Warfarin tablets until you have discussed this with your doctors.

What happens after the procedure?

You will have an echocardiogram immediately afterwards in the catheter lab. After this we will transfer you back to either the Cardiac Care Unit (CCU) or the Intensive Care Unit (ICU) where staff will monitor the groin puncture site regularly and your heart rate and blood pressure. You will need to lie flat for a few hours.

When can I go home?

Often these procedures are performed in an emergency setting and so discharge will depend on your clinical condition and response to treatment. If this is a planned (elective) procedure, you will need to stay on the ward overnight. The cardiology team will review your observations the next morning and check your groin site for any swelling or bleeding. If there are no concerns, you may be able to leave hospital that day.

We would not advise that you travel home by yourself or take public transport. Whenever possible, relatives or friends should drive you home.

Recovering from BAV

When you leave hospital, give yourself a week or so to get your strength back before returning to everyday activities. Avoid anything strenuous, such as lifting heavy objects, shopping, excessive pulling or pushing. You can start with regular walks and increase their length on a daily basis. You do not have to avoid climbing stairs – just take them slowly and steadily to start with. After a week or two you should be back doing things you used to. You may even find that you can do more if the aortic stenosis was holding you back before.

Is there anything I need to watch out for at home?

If you notice that your leg wound becomes red, inflamed or oozing, then please contact your GP immediately as these may be signs of infection.

Also, if your wound starts to swell or bleed or you feel more breathless than before then seek help immediately. You can call the Jim Shahi Unit (0118 322 6502) or the Cardiac Care Unit (0118 322 6528).

When will I be able to drive again?

You are not legally allowed to drive for one month after this procedure. If you have a large goods vehicle (LGV) or passenger carrying vehicle (PCV) licence, you will need further testing before you get your licence back. You will need to discuss with your doctors and your employer.

Travelling by plane

It is safe to fly to any destination one month after the procedure, provided that you have not had any complications and that you are not the pilot.

Returning to work

This will depend on many factors, such as the overall state of your health and the type of work you do. Please discuss in more detail with your doctor.

Will I have to come back to hospital for a follow-up?

Yes. This will depend on your specific clinical condition but will be within a few weeks of your procedure. During the follow-up appointment we will evaluate your recovery, response to treatment and formulate a further management plan.

Please do not hesitate to speak to one of your doctors or ward nursing staff if you have any questions or concerns.

Useful contacts

Cardiac Reception Enquiries 0118 322 6515
Cardiac Care Unit 0118 322 6528
Jim Shahi Unit 0118 322 6502
Clinical Admin Team (CAT 11) (bookings): 0118 322 6676 (Mon - Fri, 8am - 5pm)
British Heart Foundation: www.bhf.org.uk/

To find out more about our Trust visit www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

Dr Neil Ruparelia, Consultant Cardiologist, RBFT Department of Cardiology, January 2023.
Next review due: January 2025.