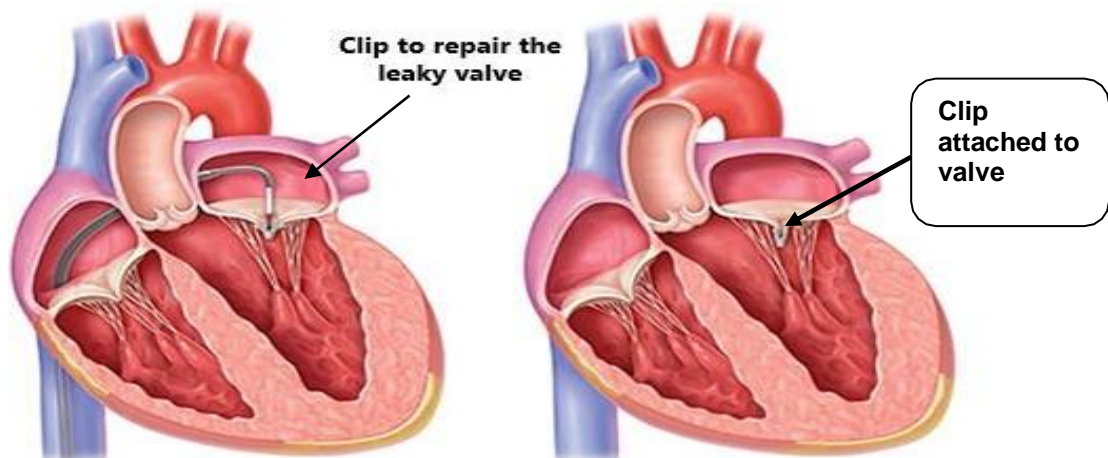


Patient Information

Cardiac Services

Key-hole approach to repair heart valve (without open heart surgery) - TEER

Transcatheter Mitral Valve Edge-to-Edge Repair - TEER



Patient Information

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Patient Information

Introduction

You have been diagnosed with mitral valve disease by your doctor.

We hope that this information will help you to understand your condition and treatment options available, in particular a heart valve repair procedure known as TEER (transcatheter mitral valve edge-to-edge repair).

We also hope that this information is useful for your family and/or carers to understand your condition so that they can support you before and after any procedures that take place.

We do hope this booklet proves to be useful.

If you have any suggestions to improve its content or if you feel things could be explained differently, please contact us with your suggestions using the following contact details:

nishant.gangil@uhcw.nhs.uk (Consultant Cardiologist)

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What is mitral valve disease?

Mitral valve problems can either involve narrowing of the valve (mitral stenosis) or leaking of the valve (mitral regurgitation). In both scenarios, people can have symptoms like breathlessness, swollen feet, and difficulty in exercising.

Mitral stenosis can present in young patients after bacterial infection of the heart or in elderly patients due to deposition of calcium on the mitral valve.

Mitral regurgitation can either be due to age related valve degeneration, secondary to bacterial infection, or a problem with the heart muscles.

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Over time the heart muscle weakens. This affects your overall health and may stop you from taking part in your normal daily activities. Without treatment, mitral valve problems are a very serious, life-threatening condition, leading to heart failure and risk of sudden cardiac death.

Mitral valve problems are often not preventable and may be related to:

- age related valve degeneration
- a build-up of mineral (calcium) deposits that narrows the valve (stenosis)
- radiation therapy
- a history of a bacterial infection of the heart (rheumatic fever)

Signs and symptoms of mitral valve problems

These can include:

- shortness of breath
- irregular heartbeat (palpitations)
- unusual sound heard during a heartbeat (murmur)
- swelling of the feet

What are the possible treatment options for mitral valve disease?

Having an artificial (biological or mechanical) valve is the traditional treatment for patients with severe mitral valve disease who are fit enough for surgery.

This is known as Surgical Mitral Valve Replacement, or SMVR, and involves making a large cut in your chest bone to access your heart.

Up until recently, if you are not fit enough for surgery, your treatment options would have been focused on helping to manage your symptoms only through medications. Examples of this would be taking medicine to help you urinate more which can reduce breathlessness, and medicines to prevent the size of your heart getting bigger.

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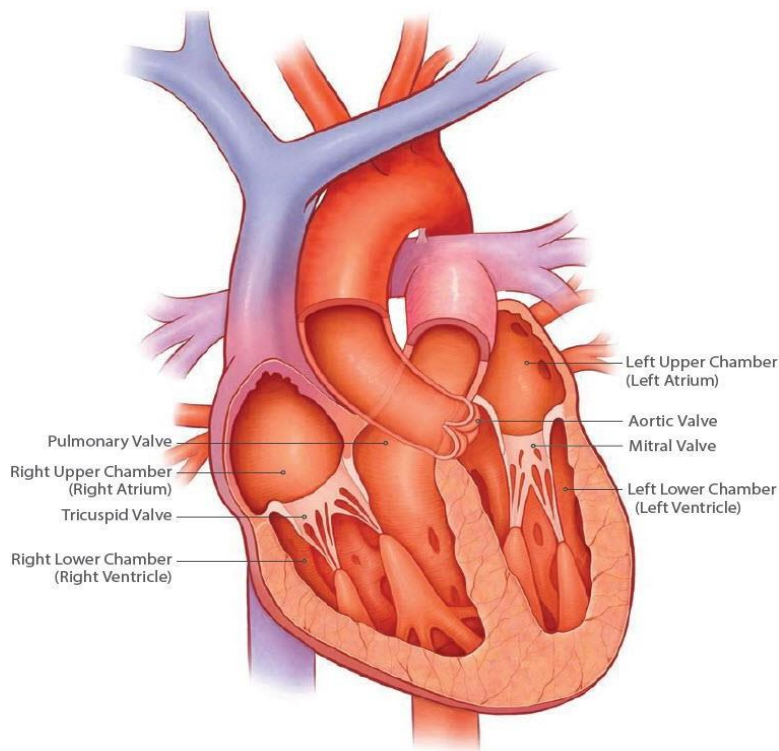
Medicines may help control your symptoms for a period of time. However, without mitral valve replacement, mitral valve disease could worsen to a more serious condition.

Depending on your individual health needs, UHCW can now offer patients who are not suitable for traditional surgery keyhole valve procedure called:

- **Transcatheter Mitral Valve Edge-to-Edge Repair (TEER)** in case of leaky mitral valve (mitral regurgitation)

How the heart works

A normal heart has four chambers. The upper two chambers are the right and left atria. The lower two chambers are the right and left ventricles. The heart's job is to supply the body with oxygen-rich blood. Blood is pumped through the four chambers with the help of four heart valves: the tricuspid, pulmonary, **mitral** and aortic valves.



The mitral valve separates the upper left heart chamber (left atrium) from the lower left heart chamber (left ventricle). The mitral valve has two flaps, called leaflets. The leaflets open to let the blood flow into the left ventricle, and close to stop blood flowing backwards to the left atrium.

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Mitral regurgitation: when the leaflets do not close properly, with every heartbeat blood may leak in reverse direction towards left atrium.

Mitral stenosis: when the leaflets do not open normally, blood may not flow normally towards left ventricle, increasing back pressure in the arteries of the lungs.

What is transcatheter mitral valve edge-to-edge repair (TEER)?

Until recently, leaking or narrowed mitral valves were repaired or replaced with open heart surgery. This involved general anaesthesia (patient completely paralysed) and going through the chest bone, before replacing or repairing the mitral valve.

TEER is also done under general anaesthesia, but it is a keyhole procedure to repair the mitral valve. It does not involve splitting the chest bone. This procedure involves passing a thin flexible tube through one of the blood vessels in the groin. On the top end of this tube, a clip is attached which holds the leaflets together in the abnormal area of the valve and holds it to together to abolish the leak.

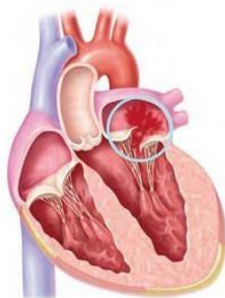


Fig 1. Heart with abnormal mitral leaflets

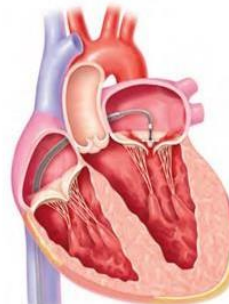


Fig 2. Mitral valve clip being inserted

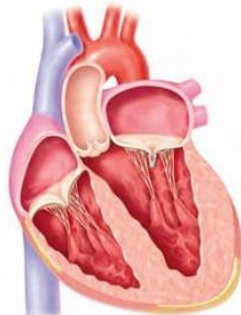


Fig 3. Mitral valve clip in place



Fig 4. Close up of mitral valve and clip

Patient Information

Benefits of TEER procedure

Even with the best medical treatment, mitral regurgitation gets worse over time, leading to signs and symptoms of heart failure such as breathlessness, fatigue, and swollen ankles.

70% (7 out of 10) find their symptoms get better after TEER procedure and they can get back to daily activities.

Risks of TEER procedure

This procedure is considered if the doctors feel that traditional open-heart surgery would be high risk.

Like any other medical procedure, TEER involves the following risks:

- Stroke: Risk of 1 in 100 (1%)
- Death: 1 in 100 (1%)
- Bleeding: 5 in 100 (5%). This is usually at the access site and can be managed by manual compression in most cases.
- Collection of blood around the heart requiring drainage: 1 in 100 (1%)
- Abnormal heart rhythm: 5 in 100 (5%). This is usually treated with drugs but sometimes may require an electric shock to recover.
- Damage to teeth, throat and oesophagus: During the procedure, the doctor will put another flexible tube (a probe) down your throat into your swallowing tube (oesophagus). This is called transesophageal echocardiogram (TOE), which enables the cardiologist to perform the TEER procedure. Inserting this probe can damage your teeth, throat, and oesophagus. The risk of this happening is 1 in 1000 (0.1%)

Alternative to TEER procedures

The two alternative treatments available for mitral valve disease are:

- Surgery – open heart surgery, as previously mentioned
- Medical therapy - medication can help to relieve your symptoms, but your mitral valve will continue to get worse. If your mitral valve is not repaired or replaced, you will continue to have symptoms such as breathlessness, fatigue and swelling over your legs

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It is important to talk to your doctor about the effects of not having the procedure.

What will happen before the procedure?

Preparing for any mitral valve procedure requires a series of hospital tests that are essential to make sure that your mitral valve problems will benefit from this procedure. The tests also check that it would be a safe procedure for you.

The tests may include:

- a chest X-ray to look at your lungs
- an ECG to check your heart rhythm
- lung function tests to see how well your lungs work
- a transthoracic echocardiogram (externally looking at your heart with ultrasound)
- a transoesophageal echocardiogram – (a more detailed ultrasound of your heart)
- a coronary angiogram to look at the coronary arteries that supply blood to your heart

You may already have had some of these procedures. The medical team will talk to you about whether they need to be repeated.

What can I do to improve my health before TEER procedure?

Stop smoking

If you smoke, you should try to stop completely or at least for several weeks before your treatment. This reduces the risk of breathing problems and makes your anaesthetic safer.

The sooner you stop smoking, the more it will reduce your risk. There is plenty of support available to help you give up for good.

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Please talk to your GP, pharmacist or call SMOKEFREE on 0800 0224 332.

Controlling your weight

If you are overweight, losing weight before your treatment will reduce many of the risks when having an anaesthetic.

Visit your GP

If you have any ongoing medical problems such as diabetes, asthma, bronchitis, thyroid problems, or high blood pressure (hypertension), you should ask your GP if you need a check-up.

Hospital admission

Once accepted by the team for mitral valve procedure, you will be invited in for the procedure. You will receive a letter with your admission details.

This will usually ask you to stop any blood thinning medications either 48 hours before or 4 days (if Warfarin) before your operation. You may be asked to come in the day before your procedure for preparation.

Before the operation, you will be seen by members of the operating team. You will need to be nil by mouth (including water) from midnight before your procedure and the nurses will help you to shave your chest, wrists, and groin, and also to shower.

The procedure will be done in the catheter suite, sometimes known as the "Cath lab."

After your procedure

- You will go from the catheter suite to either the coronary care unit (CCU) or cardiothoracic critical care (CTCC) where you will be closely monitored.

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- Normally you are woken up early after the operation. Sometimes, you may need to stay asleep and if this is needed you will be kept sedated and if necessary, admitted to CTCC.
- Whilst there are tubes in your groin, you will have to be on bed rest.
- When these tubes are removed you can sit out and start to walk about.
- Some patient will be able to go home the same day as their procedures whereas others may need to stay in for a couple of days depending on how quickly you recover.

Recovery at home

You should have someone to care for you for the first week after you leave hospital. Please speak to your nurse or doctor as soon as possible if you think this will be a problem.

The following are general guidelines as everyone's recovery is different.

Activity

- You should avoid strenuous activity for 4 weeks. This includes heavy lifting (such as shopping, suitcases) or pushing and pulling (such as cutting grass, vacuum cleaning).
- It is important for your recovery that you have a short walk every day. This can gradually increase. You may feel tired and need to rest in the afternoon.
- You do not have to avoid climbing stairs or walking up hill. You may have to start off at a slower pace and you may feel slightly out of breath when walking. This should improve as your fitness level increases.
- You may notice that your ankles are swollen after the procedure. This is due to fluid retention. Please contact your GP if this swelling travels further than your ankles

Patient Information

Wounds

- Your wounds should be healed by the time you leave hospital. If they still require dressing, we will organise a district or practice nurse to continue this.
- The stitches are dissolvable so do not have to be removed. Please get your GP or practice nurse to check your wound if it becomes red or inflamed.
- You may have bruising to your groin(s) for a few weeks.
- You may have a hard lump under the skin due to a collection of blood (haematoma). Please talk to your GP if this becomes painful or grows bigger.
- Please continue to shower every day. You can use liquid soap. It is safe to get your wound wet but avoid putting soap directly onto your wound or rubbing your wound before it has healed completely. It is important to keep this area dry between showers.

Medication

- As well as your normal medicines including aspirin, you will usually be discharged with an additional blood thinning medicine called clopidogrel. You will need to take this for at least three months. After this you will only need to take the aspirin.
- People on warfarin may have only aspirin or clopidogrel.
- You may be discharged with some painkillers which we would recommend you take regularly until you are no longer getting discomfort from your wound(s).
- You can contact your GP or the cardiologist if you are confused regarding your medications.

Driving

You are not allowed by the DVLA (Driving and Vehicle Licensing Agency) to drive for 4 weeks after your procedure.

You will need to inform your insurance company and the DVLA that you have had your mitral valve repaired.

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If you have an LGV or PCV licence, you will need to have an exercise test before getting your licence back.

Air travel

Please check this with your consultant, or nurse. In most cases, you can travel by plane 7 days after your procedure. The clip device will not set off metal detectors at airports.

Work

If you were working before your procedure, you should be able to return to work after about 4 weeks.

Follow-up care

When you leave hospital, an electronic letter will be sent to your GP explaining what you have done and a list of your medications.

If you have any concerns, you can call:

Coronary Care: 024 76965656

Secretary: 02476 965669

We would like to hear sooner rather than later about any potential problems.

You will be invited to attend an outpatient follow-up appointment about 3 months after your procedure

Further follow-up clinics are usually arranged 12 months after your procedure. During this visit you may have an ECG and chest X-ray.

After 3 months, you will have an ultrasound scan of your heart and see the cardiologist. The doctor will then decide about any future appointments.

Patient Information

The Trust has access to interpreting and translation services. If you need this information in another language or format, please contact 024 7696 5656 and we will do our best to meet your needs.

The Trust operates a smoke free policy.

Did we get it right?

We would like you to tell us what you think about our services. This helps us make further improvements and recognise members of staff who provide a good service.

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www.uhcw.nhs.uk/feedback



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