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Coronary angiogram and angioplasty/stenting

Your doctor has recommended you undergo a procedure called a coronary angiogram. During this procedure, it may be decided that you also need angioplasty and/or stenting.

You might not have heard these medical terms before now and may be feeling unsure about the nature of the procedure.

This information sheet outlines what the procedure is and what preparations and risks are involved.

After you read this information sheet, you might still have questions. If you do, please contact the team at Heart HQ. We're here to help.

1. What's a coronary angiogram?

A coronary angiogram is a very common procedure. It is used to see if coronary arteries have narrowed or become blocked, making it difficult for blood to pass through them.

2. How does it work?

An intravenous line (IV) will be placed into a vein in your arm. This is for the medical team to administer medication throughout your procedure. Prior to the procedure, you'll receive a mild sedative through the IV to relax you.

A fine catheter (less than 2mm width) will be placed under ultrasound guidance into the artery in your right wrist, or sometimes your groin. Your Heart HQ Doctors have adopted the innovative approach of 'distal radial access' which provides improved patient care and comfort and reduces complications such as bleeding and bruising.

Prior to the catheter being inserted, you'll be injected with local anaesthetic in your wrist or groin. The tube will pass into your coronary arteries and take a series of x-ray pictures. We will inject radio-opaque dye to provide contrast for the x-ray images. These pictures will help us find any narrowing or blockages.

3. What's angioplasty and stenting?

If a blockage or narrowing is detected in your coronary arteries, then your doctor may decide to perform angioplasty and stenting rather than open heart surgery. The correct treatment depends on what degree of disease has been assessed. But the risks for angioplasty and stenting are lower than for open heart surgery.

4. How does it work?

A fine wire will be positioned across the narrowing and a small balloon will be inflated to push the plaque into the arterial wall. A stent will usually be placed to keep the disease segment of the artery open. It will act like a metal scaffold to make sure the blood flow remains normal.

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5. Complex cases

Sometimes, the procedure isn't that simple. This may be because the coronary artery is split or damaged, or the artery becomes narrowed or blocked again once the balloon deflates.

In this case, one or more stents—metal tubes or spring coils—may be placed in the artery to keep it open after the procedure. A balloon will place the stent in the artery. Once the procedure is done, the balloon will be removed but the stent will remain in place for the rest of your life.

Additional mechanical devices may be used to assist the procedure—such as pressure wires (FFR), an intravascular ultrasound (IVUS), optical coherence tomography (OCT), a small drill (rotational atherectomy) or cutting balloons that cut or crack the blockage with sound waves (lithotripsy).

You may need a special plug or stitch to stop the bleeding when we close your artery. If we decide this is necessary, we will discuss it with you in detail.

There is a risk of your blood clotting or the stent blocking. To reduce this risk, medication such as Clopidogrel or Ticagrelor will be prescribed for up to four weeks and sometimes longer. You may need to continuously take a small daily dose of Aspirin or other anticoagulation agents (blood thinners) for the rest of your life.

If a stent is placed you will need to remember to tell your future treating doctors.

6. What kind of risks are associated with this procedure?

Any kind of procedure carries some element of risk, often very small and rare.

Your doctor has balanced the benefits and risks of carrying out the procedure against the benefits and risks of not proceeding. If your doctor has recommended this procedure, they believe there is benefit to you going ahead.

It's important you understand the risks involved so you can make an informed decision.

Here are the most commonly reported risks and complications associated with angioplasty and stenting.

Common risks and complications (more than 5% of cases):

- Minor bruising at the puncture site
- Major bruising or swelling at the puncture site
- The coronary artery can become narrowed or blocked again. Many factors can influence this and your doctor will discuss these with you

Uncommon risks and complications (1-5% of cases):

- Abnormal heart rhythm that continues for a long time—this may need an electric shock to correct
- Loss of pulse in the wrist after a radial artery (wrist) procedure
- A heart attack
- Surgical repair of the groin/arm puncture site or blood vessel

Rare risks and complications (less than 1% of cases):

- The stent may suddenly close within the first month. This can cause angina or heart attack. It may be treated with another angioplasty or with surgery.
- Emergency heart surgery due to complications with the procedure
- Reaction to the medications given to prevent blood clotting
- Minor reaction to the x-ray dye such as hives
- Loss of kidney function due to the side effects of the x-ray dye
- A stroke—this can cause long term disability
- An allergic reaction to the x-ray dye
- A higher lifetime risk of cancer from x-ray exposure
- Rupture of a blood vessel requiring surgical repair and blood transfusion
- Skin injury from radiation, causing reddening of the skin
- Death as a result of this procedure is rare

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7. Angioplasty and stenting for a heart attack

If you are presenting with a heart attack, the outcomes of angioplasty and stenting depend on the following factors:

- your age
- number of arteries supplying blood to the heart that are diseased
- location of the heart attack
- time taken to present to the hospital following the heart attack
- degree of blood flow in the blocked artery
- your clinical status.

The less of these risk factors you have the better the clinical outcomes. If more than one artery is diseased you may need future procedures.

Alternatively, you can be treated with clot busting medication. Your doctor will discuss this option with you, including risks and benefits.

If you are having angioplasty and stenting as treatment for a heart attack, the risk of a poor outcome may be higher than the risks outlined above and depends on the severity of the heart attack. Again, your doctor will discuss this with you in detail.

Our commitment to you

As a patient of Heart HQ, you can be assured we will always strive to act in your best interests and we will only recommend tests and procedures we believe will benefit you.

Everyone has questions, and we want to answer yours. Please contact your doctor to discuss any concerns you might have.

I consent to having this Coronary Angiogram and Angioplasty/Stenting.

- I acknowledge that I have consented to the procedure detailed in this form. I understand the explanation the doctor has given me as to the need and benefits related to this procedure.
- I understand the procedure carries some risk and complication may occur.
- I understand an additional procedure(s) may be needed if the doctor finds something unexpected.
- I consent to anaesthetics, medicines or other treatments which could be related to this procedure.
- I understand blood transfusions (if required) carry some risk and complications may occur which have been explained to me.

Name of patient

Signature **Date**

Name of substitute decision-maker

Name of patient having procedure

Signature **Date**

I have explained to the patient all the content in this patient consent form and I am of the opinion that the patient/substitute decision-maker has understood the information.

Name of doctor/clinician

Designation

Signature **Date**