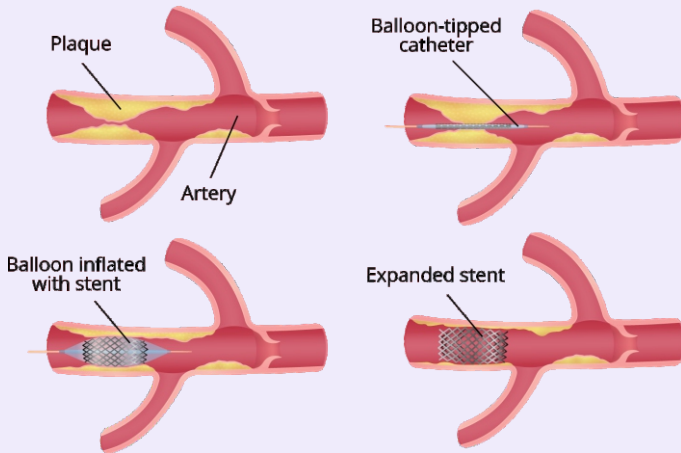




What is **Angioplasty**

ANGIOPLASTY



Introduction

Coronary angioplasty is a treatment to widen narrowed sections of the heart (coronary) arteries. It is also known as percutaneous coronary intervention (PCI). It does not involve major heart surgery but involves the use of a thin, flexible tube (a catheter) which is inserted into coronary arteries via large blood vessels.

The catheter is inserted into a coronary artery. The balloon at the tip of the catheter is blown up at the narrowed section of artery to force it wider. A small tube (a stent) is left in place to keep the artery widened.

What is coronary angioplasty used for?

Coronary angioplasty is commonly used to treat people who have angina. In these people, angioplasty is usually carried out 'electively'. This means a time and date are chosen to do the procedure.

However, angioplasty can also be used to help in emergency situations, such as when a person has a heart attack (myocardial infarction). A heart attack occurs because part of the heart is not receiving enough blood. This is usually caused by a blockage in an artery supplying blood to the heart itself. Coronary angioplasty is used to widen the artery surrounding the blockage. This helps blood flow back to the affected area and reduces the damage to the heart.



How is coronary angioplasty done?

You lie on a couch in a catheterisation room. An X-ray machine is mounted above the couch. A thin, flexible 'guide' tube (catheter) is inserted through a wide needle or small cut in the skin into a blood vessel in the groin or arm. Local anaesthetic is injected into the skin above the blood vessel. So, it should not hurt when the catheter is passed into the blood vessel. The doctor gently pushes the catheter up the blood vessel towards the heart. Low-dose X-rays are used to monitor the progress of the catheter tip which is gently manipulated into the correct position. You may be able to see the progress of the catheter on the X-ray monitor.

The tip of the catheter is pushed inside a heart (coronary) artery down to where there is a narrowed section caused by the fatty patches, or 'plaques', (atheroma). A second thinner 'balloon catheter' is then passed down the 'guide' catheter. There is a balloon and a small tube (a stent) at the tip of the balloon catheter. The balloon is blown up for 30–60 seconds. This squashes the atheroma and widens the narrowed artery. When the balloon is blown up it stops the blood flow. Therefore, you may have an angina-like pain for a short time. However, this soon goes after the balloon is let down.

Usually, a stent is left in the widened section. The stent is like a wire mesh tube which gives support to the artery and helps to keep the artery widened. The 'collapsed' stent covers the balloon and is opened as the balloon is blown up. Some stents are coated with a chemical that helps to prevent the artery from becoming blocked again. People who are known to have an allergy to nickel may need a nickel-free stent.



The procedure may be repeated for one or more narrowed sections within the coronary arteries.

You cannot feel the catheter inside the blood vessels. You may feel an occasional missed or extra heartbeat during the procedure. This is normal and of little concern. During the procedure your heartbeat is monitored by electrodes placed on your chest which provide a tracing on an electrocardiograph (ECG) machine. Sometimes a sedative is given before the test if you are anxious.

How do I prepare for a coronary angioplasty?

You should receive instructions from your local hospital about what you need to do, which may include:

- If you take any 'blood-thinning' medicine such as warfarin or another anticoagulant, you will need to stop this for 2-3 days before the test (to prevent excessive bleeding from the site of the thin, flexible tube-catheter insertion).
- If you take insulin or medicines for diabetes, you may need to alter the timing of the dose. Some medicines may need to be stopped for 48 hours. Your doctor should clarify this with you.
- You may be asked to stop eating and drinking for a few hours before the procedure.
- You may be asked to shave both groins before the procedure.



How long does coronary angioplasty take?

If just one section of artery is widened, the procedure usually takes about 30 minutes. If several sections are to be widened then the procedure takes longer. You may need to stay in hospital overnight for observation following the procedure.

How successful is coronary angioplasty?

More than 9 in 10 procedures are successful at relieving angina. However, coronary angioplasty cannot be used for all people with angina. This is because in many cases there are too many narrowed sections in the heart (coronary) arteries. Or, the sections that are narrowed are too long, or too narrow, or too far down a coronary artery or branch artery for this procedure.

After an angioplasty

You should avoid any heavy activities such as lifting for about a week until the small wound, where the thin, flexible tube (catheter) was inserted, has healed. You should not drive a car for a week after having an angioplasty.

Drug-eluting Stents



Complications and side-effects

One common problem is that a bruise may form under the skin where the thin, flexible tube (catheter) was inserted (usually the groin). This is not serious but it may be sore for a few days.

Long-term complications

In some cases, the fatty patches, or 'plaques', (atheroma) re-form within the small tube (stent) over the following few months and years. This may narrow the artery again and angina pains may return. It is difficult to explain as to how often this occurs. If it does, the procedure can be repeated, or other treatments for angina can be considered, such as coronary artery bypass grafting.

Newer techniques are being developed to try to prevent this possible problem. For example, stents that are coated with chemicals which prevent the local formation of atheroma are being developed. It may be possible that these coated stents (called drug-eluting stents) will be commonly used in the near future.

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