

HKSH Cardiology Centre

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Service Hours

Monday to Friday: 9:00 am – 5:00 pm
Saturday: 9:00 am – 1:00 pm
Closed on Sundays and Public Holidays
Consultation by Appointment

Admiralty

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Service Hours

Monday to Friday: 10:00 am – 1:00 pm
2:00 pm – 6:00 pm
Saturday: 10:00 am – 1:00 pm
Closed on Sundays and Public Holidays
Consultation by Appointment

For emergency, please contact us through
Hospital Main Exchange: (852) 2572 0211
Outpatient Department: (852) 2835 8600

For enquiries and appointments,
please contact us



Diagnosis & Treatment of Coronary Artery Disease



Coronary Artery Disease is the most prevalent among all cardiovascular diseases. It occurs when the coronary arteries, which supply oxygen and nutrients to the heart muscle, become narrowed or blocked because of plaque deposition inside the vessel wall or clot blocking the lumen. The result is ischemic heart disease in which the heart muscle's vital supply is being jeopardised.

Cardiac Catheterization and Coronary Angiography is an invasive “gold standard” procedure which is commonly performed to diagnose coronary artery disease. Balloon Angioplasty and Stent Implantation is an interventional therapeutic procedure which is commonly performed to open up clogged arteries in the same sitting.

The Diagnosis Cardiac Catheterization & Coronary Angiography

What Is the Purpose of Cardiac Catheterization & Coronary Angiography?

Cardiac Catheterization and Coronary Angiography can help to find out the general condition of your heart's structure and, most importantly, whether there is blockage of your coronary arteries. Based on the findings of the angiography, your physician can choose the most suitable treatment regimen for you. One of the treatment options is Balloon Angioplasty and Stenting.



How to Prepare for the Procedure

1. Patients are admitted to the hospital on the day of the procedure or one day before
2. Take the pre-procedural medications as prescribed. If you are taking other drugs, inform your doctor so that he can make necessary adjustments
3. Routine blood tests and Electrocardiogram (ECG) will be undertaken on the day of admission. Make sure your doctor knows about any allergies you have, especially allergies to iodine, seafood, X-ray dye or medications
4. If a trans-femoral procedure (access from the groin) is more suitable for you, the nurse will shave your groin area to facilitate insertion of the catheter and help prevent infection
5. You should stop eating and drinking at least 4-6 hours before the procedure

How Is the Procedure Performed?

1. An intravenous (IV) needle and a catheter will be placed in the vein of your forearm. IV fluids or medications can be administered quickly and easily through this catheter if necessary
2. A mild sedative drug may be given to help you relax at the discretion of your physician
3. You will be transferred to the Cardiac Catheterization & Intervention Centre for the procedure. Empty your bladder before leaving your room
4. You will be hooked up for rhythm and oxygen content monitoring
5. A disinfectant will be used to cleanse the puncture site. You may be asked to put your hands alongside your body or above your head
6. Coronary Angiography is performed under local anaesthesia. A small puncture is made usually in the wrist (trans-radial approach) or groin (trans-femoral approach). A sheath is inserted into the opening and a catheter is advanced through the sheath into your coronary artery

7. After a dye is injected, the coronary arteries will come into view under X-ray. This allows the physician to assess if there is any narrowing or blockage of your coronary arteries. Nowadays, Balloon Angioplasty and Stenting are usually performed to open the clogged arteries in the same sitting



8. Your physician may ask you to take a deep breath in and hold it for a few seconds in order to obtain clear pictures of your heart



9. You may experience a transient “hot flush” when the X-ray dye runs through your heart, especially with a higher dosage (~20-30ml) for left ventriculography. This feeling is normal. There is no need to worry
10. You will be fully awake during the procedure. Tell your physician if you experience any discomfort

What Happens after the Procedure?

1. The sheath will be removed immediately after the procedure with the assistance of a device such as C-clamp or closure device to stop bleeding. Alternatively, the physician will apply firm and direct pressure for 10-15 minutes over the puncture site in order to stop the bleeding. A pressure dressing will be applied afterwards
2. Lie flat in bed for at least 6 hours after the operation
3. The nurse will check your blood pressure, pulse, puncture site and foot sensation frequently
4. Stay lying flat in bed with your leg straight. Do not try to bear down, strain or sit up until your nurse or doctor instructs you to do so
5. If you happen to cough or sneeze, apply gentle pressure on the dressing site with your fingers to prevent bleeding
6. If you notice blood on the dressing or a numb / painful sensation in the area of the puncture or the lower limb / hand, call a nurse at once
7. You may resume eating after the procedure. Increased fluid intake can help to flush the X-ray dye out of your body more quickly



* If your condition is stable and there is no bleeding from the puncture site, you may be discharged on the same day or early next day (at the discretion of your attending physician).

Going Home

1. You may shower as usual
2. Keep the puncture site clean and dry
3. Do not lift heavy objects, do strenuous exercise or bear down (in the case of groin approach) for 2 weeks
4. Seek immediate medical attention if there are signs of swelling, redness or heat over the wound

The Treatment

Balloon Angioplasty & Stenting

What Is the Purpose of Balloon Angioplasty & Stenting?

Balloon Angioplasty and Stenting is medically known as Percutaneous Transluminal Coronary Angioplasty (PTCA) and Stenting (PTCS). It is usually performed after Coronary Angiography in the same sitting to open narrowed or blocked coronary arteries. A small inflatable balloon mounted on a catheter is used to compress the plaque against the wall of the blood vessel. In this way, the diameter of the vessel is increased and normal blood flow is restored. To reduce post-procedural re-narrowing of coronary arteries over time, your doctor may recommend the placement of stents (small mesh metal tubes) in your coronary artery to keep it patent. The newer drug-eluting stent systems can reduce the incidence of re-narrowing down to 5%.

Adjunctive devices such as high speed rotational atherectomy (for calcified blood vessels), directional coronary atherectomy, filter wire (distal protection device) and thrombectomy are sometimes employed to help in complex coronary interventions.



How to Prepare for the Procedure

1. Patients are admitted one day before the operation or on the same day for basic investigations such as blood tests and Electrocardiogram (ECG)
2. Tell your doctor about your current medication so that he can make necessary adjustments. Take only the prescribed medications after admission

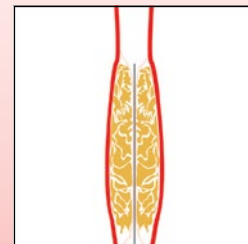
3. Make sure your doctor knows if you are allergic to seafood, medicine (e.g. aspirin) or X-ray dye
4. Our nurse will cleanse and shave your groin area in case groin puncture is contemplated
5. Stop eating or drinking at least 6-8 hours before the operation

How Is the Procedure Performed?

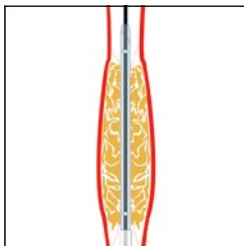
1. An intravenous (IV) needle and a catheter will be placed in the vein of your forearm. IV fluids or medications can be administered quickly and easily through this catheter if necessary
2. A mild sedative may be prescribed before the operation in order to help you relax during the procedure
3. You will be transferred to Cardiac Catheterization & Intervention Centre. Empty your bladder before leaving your room. A Foley's catheter may be inserted and kept until the day after the procedure
4. You will be hooked up for rhythm and oxygen content monitoring
5. Disinfectant will be used to cleanse the puncture site. You may be asked to put your hands alongside your body or above your head
6. The procedure is performed under local anaesthesia. A small puncture is made usually in the wrist (trans-radial approach) or groin (trans-femoral approach). A sheath is inserted into the opening and a catheter is advanced through the sheath into your coronary artery. You will be awake during the procedure

The Balloon Angioplasty Procedure

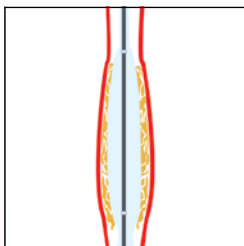
7. A guide wire crosses the narrowing and acts as a rail for the balloon catheter and other devices to pass over



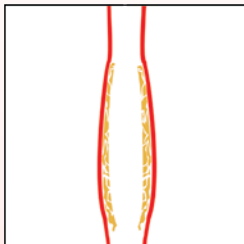
8. A balloon catheter is then advanced through the lesion under X-ray guidance



9. The balloon is inflated, compressing the plaque against the artery wall. You may experience chest discomfort when the balloon is inflated. The discomfort will subside when the balloon is deflated

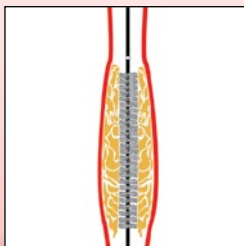


10. Once the plaque has been compressed and the artery has been opened sufficiently, the balloon catheter will be deflated and removed

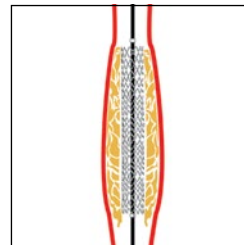


The Stenting Procedure

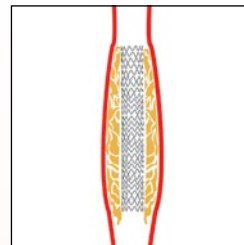
11. The stent (mounted on a balloon catheter) is advanced into the lesion



12. The delivery balloon is inflated and the stent will be expanded. In some cases, the placement of more than one stent may be necessary



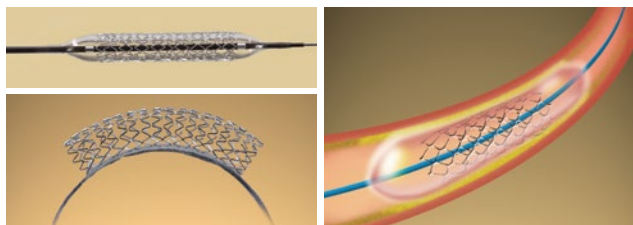
13. The balloon is deflated and withdrawn. The stent stays in place permanently, keeping the vessel open and improving the blood flow



What Happens after the Procedure?

1. After the procedure, you will be transferred to the ward or Intensive Care Unit for close monitoring
2. While you are in bed, a nurse will check your puncture site and vital signs frequently
3. If a trans-radial procedure is performed, you may be able to move around shortly after the procedure
4. If a trans-femoral procedure is performed, you should lie in bed with your face up and keep your leg straight to prevent bleeding or haematoma formation. Do not bend your leg or move it forcefully
5. Your doctor will usually remove the sheath on the operation day
6. You may resume eating after the procedure. Drinking lots of fluid can help to flush the dye out of your body as quickly as possible

- If lying still gives you back pain, the nurse can make you more comfortable by elevating the head of the bed slightly and giving you medication for pain
- If the chest pain persists or increases in intensity, inform the nurse or your doctor immediately



Sheath Removal (for Trans-Radial Procedure)

- The sheath will be removed manually by your doctor immediately after the procedure
- Firm and direct pressure will be applied by a TR-Band over the puncture site to stop bleeding. The force of pressure will be gradually reduced by your doctor or nurse
- The nurse will examine your puncture site regularly
- A pressure dressing will be applied over the puncture afterwards



Sheath Removal (for Trans-Femoral Procedure)

- The sheath will be removed by your doctor with the assistance of a device such as C-clamp a few hours after the procedure to stop bleeding. Alternatively, the physician will apply firm and direct pressure over the puncture site to stop bleeding
- For patients with both arterial and venous sheaths, it will usually take about 15 to 20 minutes to stop bleeding

- The force of pressure over the puncture site will be gradually reduced by your doctor or nurse
- Our nurse will check your foot pulse frequently and report to your doctor
- A pressure dressing will be applied over the puncture site once bleeding is stopped

How to Care for the Puncture Site after Sheath Removal

For Trans-Femoral Procedure

- Lie flat in bed and apply gentle pressure on the puncture site with your fingers, especially when you want to move around
- Do not try to bear down, strain or sit up until your doctor or nurse instructs you to do so. If you happen to cough or sneeze, gently press on the puncture site with your fingers to prevent bleeding
- If the puncture site is warm, wet, numb or painful, call a nurse at once
- You may get out of bed the next day with permission from the doctor

For Trans-Radial Procedure

- You may sit up and move around after the procedure
- Avoid physically demanding activities and heavy lifting
- If the puncture site is warm, wet, numb or painful, call a nurse at once

Going Home

- You will be discharged home in 1 to 2 days
- Your doctor will prescribe medications to prevent clogging of the stents (e.g. Clopidogrel and Aspirin). Take these medications as directed
- You may shower as usual
- Keep the puncture site clean and dry
- Do not lift heavy objects, do strenuous exercise or bear down for 2 weeks
- Seek immediate medical attention if there are signs of swelling, redness and heat over the wound
- Quit smoking