

Carotid Artery Stenting and Angioplasty

Introduction

Carotid artery stenting/angioplasty is a special X-ray procedure for opening-up the narrowed carotid artery, in order to prevent further stroke.

Carotid artery stenting/angioplasty is considered in patient with transient ischemic attacks and stroke, diagnosed to have at least 70% internal carotid artery stenosis.

Stent restenosis and occlusion rate is below 10% and may require subsequent treatment.

The Procedure

- The procedure will be performed under local anesthesia or general anesthesia and aseptic technique.
- The interventionist will puncture a blood vessel at your groin region (mostly right side) with a needle. After the needle is correctly positioned, a slender guidewire is placed through the needle into the blood vessel. The needle is then withdrawn, allowing a fine plastic tube (the catheter) to be placed over the guide wire into the blood vessel.
- The X-ray equipment will then be used to navigate the catheter into your neck region and special dye (contrast medium) will be injected through the catheter and X-rays taken.
- A cerebral protection device will be placed into your artery to decrease the risk of stroke.
- Stent of appropriate size will be placed within the artery over your neck region.
- Your artery will be dilated by a balloon attached to catheter tip.
- You may feel dizziness and your blood pressure may drop during the procedure.
- The cerebral protection device will be removed after the procedure.
- During the procedure, you should not move your head or talk.
- Certain drugs may be given to you during the procedure to control your blood pressure and prevent clots formation.
- The duration of carotid stenting/angioplasty is different for every patient, it depends on the complexity of the condition. Usually the procedure last for one to two hours.
- At the end of the procedure, the catheter may be removed or left in your groin region for later removal in the ward.
- Your vital signs (e.g. blood pressure, pulse) and neurological condition will be monitored during and after the procedure. Attention should be paid on the skin puncture site to make sure there is no bleeding from it.

Potential Complications

- There will be 5% chance that the procedure is unsuccessful.
- Overall death related to carotid artery stenting/angioplasty is about 2%.
- Overall incidence of major complications of carotid artery stenting/angioplasty is around 5%.
- Major complications includes:
 - Major stroke results in permanent neurological deficit (permanent limb weakness, numbness, visual loss)
 - Groin or retroperitoneal hematoma requiring transfusion or surgery
 - Arterial occlusion requiring surgical thrombectomy or thrombolysis
 - Arteriovenous fistula / pseudoaneurysm at puncture site

- Contrast media associated nephrotoxicity
 - The overall adverse reactions related to iodine-base non-ionic contrast medium is below 0.7%. The mortality due to reaction to non-ionic contrast medium is below 1 in 250,000.
 - Breakage and knot forming of catheter or guidewire is very rare, this may require surgical removal.
 - Cardiac arrest at time of balloon dilatation.
- Minor complications includes:
 - Groin bruise and pain
 - Complications related to contrast medium injected – rash, urticaria.
 - Transient neurological deficit which is reversible within 24 hours (limb weakness, numbness)
 - Transient visual loss
 - Symptomatic bradycardia, temporary asystole

Before the Procedure

- Your referring doctor will ask you to sign a consent form for this investigation. You should volunteer information to your doctor on history of allergy to food and drugs, history of asthma, urticaria, eczema and allergy to contrast medium.
- Check any bleeding tendency and correct if possible.
- Fast for 6 hours before the examination.
- Empty the bladder before the procedure.
- Skin preparation of the puncture site.
- During the examination, you are advised to listen carefully to the instructions given by our staff.
- For diabetic patient on drug - consult clinician concerned for the adjustment of insulin dosage if necessary.

After the Procedure

- After the catheter was removed, the puncture site has to be compressed for at least more than 10mins.
- Continue to watch for evidence of secondary bleeding and swelling at the puncture site.
- Continue to check blood pressure and pulse, or neuro-observation.
- You may need to have bed rest.
- You may need to continue to fast or take diet as tolerated depending on your condition.
- For diabetic patient on drug - consult clinician concerned for the adjustment of insulin dosage if necessary.

Remarks

This leaflet is intended as general information only. Nothing in this leaflet should be construed as the giving of advice or the making of a recommendation and it should not be relied on as the basis for any decision or action. It is not definitive and the Hong Kong Society of Interventional and Therapeutic Neuroradiology Limited does not accept any legal liability arising from its use. We aim to make the information as up-to-date and accurate as possible, but please be warned that it is always subject to change as medical science is ever-changing with new research and technology emerging. Please therefore always check specific advice on the procedure or any concern you may have with your doctor.