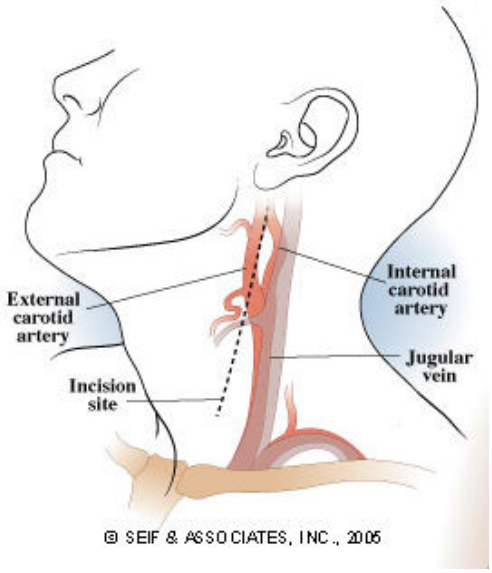
Carotid Angiography with Stenting

The carotid arteries are the large arteries on both sides in the front of the neck. These arteries are the main blood supply to the brain. Carotid ultrasound studies are done to look for problems in the carotid artery. Like the blood vessels of the heart (*coronary arteries*), the carotid arteries also develop atherosclerosis. This is the build-up of fat and cholesterol deposits, called plaque, on the inside of the arteries. Over time, the build-up may narrow the artery. The narrowing will lessen blood flow to the brain. If the brain does not get enough blood, this may lead to a stroke.



Carotid angiography is also called carotid angiogram or a carotid arteriogram. This test is done when carotid artery disease is suspected. This is based on the results from other testing such as an ultrasound. An arteriogram is often done prior to treatment.

PROCEDURE

This is an invasive imaging procedure done in a catheterization laboratory.

- A *catheter* (small slender tube) is put into an artery so dye can be injected. The dye allows the inside of the vessels to be seen on x-ray.
- A local anesthetic (numbing medicine) is used to numb the area where the catheter will be inserted.
- A small puncture is made in the arm or leg and a catheter is inserted. The catheter goes into the artery and is guided to the carotid arteries with the help of a special x-ray machine (*fluoroscope*).
- Contrast dye is injected through the catheter. The dye is something that shows up on x-ray. This allows the *radiologist* (specialist in reading x-rays) to see the inside of your carotid artery.
- These x-rays of your carotid arteries allow your caregiver to know if your carotid artery has narrowing or blockage.
- Following the procedure, a dressing will be applied and pressure will be put on the area of where the catheter was inserted. Sometimes this is done with a sandbag. Often the pressure should last less than 24 hours.
- If there are no problems, you will be allowed to go home.

If you are diagnosed as having carotid *stenosis* (narrowing), the carotid artery has narrowed because of the buildup of plaques (usually cholesterol, fats and cells). These changes happen as we grow older. This blockage decreases the blood flow to the brain. It may cause transient ischemic attacks (TIA's). TIA's are temporary brain changes that last less than 24 hours. If the *symptoms* (problems) last longer, this is considered a stroke or permanent problems in your nervous system.

SYMPTOMS

- Feeling faint
- Numbness in arms or legs
- Difficulty with movements
- Weakness in an arm or leg
- Visual problems

If the artery is left untreated, you are at risk of having a stroke. If severe enough, the condition may require surgical removal of the buildup. This procedure is called a carotid endarterectomy. Another procedure used for treating a blocked carotid artery is stenting. Your caregiver will discuss what will be the best treatment in your case.

Carotid stenting is an *investigational* (new or experimental) procedure. A specially designed guide wire with a filter is placed beyond the area of narrowing in the carotid artery. Once in place, a small balloon is inflated for a few seconds to dilate the artery. The *stent* (a small titanium mesh tube that acts as a splint inside your artery to

provide support) is then placed in the artery. This opens to fit the size of the artery. The filter, also known as a "distal protection device," is used to capture any particles that are released. It prevents them from going to the brain and causing a stroke. A second balloon inflation is done to make sure the stent is completely expanded in your carotid artery. The stent stays in place permanently. After several weeks, your artery will heal around the stent.

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