

Carotid Artery Disease Diagnosis & Treatment

Backgrounder

Carotid Artery Disease

Carotid artery disease is a form of atherosclerosis, or a build-up of plaque in one or both of the main arteries of the neck. The carotid arteries are vital as they feed oxygen-rich blood to the brain. When plaque builds up in the carotid arteries, they begin to narrow and slow down blood flow, potentially causing a stroke if blood flow stops or plaque fragments travel to the brain.

Stroke

Every year, 15 million people worldwide suffer a stroke, also known as a brain attack. Nearly 6 million die and another 5 million are left permanently disabled. Carotid artery disease is estimated to be the source of stroke in up to a third of cases, with 427,000 new diagnoses of the disease made every year in the United States alone.

Diagnosis

Carotid artery disease is typically silent and does not present with symptoms. Physicians can screen patients based on risk factors like high blood pressure, diabetes, obesity and smoking. Sometimes, patients are screened for carotid artery disease if the doctor knows the patient has vascular disease elsewhere in the body. Blockages can also be found when a physician hears a sound through a stethoscope placed on the neck. The sound is caused by blood flowing past the blockage.

If someone is having stroke-like symptoms (weakness/numbness on one side, loss of eyesight/speech, garbled speech, dizziness or fainting), they should seek immediate medical attention and be evaluated for carotid artery disease.

The following tests may be performed if carotid artery disease is suspected:

- **Carotid artery ultrasound:** This test uses sound waves that produce an image of the carotid arteries on a TV screen, and can be helpful in identifying narrowing in the carotid arteries. This test is painless and does not require the use of needles, dye or X-rays.
- **Angiography:** An angiogram uses X-rays to take a picture of the carotid artery. In order for the X-ray to “see” the arteries, a dye is injected through a small tube (catheter) inserted into an artery in the groin or arm. This procedure will determine exactly where the narrowing is located and will help to guide further treatments.

If carotid disease is diagnosed during one of these tests, a doctor will discuss treatment options.

Traditional Treatment Options

Treatment options for carotid artery disease depend upon the severity of the overall patient condition and symptoms. Moderate disease may not require an interventional procedure, as some individuals can manage the disease with medications and lifestyle changes. More severe blockages may require surgery.

Today, there are three primary surgical approaches:

- **Carotid Endarterectomy (CEA):** This open surgical procedure removes plaque from inside the carotid artery in order to restore normal blood flow to the brain. The surgeon makes an incision on the neck to access the affected artery, opens the artery and removes the plaque. The surgeon will then close the artery and the incision in the neck using stitches.
- **Transfemoral Carotid Artery Stenting:** In this minimally invasive alternative procedure, the physician works through a tube inserted into the artery in the upper thigh. First, a small umbrella-like filter is placed beyond the diseased area of the carotid artery to help limit fragments of plaque from traveling toward the brain during the procedure. The physician then inserts a slender, metal-mesh tube, called a stent, which expands inside the carotid artery to increase blood flow to the brain and stabilize the plaque.

These treatment options have been shown to effectively treat the blockage; however, both options have limitations and carry a risk of stroke during the procedures themselves.

A New Treatment Approach: TransCarotid Artery Revascularization (TCAR)

TransCarotid Artery Revascularization (TCAR) is a hybrid procedure that was developed to treat patients with carotid artery disease who are at risk for open surgery.

- The entire TCAR procedure is performed through a smaller incision in the neck and in less than half the time of a carotid endarterectomy – limiting the stress on the heart and significantly cutting the risk of the patient having a stroke or heart attack during the procedure.
- During the TCAR procedure, a tube inserted into the carotid artery is connected to a system that temporarily directs blood flow away from the brain to protect against dangerous debris from reaching the brain and causing a stroke during the procedure. Surgeons filter the blood before returning it to a vein in the groin, and a stent is implanted to the carotid artery to stabilize plaque and help prevent future strokes.
- Patients who undergo the TCAR procedure recover quickly and almost always go home the next day to return to full and productive lives with less pain and smaller scars than traditional treatments, and a reduced risk of future strokes.
- Over 10,000 procedures have been performed worldwide through clinical trial and commercial use. TCAR has been studied extensively, and the clinical data have been excellent.

For more information about the TCAR procedure and essential prescribing information, please visit <http://silkroadmed.com/ifus/>. For more information about carotid artery disease and the risks involved with any intervention (e.g. bleeding, death, myocardial infarction, restenosis, stroke, TIA, vessel dissection, vessel occlusion, etc.), please visit <http://silkroadmed.com/disease-and-treatment-options/>.

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