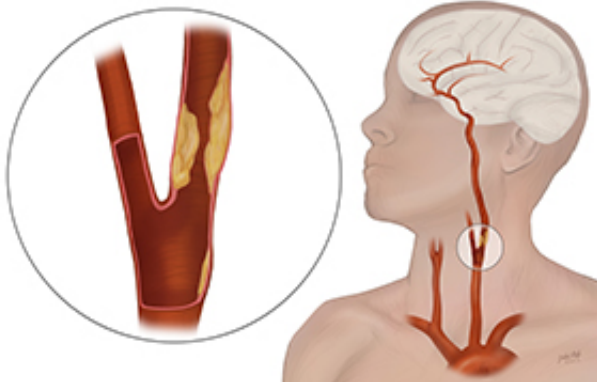


Procedure to open blocked carotid arteries tested

27 September 2013, by Lee Phillion



The carotid arteries, shown above, feed blood to the brain. Doctors at Washington University are testing an investigational device designed to open blocked carotid arteries in patients whose age or poor health makes them ineligible for the traditional open surgery. Credit: SILK ROAD MEDICAL, INC.

(Medical Xpress)—Doctors at Washington University School of Medicine in St. Louis are investigating a minimally invasive procedure to open blocked carotid arteries in patients whose poor health or advanced age makes the traditional open surgery too risky.

The clinical study, taking place at Barnes-Jewish Hospital, is part of a global, multicenter trial evaluating the safety and effectiveness of a new technique and device designed for high-[risk patients](#) with [carotid artery](#) disease, a condition that restricts blood flow to the brain and increases the risk of stroke.

The two carotid arteries of the neck that [supply blood](#) to the brain can become clogged with plaque in the same way that arteries in the heart can become blocked. More than 300,000 people in the United States are diagnosed with carotid artery

[blockages](#) every year. Left untreated, blockages can stop blood flow, and plaque debris can dislodge to the brain, causing a potentially disabling stroke.

The current surgical or "open" procedure used to clean out a clogged carotid artery is generally considered safe and effective but requires a large incision along the patient's neck. The procedure is usually done under [general anesthesia](#) and carries surgical risks that may make it unsuitable to high-risk patients.

While a less invasive alternative has been available for years, it carries a risk of stroke. Called carotid artery stenting, the procedure involves inserting a mesh stent through an artery in the groin and threading it into the carotid artery to hold the vessel open. Since the stent can knock plaque loose, a tiny umbrella-like filter is first inserted through the blocked artery to catch this debris and stop it from entering the brain. But the filter itself still carries a risk of stroke because it, too, can dislodge plaque.

"The new technique and device system may reduce the chances of these complications," said [vascular surgeon](#) Jeffrey Jim, MD, who performs the procedure. The procedure is called transcatheter stenting with dynamic flow reversal.

"The term 'transcatheter' refers to the technique of delivering a stent directly into the carotid artery from a small incision in the neck," said Jim, an assistant professor of surgery. "It is a shorter and potentially safer route than the traditional minimally invasive method of stenting via the groin. And it can be done using local anesthetic."

The "dynamic flow reversal" part of the procedure refers to a device that temporarily reverses blood flow in the blocked artery, diverting it away from the brain and into tubing set up outside the body. Filters in this tubing remove any plaque debris knocked loose during placement of the stent. The tubing then directs the blood back into the body

through a vein near the groin. Since blood enters the brain through multiple arteries, patients are not adversely affected by this temporary flow reversal in a single vessel.

"Temporarily reversing the flow ensures that the patient's brain is protected at all times," said Jim. "This procedure holds the potential to optimize treatment for our older, high-risk patients. Because it is less invasive, there likely is a lower risk of cardiac complications and patients can recover faster."

Washington University School of Medicine is one of 25 centers around the world participating in the clinical study, which is expected to enroll 140 patients.

The study is funded by Silk Road Medical, developers of the transcatheter stenting with dynamic flow reversal system.

Provided by Washington University School of Medicine in St. Louis

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