



TransCarotid Artery Revascularization: A New Treatment Option for Symptomatic and Asymptomatic Carotid Artery Disease

GUEST AUTHOR

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Carotid artery disease is estimated to be the source of stroke in up to one-third of cases, and there are 400,000 new diagnoses made every year in the United States. Some patients can manage carotid artery disease with medications and lifestyle changes, however, more severe cases may require surgery to repair the blockage in the carotid artery.

Carotid endarterectomy (CEA), an open surgery, remains a gold standard. Recently, the transfemoral approach of carotid artery stent placement (CAS) has been offered as a replacement treatment option for the high-risk surgical patient. Multiple large trials (such as CREST and SAPHIRE) have been performed to compare the outcomes and have shown to effectively treat the blockage. However, both options have limitations and carry a risk of stroke during the procedures themselves.

New TCAR Procedure

With the newly opened Hybrid Operating Room at Covenant HealthCare, it is among the first hospitals in the country to offer a new procedure called TransCarotid Artery Revascularization (TCAR) to treat patients with carotid artery disease. Similar to CEA, the TCAR procedure involves direct access to the carotid artery, but through a much smaller incision just above the clavicle instead of a longer incision along the neck. TCAR provides a best-in-class neuroprotection in a more efficient and less invasive approach than traditional CEA or transfemoral approach CAS.

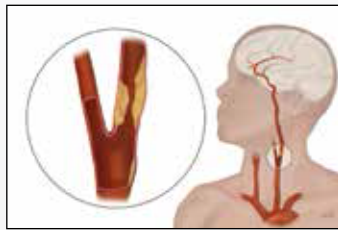
TCAR is unique in that blood flow is temporarily reversed during the procedure so that any small bits of plaque that may break off are diverted away from the brain, preventing a stroke from happening. A stent is then placed inside the artery to stabilize the plaque, minimizing the risk of a future stroke.

The entire procedure is performed in less than one-half the time of CEA, limiting the stress on the heart and reducing the risk of the patient having a stroke or heart attack.

TCAR Advantages

TCAR has been studied extensively and is an FDA-approved procedure. Based on published clinical trials, the procedure offers several advantages:

- **Better outcomes:** TCAR results in a low peri-procedural stroke rate of 1.4% in high-surgical-risk patients. This compares favorably to a 2.3% stroke rate of CEA and a 4.1% stroke rate of transfemoral approach CAS in standard-risk patients. TCAR's low stroke rate is the lowest reported to date for any prospective, multi-center trial of carotid stenting.
- **Less invasive:** The TCAR approach has very low rates of cranial nerve injury and myocardial infarction due to a minimal incision near the clavicle and the transcarotid approach.
- **Patient friendly:** Local anesthesia is favored and hospital stays are typically overnight for observation. TCAR patients recover quickly and almost always go home the next day to return to full and productive lives with less pain and smaller scars.



Anatomy of the carotid artery and internal carotid artery stenosis

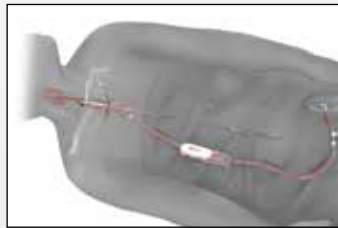
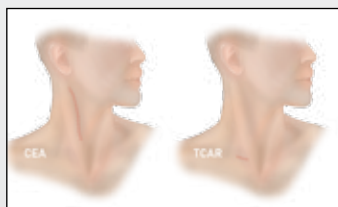
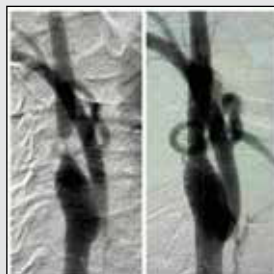


Diagram of the TCAR stent and retrograde filter



Postoperative scars CEA (left) and TCAR



Before and after TCAR

TCAR Eligibility

TCAR procedures for symptomatic and asymptomatic patients at high risk for surgery are eligible for Medicare reimbursement through the Society of Vascular Surgery-sponsored TCAR Surveillance Project. This program is part of the Vascular Quality Initiative, an open registry that tracks long-term clinical outcomes to promote best practices and evidence-based medicine.

Based on experience in performing the TCAR procedure and results thus far, TCAR has the potential to become the standard of care. Along with the modernization of vascular surgery, TCAR represents the new generation of carotid repair.

For more information, contact Dr. Kim at 989.790.2600 or rkim@mmvs.org.

Images supplied courtesy of Silk Road Medical.