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NEWS

RSNA Press Release

Carotid Stenting the New Anti-Depressant?

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At A Glance

- Stenting may significantly reduce depressive symptoms in patients with narrowing of the carotid artery.
- Vascular depression may be caused by limited blood flow to the brain.
- Cerebrovascular disease is the third leading cause of death in the United States.

OAK BROOK, Ill.—Inserting a stent to open a narrowed carotid artery has been found to reduce symptoms of depression that may be associated with carotid stenosis, according to a study in the August issue of *Radiology*.

"The patients in this study who received carotid stenting showed significantly fewer depressive symptoms than those who did not," said the study's lead author Wolfgang Mlekusch, M.D., specialist of clinical angiology and internal medicine at Vienna General Hospital and Medical School in Vienna, Austria.

Carotid stenosis is caused by the formation of plaque within the carotid artery, which supplies blood to the brain. The build-up of plaque narrows the opening in the artery and can lead to stroke. Until recently, surgery was the standard treatment for this disease, but carotid stenting has emerged as an accepted minimally invasive alternative to restore blood flow to the brain. To perform the procedure, an interventional radiologist uses an image-guidance system such as computed tomography and a guide wire to reach the site of the narrowing in the artery, expands the artery with a balloon and inserts a stent to hold the artery open.

According to the National Center for Health Statistics, cerebrovascular disease is the third leading cause of death in the United States. Recent studies have shown that some depressive disorders may be caused by cerebrovascular diseases such as carotid stenosis, which restrict blood flow to the brain. These disorders are collectively known as "vascular depression."

Dr. Mlekusch and colleagues studied 143 patients with carotid stenosis and 102 age- and gender-matched controls with peripheral artery disease (PAD) scheduled to undergo lower-limb angioplasty, a surgical procedure. All patients were tested for depressive symptoms based on the Beck Depression Inventory (BDI). BDI scores of 10 or above indicate substantial depressive symptoms.

Patients with a high level of carotid stenosis (greater than 80 percent) more frequently

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exhibited substantial depressive symptoms compared to controls. Forty-eight (33.6 percent) of the patients with carotid stenosis presented with depressive symptoms, compared with 17 (16.7 percent) of the control patients.

Four weeks after carotid stenting, the BDI questionnaire was administered again. This time only 9.8 percent of the patients with carotid stenosis exhibited depressive symptoms compared with 13 percent of the patients who had undergone angioplasty.

"Our findings suggest that opening the carotid artery and restoring blood flow to the brain via a minimally invasive technique under local anesthesia is associated with significant reduction in depressive symptoms," Dr. Mlekusch said. "We were able to demonstrate a clear neuropsychological benefit to patients after carotid stenting."

Dr. Mlekusch believes that stenting has now gained a major advantage over surgical treatment and should be the therapy of choice for stenosis. However, he cautions that while carotid stenting may be able to reduce symptoms associated with vascular depression, it is not a cure or treatment for major depression.

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Journal attribution required.

Note: Centers for Medicare and Medicaid Services (CMS) has approved reimbursement for carotid stenting only in those patients with focal neurological symptoms corresponding to the side of stenosis.

Radiology is a monthly scientific journal devoted to clinical radiology and allied sciences. The journal is edited by Anthony V. Proto, M.D., School of Medicine, Virginia Commonwealth University, Richmond, Va. *Radiology* is owned and published by the Radiological Society of North America, Inc. (radiology.rsna.org)

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"Is There Improvement of 'Vascular Depression' after Carotid Artery Stenting?" Collaborating with Dr. Mlekusch on this paper were, Irene Mlekusch, Ph.D., Erich Minar, M.D., Markus Haumer, M.D., Christoph W. Kopp, M.D., Ramazanali Ahmadi, M.D., Johannes Lehrner, Ph.D., and Martin Schillinger, M.D.

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