

Smokers treated for brain aneurysm with coils at higher risk of recurrence

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Cigarette smokers who were treated for cerebral aneurysms with coil embolization (blocking of a blood vessel) are at greater risk of developing another aneurysm, say neurological surgeons at Jefferson Hospital for Neuroscience in Philadelphia in the first-known study of its kind.

In a paper published in the April issue of the *Journal of Neurosurgery*, researchers found there was an increased risk of recanalization (re-opening), especially in low-grade aneurysmal subarachnoid hemorrhage (aneurysm) patients with a history of cigarette smoking, says Erol Veznedaroglu, M.D., associate professor of Neurological Surgery and director of the Division of Neurovascular Surgery and Endovascular Neurosurgery at Jefferson Medical College of Thomas Jefferson University and Thomas Jefferson University Hospital.

“To our knowledge no study documenting a correlation between aneurysm recanalization and a history of cigarette smoking history has previously been reported in the literature,” the authors say.

Annually, aneurysmal subarachnoid hemorrhages are found in approximately one case per 10,000.

The study’s authors conducted a retrospective chart review of all cases involving patients admitted to their institution in 2003 for treatment of a cerebral aneurysm by coil embolization or coiling.

In coiling, a catheter is inserted into an artery in the groin, then advanced into the affected artery in the brain. The surgeon then places one or more tiny coils through the catheter into the aneurysm. The body responds by forming a blood clot around the coil, blocking off the aneurysm.

The authors searched for any correlation among the location and size of the treated aneurysm, the incidence of coil compaction, and the history of smoking as factors for recurrence. But there was no significant indication that aneurysm location and size, type of coil and packing density were causing the higher risk.

“Of the various factors that lead to a predisposition for these cerebral aneurysms, cigarette smoking is the only factor that has consistently been identified in all the populations studied, and is also the most easily preventable,” says Dr. Veznedaroglu.

The quantity of cigarettes smoked was also found to have an impact on the increased risk of developing an aneurysm, he adds.

“Cigarette smoking has been directly correlated with an increased risk of intracranial aneurysm formation and growth,” the authors say. “And despite this evidence, more than one third of prior smokers continue to use nicotine after suffering an aneurysm,

especially patients who started smoking at a young age and those with a history of depression or alcohol abuse.”

However in the group of patient cases reviewed, the authors did not find a significant trend between smoking cessation after aneurysm treatment and the incidence of aneurysm recurrence, but the sample size was not large enough to demonstrate statistical significance.

“Nevertheless, patients with known cerebral aneurysms should be aggressively counseled about the risk of cigarette smoking,” Dr. Veznedaroglu says.

Source: Thomas Jefferson University

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