Unruptured intracranial aneurysms (UIAs) constitute a significant public health problem in the United States, with 2% of the population being affected, and it is a growing concern given the increasing frequency of detection on noninvasive brain imaging. Available natural history data suggest that key risk factors for hemorrhage among patients with UIAs include aneurysm size, location, and potentially presence of a daughter sac, and Japanese or Finnish race/ethnicity. In addition, there are some data that suggest a family history of subarachnoid hemorrhage may predict a heightened risk of hemorrhage in a patient with a small UIA. Other morphological characteristics are being studied as potential predictors of rupture. In patients managed conservatively, repeat imaging is typically recommended, and it is apparent that there is a risk of aneurysm growth, even among patients with small aneurysms, <7 mm in diameter. There are limited data available on the long-term rupture risk in a patient with an enlarging aneurysm because early treatment is typically recommended. The data that do exist indicate that the rupture risk may be high. Interventional treatment with surgical clipping or endovascular management is available for all patients with a small UIA.

Once an UIA is identified, the natural history for that UIA must be carefully considered, including aneurysm size; location; symptom status; other aneurysm morphology characteristics; presence of a daughter sac and occurrence of aneurysm growth; and patient issues including family history of subarachnoid hemorrhage, overall medical status, age, and the patient’s overall perspective on management after hearing an unbiased summary of the natural history and interventional risks.

In the absence of direct clinical trial data comparing conservative management with surgical or endovascular intervention for small UIAs <7 mm in diameter, the following is an appropriate general management strategy: endovascular coiling or surgical clipping should be considered in selected patients, mainly in younger patients, particularly with higher risk features, including symptomatic aneurysms, or those with features, such as posterior communicating or vertebrobasilar location, presence of a daughter sac, suggestion of aneurysm enlargement on repeat imaging, and those with a strong family history of intracranial aneurysm rupture. All patients should be assisted in smoking cessation if they are a smoker, and use antihypertensive medications if necessary to control blood pressure.

Disclosures

None.

Keywords: aneurysm ▪ hemorrhage ▪ unruptured intracranial aneurysm
Controversy: Clipping of Asymptomatic Intracranial Aneurysm That is <7 mm: Yes or No?
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