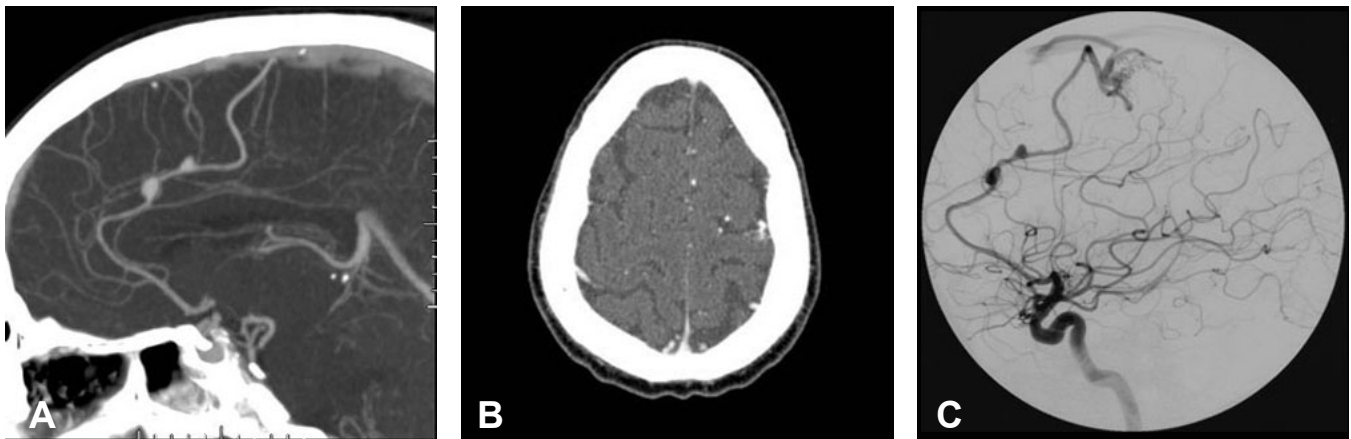




Diagnostic Service: CT Angiography/ Perfusion

In the last decade the Neuroradiology department at Massachusetts General Hospital has developed techniques of CTA for the diagnosis and treatment planning of neurovascular diseases. This includes aneurysm detection, acute stroke and venous occlusive disease. CT angiography is performed with a series of thin slice axial images during a bolus of IV contrast. Data is manipulated by our members of our 3D Lab to show the blood vessels in the head or cervical region. Detection of aneurysms 3 mm or greater is excellent. It is possible to distinguish berry or saccular aneurysms, which occur at bifurcations in the Circle of Willis from other types. These include fusiform (spindle shaped) aneurysms and dissecting aneurysms due to a tear in the artery wall. Distal vessel aneurysms may have infectious, traumatic or neoplastic etiologies. We also use CTA to define carotid or vertebral artery diseases such as stenosis or dissection. It is invaluable for evaluating patients in the Emergency Room who present with acute stroke. We obtain a CTA of the entire cerebrovascular system from the aortic arch to the top of the head to determine the cause of the stroke. We also perform a CT perfusion scan to look for blood flow abnormalities in regions of the brain. (See Stroke Therapy).



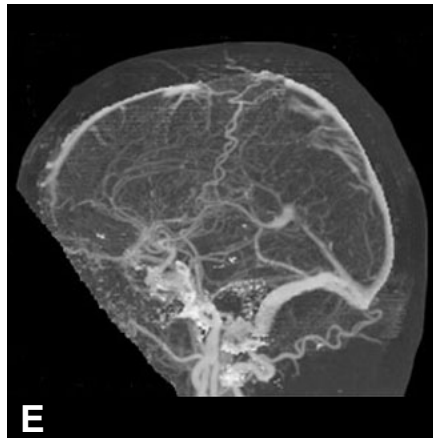
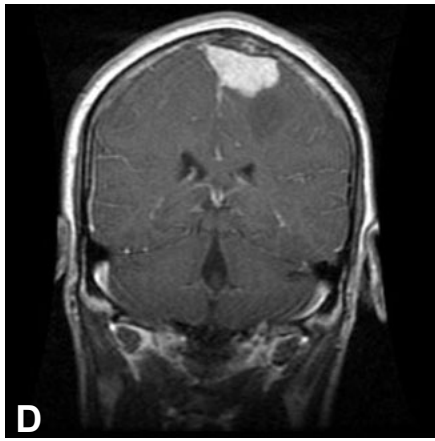
(A) CT angiogram thin volume reconstruction shows an enlarged left anterior cerebral artery with two aneurysms. (B) Axial raw data from the CTA confirms the presence of a small arteriovenous malformation in the left motor strip. (C) Lateral view of the left carotid angiogram shows the aneurysms and the early draining vein of the tiny AVM.

Interventional Neuroradiology Program, Neurovascular Service

Massachusetts General Hospital

Phone: 617-726-1767

Email: info@mgh-interventional-neurorad.org



(D) Coronal T1 weighted MRI following gadolinium shows a meningioma near the vertex.

(E) CT venogram with bone subtraction algorithm shows the lesion occluding the superior sagittal sinus.

The Neurovascular Service at Massachusetts General Hospital provides a multidisciplinary approach to patient care that combines neurosurgery, neurology and interventional neuroradiology. Based in the Department of Radiology, the Neurovascular Service's Interventional Neuroradiology Program uses minimally invasive procedures to treat a range of neurovascular disease and spinal disorders. For more information, visit www.mgh-interventional-neurorad.org

Interventional Neuroradiology Program, Neurovascular Service

Massachusetts General Hospital

Phone: 617-726-1767

Email: info@mgh-interventional-neurorad.org