Giant 75mm Intracranial Aneurysm Masquerading as Primary Malignancy

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OBJECTIVE  Diagnose giant intracranial aneurysm based on imaging characteristics

CASE DESCRIPTION  A 58-year-old woman presented with a 6-month history of progressive generalized weakness, lethargy, and confusion. She also reported intermittent headaches localized to the left frontal region and nausea.

On examination, she was oriented to self and place and exhibited mild word-finding difficulty. She was able to follow commands; however, she was unable to complete simple calculations nor name the current president. The sensory exam revealed mild loss over the right face and upper extremity; motor exam revealed subtle pronator drift of the right upper extremity. The remainder of her neurologic exam was unremarkable.

The complete blood count, prothrombin time, and activated partial-thromboplastin time were normal. Serum electrolytes revealed mild hyponatremia.

Computed tomography (CT) revealed a 75 x 41 x 65mm heterogenous density with peripheral partial calcification centered in the left frontal lobe with extension across the midline to the right middle cranial fossa and right temporal region. Associated vasogenic edema was demonstrated, as well as mass effect to the anterior horn of the left lateral ventricle and anterior aspect of the third ventricle, with additional lateral displacement of the right anterior horn.

DIFFERENTIAL DIAGNOSIS  The differential diagnosis of large intracranial masses may be narrowed by localization, tissue components, and imaging characteristics. For the findings above, the most commonly identified tumors include craniopharyngioma, pilocytic astrocytoma, dermoid cyst, or meningioma; with partial calcification or hemorrhage accounting for central enhancement and rim calcification.

Neurosurgical consultation was obtained.

DIAGNOSIS  Subsequent imaging performed for neurosurgical planning included CT angiogram (Figure 2) which identified the mass as a fusiform aneurysm arising from the left supraclinoid internal carotid artery with rim calcification and extensive internal thrombosis.

DISCUSSION  Classification of intracranial aneurysms by size and location is used to predict morbidity and mortality. Giant (>25mm) intracranial aneurysms account for approximately 5% of treated aneurysms, carrying a 6% annual risk of rupture and a 5-year mortality rate of up to 80%.

Treatment modality is dictated by anatomic properties such as morphology, size, location, and urgency of treatment. Notably, aneurysms of the size presented in this case, 75mm, are seldom reported in the literature—a PubMed review yielded only two comparable reports of a 90mm aneurysm found in an infant; and 70mm in an adult. Accordingly, such large aneurysms present unique management challenges given their unstudied nature.

MANAGEMENT  Following neurosurgical and neurointerventional consultation, a flow diversion device was deployed endovascularly without complication. The patient was discharged to home with aspirin and clopidogrel, dexamethasone, and levetiracetam. Follow-up CT with contrast performed two-weeks subsequently demonstrated extensive reduction of intra-aneurysmal flow, measuring 14 x 8 x 9mm (Figure 3).

REFERENCES