Case 866

Eurorad

Cerebellar Hemangioblastoma

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Section: Neuroradiology
Imaging Technique: CT
Imaging Technique: MR
Case Type: Clinical Cases
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Patient: 55 years, male

Clinical History:

presented with a 5 month history of headache and nausea without vomiting. Recently he had staggering gait and a tendency to fall. His personal history reveals a hospitalization because of suspected temporal epilepsy sixteen years ago. All examinations at that time, including cerebral angiography and pneumoencephalography, were normal. The present neurological examination was essentially normal, except for mild ataxia. CT scan and MRI of the brain were performed, followed by right vertebral angiography.

Imaging Findings:

A 55-year-old man presented with a 5 month history of headache and nausea without vomiting. Recently he had staggering gait and a tendency to fall. His personal history reveals a hospitalization because of suspected temporal epilepsy sixteen years ago. All examinations at that time, including cerebral angiography and pneumoencephalography, were normal. The present neurological examination was essentially normal, except for mild ataxia. CT scan and MRI of the brain were performed, followed by right vertebral angiography. Imaging findings of a sharply delineated cystic tumor with solid hypervascular component were strongly suggestive for hemangioblastoma. At surgery, the tumor was completely removed. Histopathological examination confirmed the diagnosis of cerebellar hemangioblastoma.

Discussion:

Hemangioblastomas are common cerebellar neoplasms, accounting for 7-12% of all posterior fossa tumors. They generally occur within the cerebellum, less commonly involve the medulla oblongata or spinal cord and are rarely found supratentorially. Hemangioblastomas usually occur sporadically, but family may be positive in 4-20 % of cases. In patients with a family history of von Hippel-Lindau (VHL) disease, there is a high incidence of multisystemic manifestation. The average age of onset of neurological symptoms in patients with hemangioblastoma is in the middle to late thirties, but patients with family history of VHL disease generally present earlier. This tumor appears twice more often in men than in women. The tumor is easily detectable on CT and MRI examination. On CT scan, the cystic component is generally sharply defined, with an attenuation value equal to, or slightly higher than cerebrospinal fluid. On unenhanced scan, the mural nodule is isodense to brain tissue. After intravenous contrast injection it enhances intensely and uniformly. Because of the high protein content of the cysts, they are slightly hyperintense to CSF on T1-weighted MR images. They generally present without surrounding edema. On angiography hemangioblastomas mostly are highly vascular neoplasms. Sometimes pilocytic astrocytoma and hemangioblastoma are indistinguishable. Simple arachnoid cyst, enlarged fourth ventricle secondary to obstruction of foramina of Magendie and Luschka, and cystic metastasis have to be included in the differential diagnosis.

Differential Diagnosis List: Hemangioblastoma

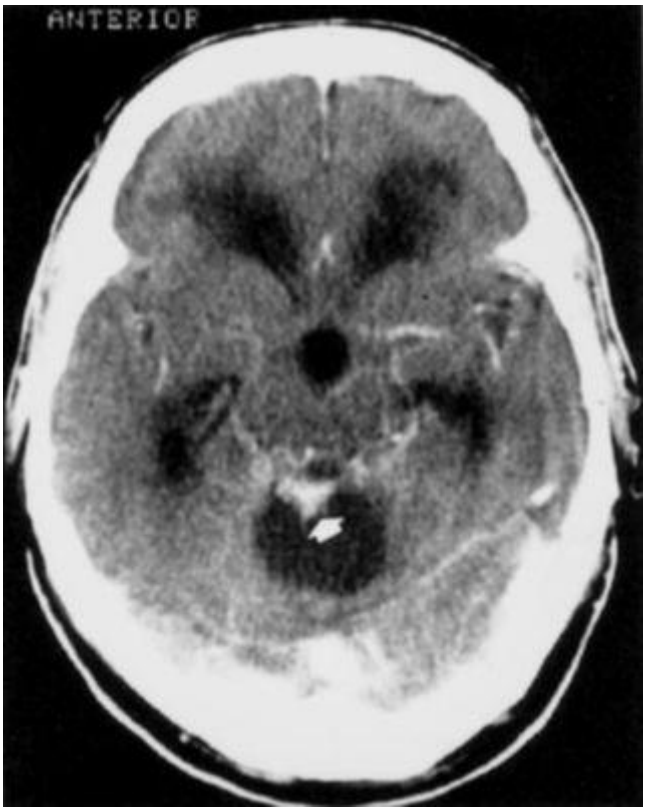
Final Diagnosis: Hemangioblastoma

References:

Catteeuw R, Vanslembrouk R, Seynaeve et al. Hemangioblastoma; von Hippel-Lindau disease. Radiological Documents, Dec.1994.
Kazner E, Wende S, Grumme T et al. Computed tomography and magnetic resonance tomography of intracranial tumors. Second ed. Heidelberg: Springer-Verlag, 1989.
Osborn AG. Diagnostic neuroradiology. St Louis: Mosby, 1994.
Ho VB, Smirniotopoulos JG, Murphy FM et al. Radiologic-pathologic correlation: hemangioblastoma. AJNR 1992; 13: 1343-1352. (PMID: 1414827)

Figure 1

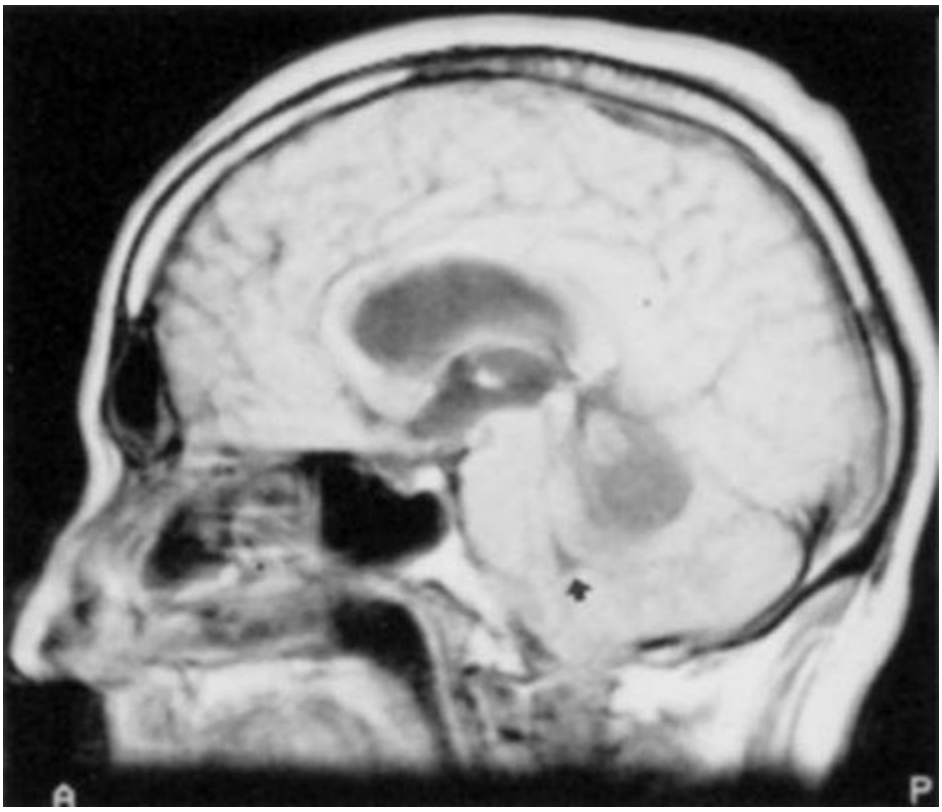
a



Description: Contrast enhanced CT scan of the brain shows a large, sharply defined mid-cerebellar cystic mass, with the same attenuation as cerebrospinal fluid, and moderate obstructive hydrocephalus. There is an intense enhancing nodule (white arrow) anteriorly in the cyst. **Origin:**

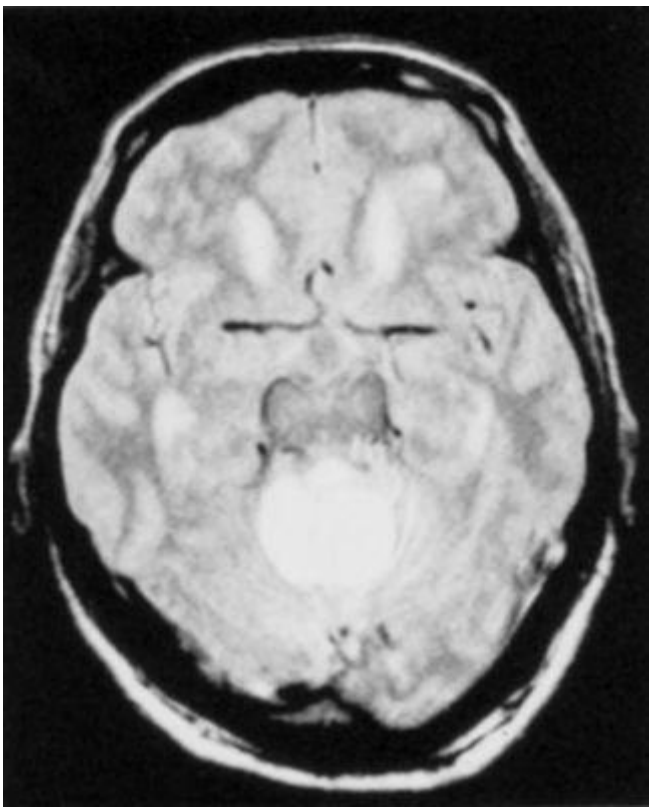
Figure 2

a



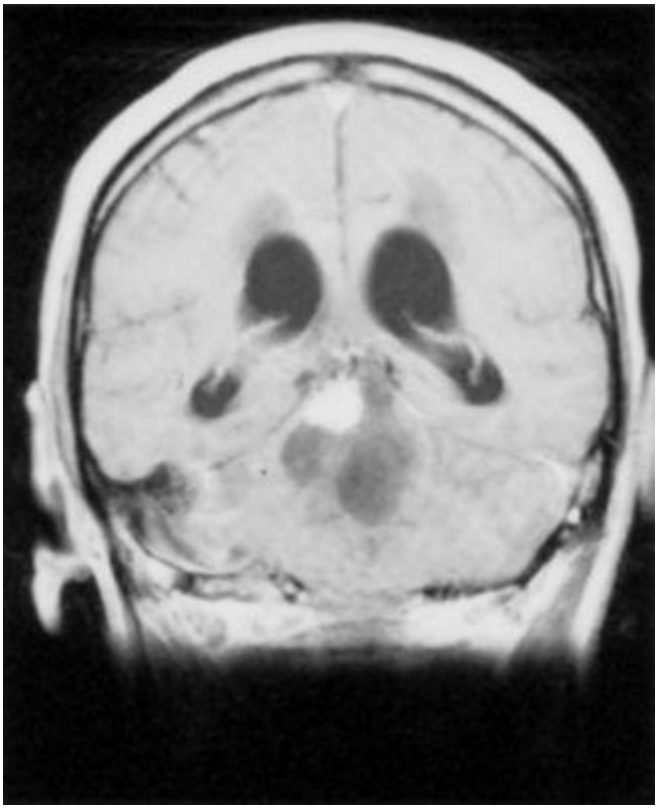
Description: Magnetic Resonance Imaging of the brain shows on the mid-sagittal SE T1-weighted image a hypointense cerebellar tumor located in the vermis with a solid mural nodule in the anterior aspect of the lesion. The fourth ventricle is compressed and displaced caudally (arrow). **Origin:**

b



Description: Axial TSE PD-weighted image demonstrates a well defined, rounded, hyperintense cystic mass in the midportion of cerebellum. **Origin:**

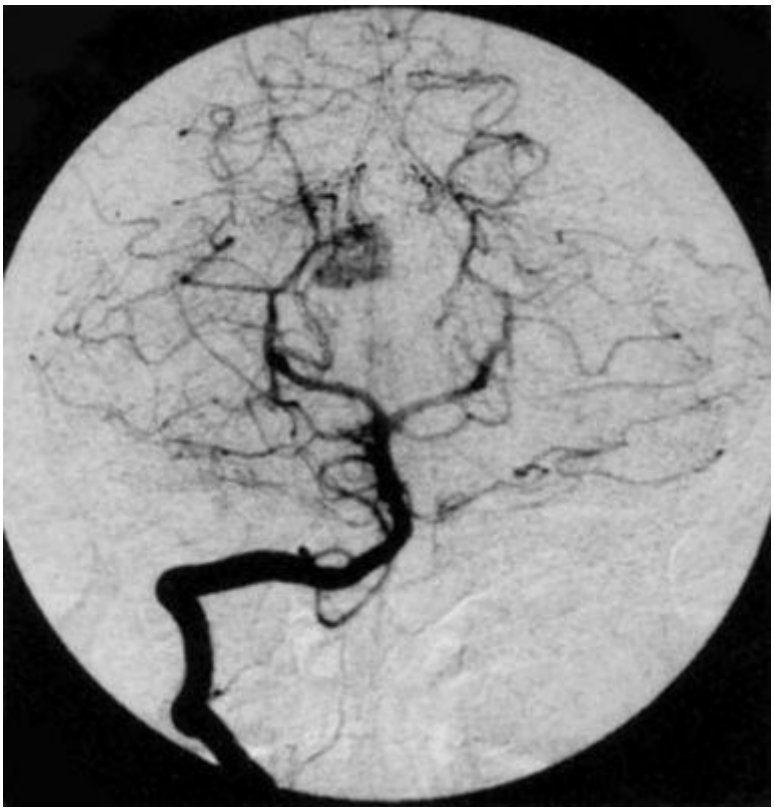
c



Description: Coronal SE T1-weighted image after intravenous administration of contrast medium visualizes a slightly lobulated hypointense cerebellar tumor with a marked, uniform enhancement of a mural nodule in the superior part. **Origin:**

Figure 3

a



Description: Angiography of the posterior fossa demonstrates irregular vascular blush in the solid part of the tumor. **Origin:**