

## Angiolipoma in the Cerebellopontine Angle: A Case Report<sup>1</sup>

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A 65-year-old female, who suffered with a longstanding headache, was admitted to our hospital. MR imaging and digital subtraction angiography (DSA) demonstrated a vascular fat-containing mass in the right cerebellopontine angle. The lesion was surgically removed and the diagnosis of angiolipoma was established. The symptoms subsided after the operation.

### Index words : Brain

Angioma

Magnetic resonance (MR), image display

Angiography

Angiolipoma is a rare and benign mesenchymal tumor that's composed of mature adipocytes and abnormal vascular tissue (1). Their main pathologic characteristics are macroscopic mass formation with or without capsule, microscopic evidence of mature lipocytes as the major cell population and angiomatous cell proliferation inside the mass (2). Angiolipomas are further divided into the non-infiltrating (capsulated) and infiltrating (non-capsulated) types. The former is more common and the latter shows a tendency to recur after surgery (2, 3). Angiolipomas are most commonly found in the subcutaneous tissue of the trunk and extremities, but other sites have been reported as well. The craniospinal axis is an uncommon, but significant site. Spinal angiolipomas account for 1.2% of all spinal axis tumor, 3% of the extradural spinal tumors and 24% of the spinal lipomas. Intracranial angiolipomas are extremely rare (4).

We describe here the clinical and imaging features of a

case of angiolipoma in the cerebellopontine angle.

### Case Report

A 65-year-old female was admitted to our hospital because of her prolonged headache that was intractable to medical treatment. No precipitating factor was identified. The general physical and neurological examinations were negative. There was no special personal history and no family history of any neurological disease such as seizure. On admission, a MR imaging demonstrated an extraaxial mass in the right cerebellopontine angle. The mass was shown as heterogeneous high signal intensity on both the T1-weighted image and T2-weighted image, and vascular signal voids were noted within the mass. A slightly enhanced mass was noted on the contrast enhanced image (Fig. 1). Cerebral angiography was subsequently performed to exclude any associated vascular malformation. DSA revealed a vascular entangled mass that was fed by the right anterior inferior cerebellar artery in the posterior fossa. Neither arteriovenous shunting nor any early draining veins were seen (Fig. 2). The lesion was surgically removed by the suboccipital retromastoid approach. The pathologic di-

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Received April 15, 2006 ; Accepted June 2, 2006

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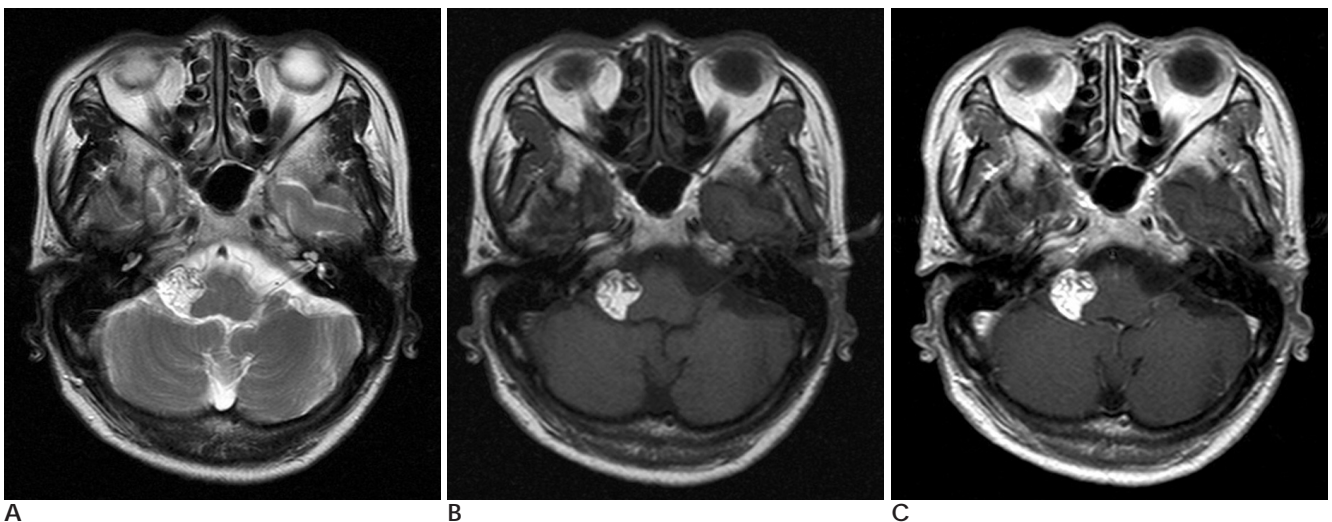
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agnosis was angiolipoma (Fig. 3). After the operation, the patient's headache completely subsided.

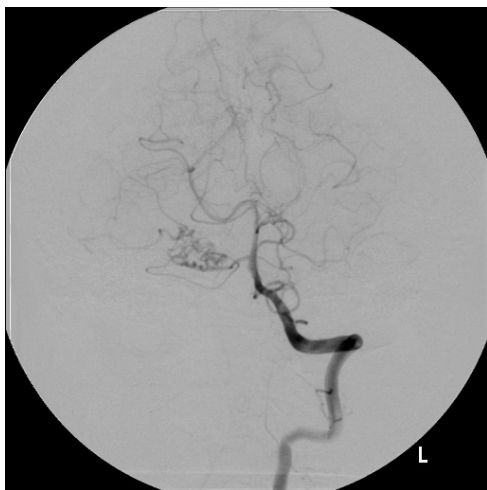
### Discussion

Central nervous system angiolipomas are uncommon lesions that may arise from the abnormal development of primitive pluripotential mesenchymal cells from which adipose tissue, smooth muscle and vascular endothelium develop. Angiolipomas can be currently diagnosed with a high degree of certainty based on the specific MR imaging. Due to their rich fat content, angiolipomas usually show hyperintensity on the pre-

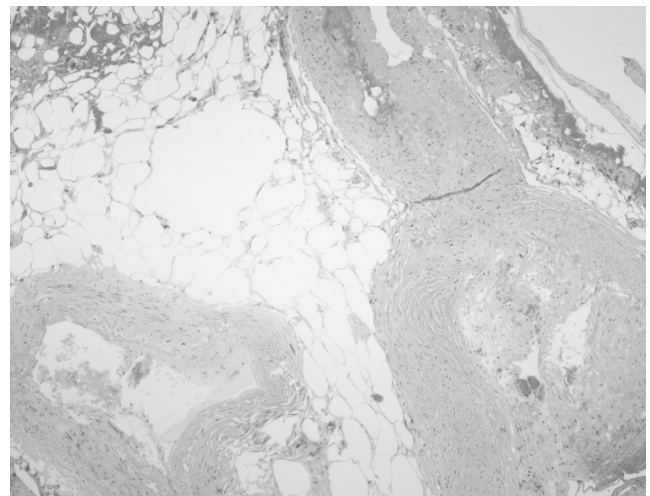
contrast T1-weighted image. Fat-suppression techniques are particularly helpful to confirm the lipomatous nature of this lesion and to demonstrate its enhancement (3, 5). The contrast enhancement and hypervascularity on angiograms differentiate angiolipomas from other lesions with fat content such as dermoids and lipomas. The latter lesions do not show contrast enhancement on MR imaging and they do not show vascularity on angiography. The angiographic patterns of angiolipomas are variable, from an avascular pattern to a hypervascular pattern, by the relative amount of the vascular component.



**Fig. 1.** A. The T2-weighted image shows an extraaxial mass in the right cerebellopontine angle. The mass contains multiple vascular signal voids.  
B. The T1-weighted image demonstrates the bright high signal intensity of the mass, which suggests the fatty component of the mass.  
C. The contrast enhanced image shows an enhanced mass in the right cerebellopontine angle.



**Fig. 2.** Left vertebral angiogram. The vascular entangled mass fed by the right AICA is demonstrated.



**Fig. 3.** Photomicrograph (original magnification,  $\times 40$ ; H-E stain) shows mature adipose tissue and the irregular vascular structures within the pathologic specimen.

On rare occasions intracranial angioliomas may bleed and this represents a sporadic cause of subarachnoid hemorrhage. Although more evidence is needed in order to understand the natural history of intracranial angioliomas, they are usually considered to be benign and a conservative approach should be taken for their treatment (6).

Treatment of angioliomas includes a surgical approach with the goal of total removal. Most authors agree in the need of a wide excision for surgically removing infiltrating angioliomas, and they have reported good outcomes after surgical excision of spinal angioliomas, and this is often in spite of the severe preoperative neurological deterioration. However, the outcome of intracranial angiolioma patients are quite variable; this is most probably related to the tumor location and the surgical complexity of removing these tumors (4).

In summary, intracranial angiolioma can be specifi-

cally diagnosed by MR imaging. Preoperative angiography may be useful for the case that has a rich vascular component.

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