Angioleiomyoma of the internal auditory meatus: A rare occurrence in the internal auditory canal

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Abstract
We describe a case of angioleiomyoma of the internal auditory meatus. A finding of this tumor at this site is very unusual. In fact, our review of the literature revealed that only 1 case has been previously reported. In our patient, the tumor was clinically and radiologically difficult to distinguish from an acoustic neuroma. It would be important to recognize this rare small tumor preoperatively because it may be appropriate to manage it conservatively.

Introduction
Approximately 10% of all intracranial tumors are located in the internal auditory meatus (IAM) and the cerebellopontine angle (CPA). Of these, 90% are acoustic neuromas and 5% are meningiomas. The remaining 5% represent various rare tumors. In a review of 426 tumors of the CPA and IAM, Kohan et al reported their order of occurrence as follows: epidermoid tumors, lipomas, arachnoid cysts, facial neuromas, choroid plexus papillomas, metastatic pulmonary adenocarcinomas, vascular tumors, lymphomas, neuroblastomas, cholesterol cysts, pontine gliomas, and angioleiomyomas.

Angioleiomyomas, also known as angiomas and vascular leiomyomas, account for 5% of all benign soft-tissue tumors; they usually occur in patients between the fourth and sixth decades of life. They are usually subcuticular, but they are occasionally found in deep-seated locations. Microscopically, they are made up of a well-demarcated mass of thick muscle-walled vessels, with fascicles of spindle-shaped cells showing characteristic immunostaining for smooth-muscle actin.

Clinical and radiologic differentiation of this neoplasm from acoustic neuroma is difficult. It is important to recognize the occurrence of this rare tumor at the outset because the management plan can vary.

Case report
A previously healthy 47-year-old woman presented with an 18-month history of progressive hearing loss in the left ear and occasional vertigo. A pure-tone audiogram showed a severe sensorineural hearing loss in the left ear. Findings on magnetic resonance imaging (MRI) were suggestive of a left IAM/CPA tumor consistent with an acoustic neuroma (figure 1).

Exploration via a translabyrinthine approach through a postauricular incision and standard mastoidectomy/labyrinthectomy exposed a 1-cm intracanalicular tumor in the IAM. The tumor was resected with preservation of the VIIIth and VIIth cranial nerves. The patient made an uneventful postoperative recovery and was discharged after 10 days. A repeat MRI 1 year later revealed no evidence of recurrence.

Histologic analysis revealed that the mass was made up of interlacing bundles of smooth-muscle cells and fibroblasts that formed dilated vascular spaces lined by endothelial cells (figure 2). These findings were consistent with an angioleiomyoma.

Discussion
Most angioleiomyomas are benign subcutaneous neoplasms that usually occur in the extremities of middle-aged patients. Very few cases have been described in other locations. These tumors appear as sharply demarcated nodules of well-differentiated smooth muscles and thick-walled vessels of various sizes. Depending on the amounts of vascular and smooth muscle components that are present, angioleiomyomas can be classified into three histological subtypes: capillary or solid, cavernous, and venous.

Hachisuga et al reviewed 562 cases of angioleiomyoma clinicopathologically. Of these, 500 (89.0%) arose in the extremities, 48 (8.5%) in the head, and 14 (2.5%) in the trunk. The female-to-male ratio was 1.7:1.

Lach et al reported the first angioleiomyoma in the neuroaxis. This tumor was located in the leptomeninges of the right parietal lobe, and it had been discovered incidentally during a radiologic investigation of unrelated neurologic symptoms.

In their study of 426 uncommon IAM/CPA lesions,
Kohan et al found that 384 (90.1%) were acoustic neuromas and 18 (4.2%) were meningiomas. In the remaining 24 patients, only 1 case of angioleiomyoma was identified. To the best of our knowledge, this is the only previously reported case of an angioleiomyoma of the IAM in the English-language literature.

References