False-positive findings on magnetic resonance imaging mimicking vestibular schwannoma

Case illustration

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We report on a patient in whom an internal auditory canal (IAC) lesion, diagnosed on the basis of cranial magnetic resonance (MR) imaging, was found to have spontaneously resolved on follow-up MR imaging performed 9 months later.

This 37-year-old woman presented with a seizure and hearing loss in the right ear. An MR image revealed a cavernous angioma in the left frontal lobe as well as another lesion (8 × 10 mm) in the right IAC (Fig. 1). Audiometric examination confirmed that the woman had a moderate sensorineural hearing loss. The patient underwent a left frontal craniotomy and the cavernous angioma was completely removed. She was observed clinically and radiologically for the right IAC lesion. After 9 months, complete spontaneous resolution of this lesion was observed during the follow-up MR examination (Fig. 2). No differences were noted during her follow-up audiometric examination.

Cerebellopontine angle (CPA) tumors account for 8 to 10% of intracranial neoplasms. Vestibular schwannomas constitute 70 to 90% of CPA lesions. The other 10 to 30% consist of meningiomas, lipomas, epidermoid cysts, arachnoid cysts, facial neuromas, cavernous hemangiomas, ganglionic hamartomas, cranial nerve neuritis, and false-positive findings of lesions.1–5

Treatment of lesions limited to the IAC has become a controversial issue, and false-positive findings on MR images have led to a new viewpoint concerning small lesions mimicking a mass. Despite improvements in radiological imaging methods, the differential diagnosis remains quite difficult. The similarity of presenting symptoms and audiometric findings in patients with these lesions makes the differential diagnosis even more complicated, and a definitive diagnosis is only possible by including histopathological evaluation. In our case we considered that this lesion was possibly not a vestibular schwannoma, but another lesion such as neuritis mimicking one. We therefore did not expose the patient to risk by opting for a surgical attempt immediately.