Juxtafacial Lipoma within the Mastoid Bone

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Lipoma or other fat-containing neoplasms of the head and neck are relatively common, occurring in about 13% to 25% of masses in this region.1 Most of these lesions present subcutaneously, with occasional deeper involvement in the neck. Lipomatous involvement of the temporal bone is very rare and typically involves the internal auditory canal if present.2 We present a unique case of an adipocytic lesion of the mastoid bone near the stylomastoid foramen causing facial nerve weakness.

Case Report

This report was exempted from review by the University of Kansas Institutional Review Board.

Presentation

A 42-year-old woman presented to a tertiary care otolaryngology clinic for evaluation of left-sided facial weakness for the past 6 months. Her weakness was of insidious onset. Her physical examination revealed House-Brackmann grade 2 facial paresis on the left, with no suspicious masses or lesions in the head and neck.

Imaging

A sinus computed tomography scan performed prior to the visit showed a smooth widening of the left fallopian canal with soft tissue density leading down to the stylomastoid foramen (Figure 1A) with clear paranasal sinuses. There was no bony erosion noted. Initial coronal magnetic resonance imaging (MRI) scanning revealed a left hyperintense lesion on T1 precontrast that showed no significant enhancement after gadolinium administration (Figure 1B and 1C). Axial cuts of the MRI again before and after contrast can be seen in Figure 2A and 2B. The decision was made to order MRI with a fat suppression technique included, and an axial section from this sequence can be seen in Figure 2C. Loss of signal intensity was noted with fat suppression. These findings led to a presumptive diagnosis of juxtafacial lipoma of the temporal bone. The patient was not significantly bothered by the cosmesis of her facial weakness; however, she was referred for septoplasty and left nasal valve repair resulting from nasal dilator dysfunction. Given the risks of intervention and the benign nature of her presumed tumor, the patient elected to monitor the lesion with serial imaging. It should be stated that since a biopsy of the lesion was not performed due to the risk of morbidity, the lesion could ultimately be a different fat-containing growth, such as liposarcoma or teratoma.

Discussion

Juxtafacial lipoma has been described sparingly in the literature, but in 1 temporal bone study, fat adjacent to the vertical segment of the facial nerve was found in roughly 17% of histologic sections.3 Typically, lipomas with the potential to cause facial nerve palsy are located in the cerebellopontine angle, although this is also a rare occurrence.4 Lipomas tend to be slow growing, with a very low potential for malignant transformation.

Magnetic resonance imaging is often used for the evaluation of soft tissue masses of the head and neck and is particularly useful in cases of facial weakness. Much like other neoplasms of the cerebellopontine angle, lipomas have characteristic morphology on MRI scans as well. Typical MRI findings of lipoma include hyperintensity on T1-weighted images, with a lack of change and/or enhancement after administration of gadolinium. Unique to lipomas and other adipomatous neoplasms is the near complete loss of intense signal with fat suppression techniques on T1 sequences.4

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These characteristics help differentiate this tumor from other growths on the facial nerve, such as schwannomas and hemangiomas.

**Conclusion**

In cases of facial palsy with suspicion of facial nerve neoplasm, we encourage a thorough review of magnetic resonance imaging with the inclusion of fat suppression techniques. The patient in this report underwent 3 separate MRI scans in 1 month until 1 was finally completed with fat suppression. We also illustrate the need to keep lipoma in the differential for facial canal masses.

**Author Contributions**

Sameer A. Alvi, study design, drafting of manuscript, final approval, agrees to be accountable; Matthew Shew, data acquisition, drafting of manuscript, final approval, agrees to be accountable; Helena Wichova, data acquisition, revising manuscript, final approval, agrees to be accountable; James Lin, study design, revising manuscript, final approval, agrees to be accountable.

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