

Hypoglossal Neurinoma of The Carotid Space Segment

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A 33-year-old female presented with deviation of her tongue towards the right side (**Figure 1, A**). Magnetic resonance imaging (MRI) of the head revealed a 1.0 x 0.8cm mass abutting the right internal carotid artery in close proximity to the hypoglossal canal. The mass proved relatively isointense to brain parenchyma on T1 weighted images (**Figure 1, B**), slightly hyperintense on T2 weighted images (**Figure 1, C**), with a higher signal intensity on T2-tirm imaging (**Figure 1, D**). A “T2 shine through” phenomenon was also noted on Diffusion Weighted Imaging (DWI) with Apparent Diffusion Coefficient (ADC) mapping (**Figure 1, E and F**), the findings being consistent with a hypoglossal neurinoma (schwannoma) of the carotid space segment.

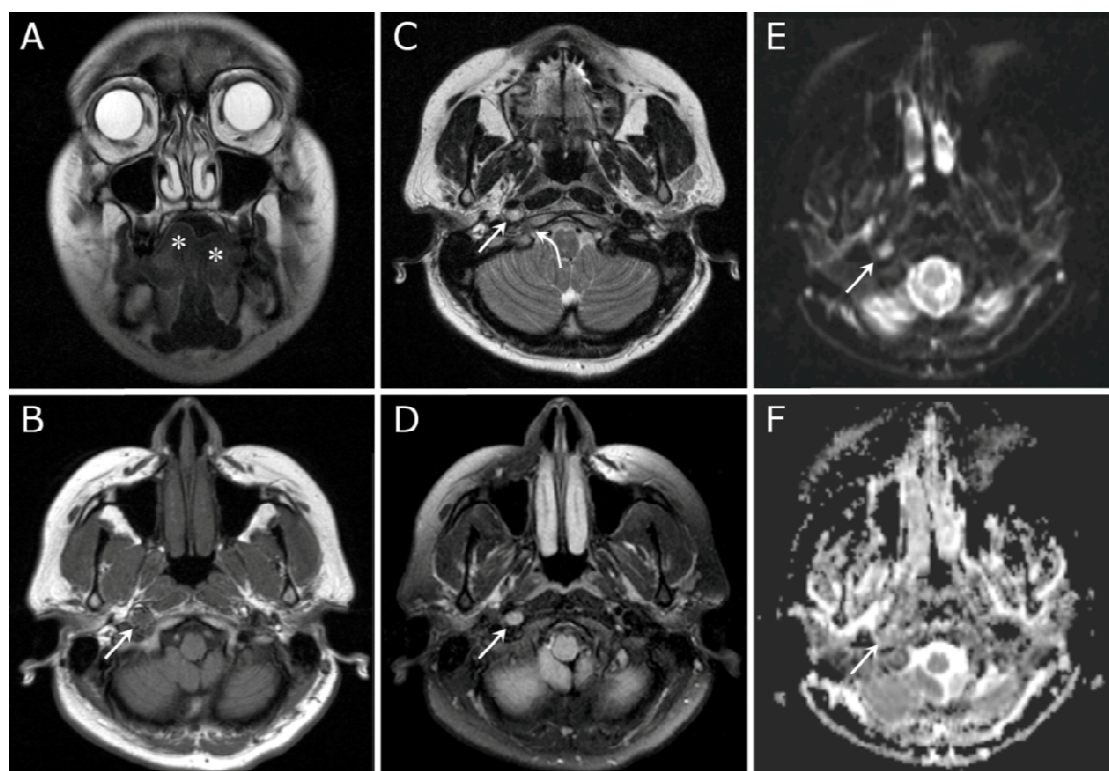


Figure 1. Magnetic resonance imaging of the head. Coronal T2-weighted imaging (A) shows rightward-deviating tongue (asterisks). Axial T1-weighted (B), T2-weighted (C) and T2-tirm (D) imaging show a mass (pointed by arrows) distally to the hypoglossal canal (pointed by a curved arrow). Increased signal intensity on both DWI (E) and ADC imaging (F) is consistent with a “T2 shine through” phenomenon (not restricted diffusion).

The hypoglossal nerve is divided into five segments: the medullary, cisternal, skull base, carotid space, and sublingual segments. Because each segment is usually affected by different disorders, localizing a lesion to a particular segment allows the physician to narrow the differential diagnosis [1]. Cranial nerve schwannomas are usually isolated lesions, except when they are associated with neurofibromatosis type 2 (abnormality of chromosome 22) [2]. Because of the substantial chance of nerve palsy following resection, obtaining an accurate preoperative diagnosis with the identification of the involved structures is crucial to the management strategy [3]. MRI is the investigation of choice in the diagnosis of schwannoma and the identification of the nerve of origin [3]. Evolving MRI techniques such as super selective diffusion tensor tractography (DTT) can provide further details related to the tumor and cranial nerve interface, including the presence or absence of penetrating fibers [4].

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