

Non-Vestibular Schwannoma of Jugular Foramen: A Case Report



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Introduction

- Schwannomas are Schwann cell-derived peripheral nerve tumors of nerve sheaths^{1,3}.
- Most are vestibular schwannomas, originating from the 8th cranial nerve.
- Non-vestibular schwannomas are rare with an even smaller subtype located in the jugular foramen, which make up only 2.9-4% of intracranial schwannomas².
- Common symptoms
 - Vestibular schwannomas: hearing loss, tinnitus and vertigo³
 - Jugular schwannomas: hearing loss, hoarseness, dizziness, dysphagia and facial paresthesias
- A high index of suspicion for intracranial masses with any auditory or vestibular symptoms should warrant further investigation with CT or MRI.

Case Report

- This is a case of a 62-year-old female with a past medical history of hypertension, hypothyroidism and GERD who presented to the ED after two episodes of syncope.
- Associated symptoms included
 - Room spinning dizziness exacerbated by head movements and position changes x 1 month
 - Tinnitus of the left ear x 6 months
 - Daily morning headaches for the last several months

Neurologic Exam

- Horizontal nystagmus
- Mild left facial droop

Radiology Read

- CT Head with a lobulated hypodense mass lesion at the cerebellopontine angle cistern involving the jugular foramen with extensive bony remodeling of the jugular foramen and temporal bone including the internal auditory canal.
- MRI Brain with and without gadolinium showed a T2 hyperintense mass with cystic components measuring 41 mm x 31 mm axial dimensions and 36 mm craniocaudal extending from the left jugular foramen to the left cerebellopontine angle. Associated mass effect upon the left medulla, left pons, left middle cerebellar peduncle and the anterior left cerebellum. Erosion of the left jugular foramen was noted.

Imaging

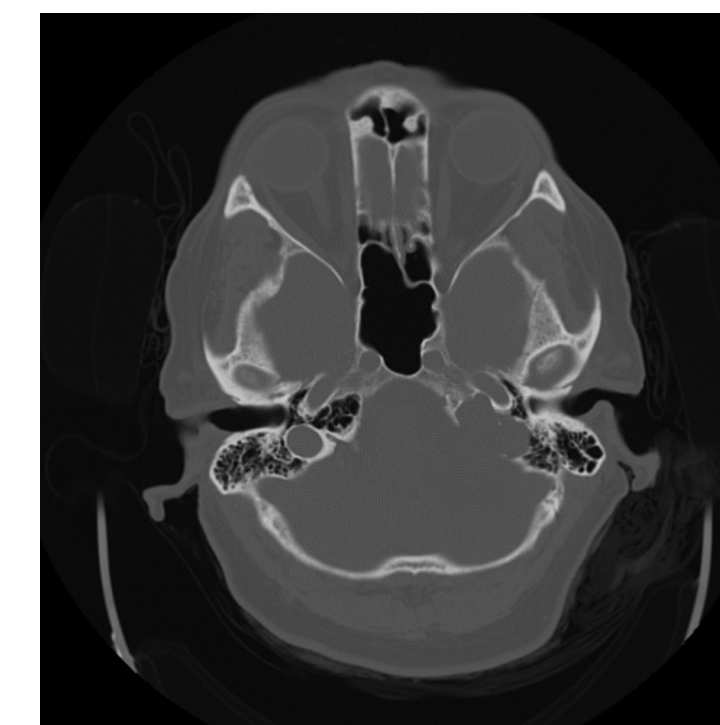


Figure 1. Axial Head CT Bone Window



Figure 2. Axial Head CT Brain Window

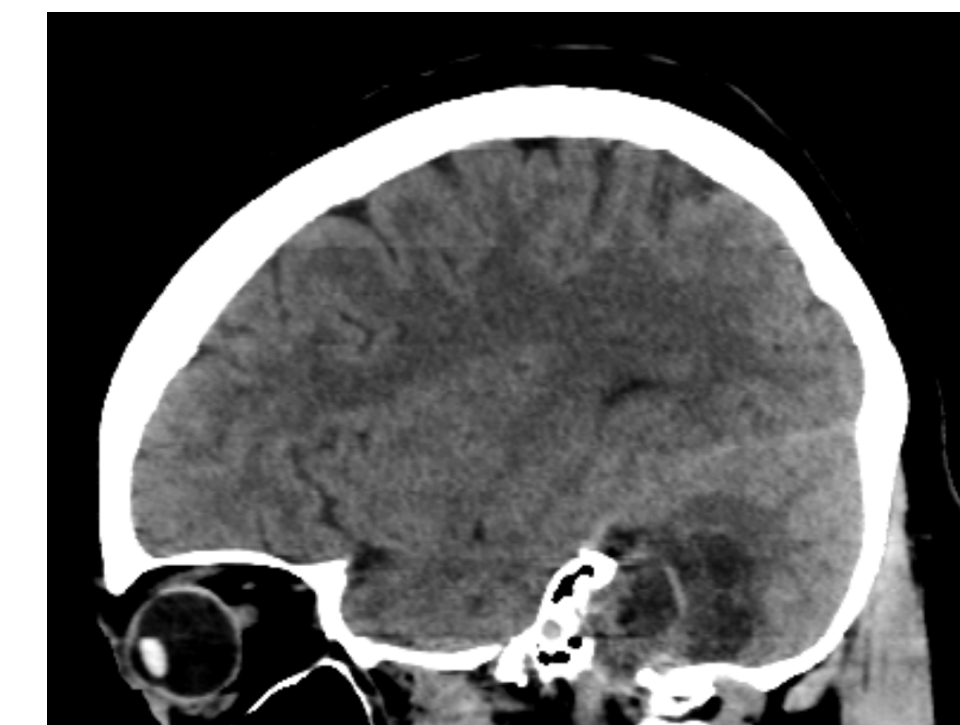


Figure 3. Sagittal CT Head

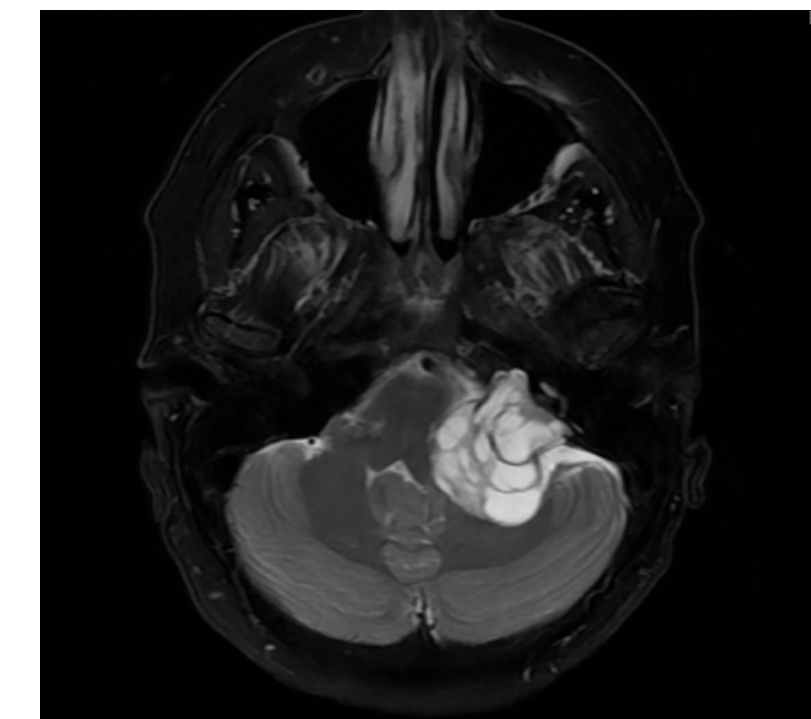


Figure 4. Axial T2 Fat Sat

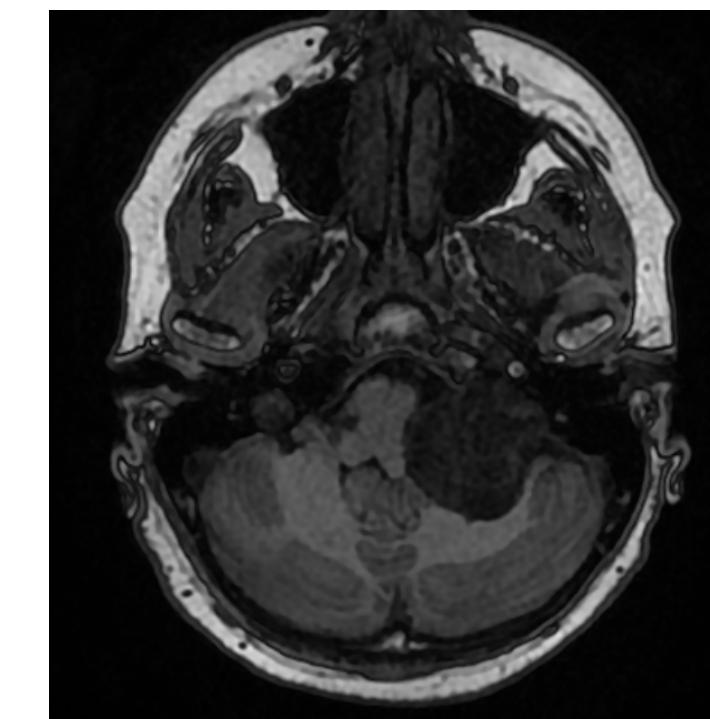


Figure 5. Axial T1/IR

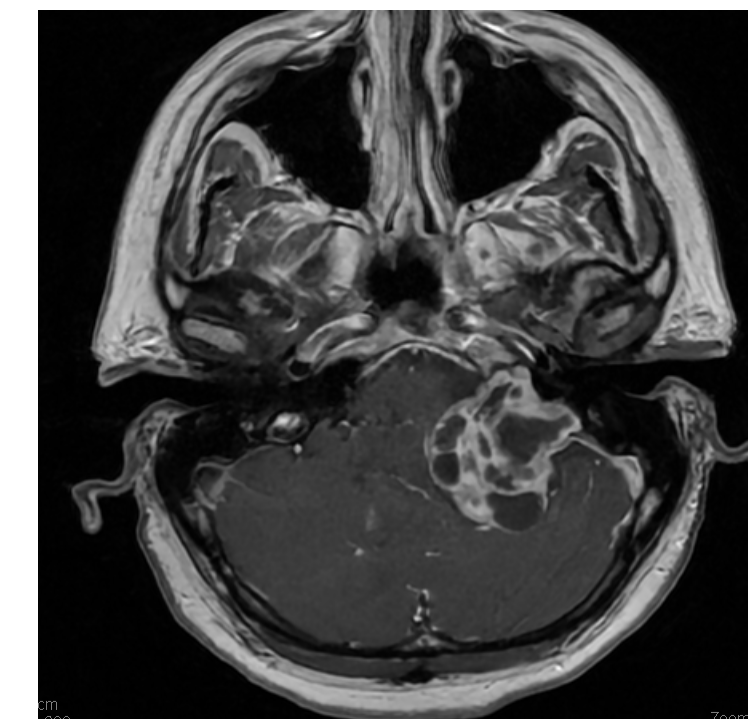


Figure 6. Axial T1 Post Contrast

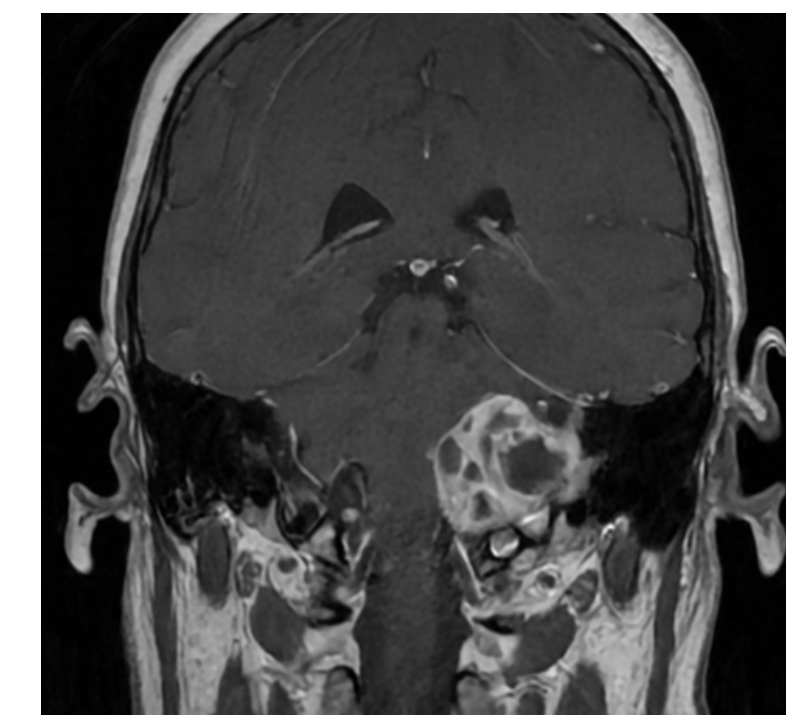


Figure 7. Coronal T1 Post Contrast

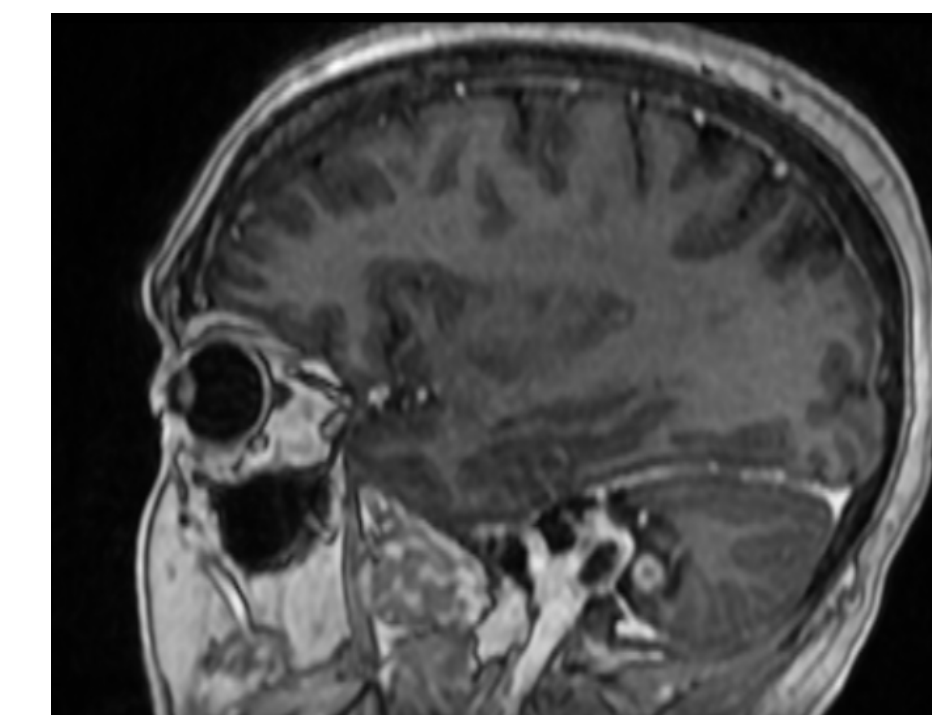


Figure 8. Sagittal T1 Post Contrast

Patient Course

- Neurosurgery evaluation: recommended outpatient follow up for surgical intervention
- PCP outpatient follow up: vertiginous symptoms improved with Meclizine 25, ongoing balance difficulties x 1 month, and tinnitus
- Prior to surgical procedure patient had a nasopharyngolaryngoscopy done to evaluate function of her cranial nerves and was found to have bilateral mobile vocal folds with no pooling of secretions, intact sensation and intact gag reflex
- Patient underwent transtemporal resection of the posterior fossa /jugular foramen with decompression of the brainstem approximately 2 months after initial presentation
- Neurosurgery identified the tumor predominantly arose from the 9th cranial nerve. Ultimately a portion of tumor was left in the jugular foramen to protect the lower cranial nerves with plan for treatment with radiation.
- She was monitored in SICU x 2 day post op, hospital course complicated by HTN, however was noted to have had improvement in her vertiginous symptoms immediately post op

Patient Course (cont.)

- Surgical pathology report confirmed a schwannoma
- PCP outpatient follow up 1 month post-op: patient denied any further dizziness or balance issues, mild vertical nystagmus on physical exam

Discussion

- Treatment options for non-vestibular schwannomas include surgical resection, stereotactic radiosurgery (SRS) and observation.
- Surgical resection can be complete, near total or subtotal, with total resection being the most effective to prevent recurrence.
- Complications of surgical intervention include lower cranial nerve dysfunctions, such as dysphagia and dysarthria, infection and CSF leakage⁴.
- SRS exposes the tumor to a single dose of radiation, noted to be a less-invasive option for small to medium non-vestibular schwannomas, with less complications than surgical resection⁴.
- Schwannomas large enough to compress the brainstem must first be removed by partial resection.
- SRS can also be used as an adjunct treatment for large schwannomas after partial resection, which can be beneficial in sparing cranial nerve function⁵.
- Adjuvant radiotherapy can also be used for lesions with mitosis, which is associated with higher recurrence².
- Observation without treatment mitigates operative risks but requires careful follow up and serial MRI scans. Complications of this conservative approach include tumor growth, mass effect and lack of symptom resolution¹.

Conclusion

- It is important to have a high index of suspicion for an intracranial mass in anyone presenting with vestibular symptoms. For this reason, it is imperative to consider further investigation with a CT or MRI for such patients.
- If untreated, complications include further tumor growth and increased mass effect. Definitive treatment is complete resection.
- Risks and benefits need to be weighed in context of the patient's specific situation when discussing observation versus treatment.
- This case raises awareness for jugular foramen schwannoma, an extraordinarily rare condition.

References

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