



# Management of a Large Jugular Foramen Schwannoma in a Young Patient

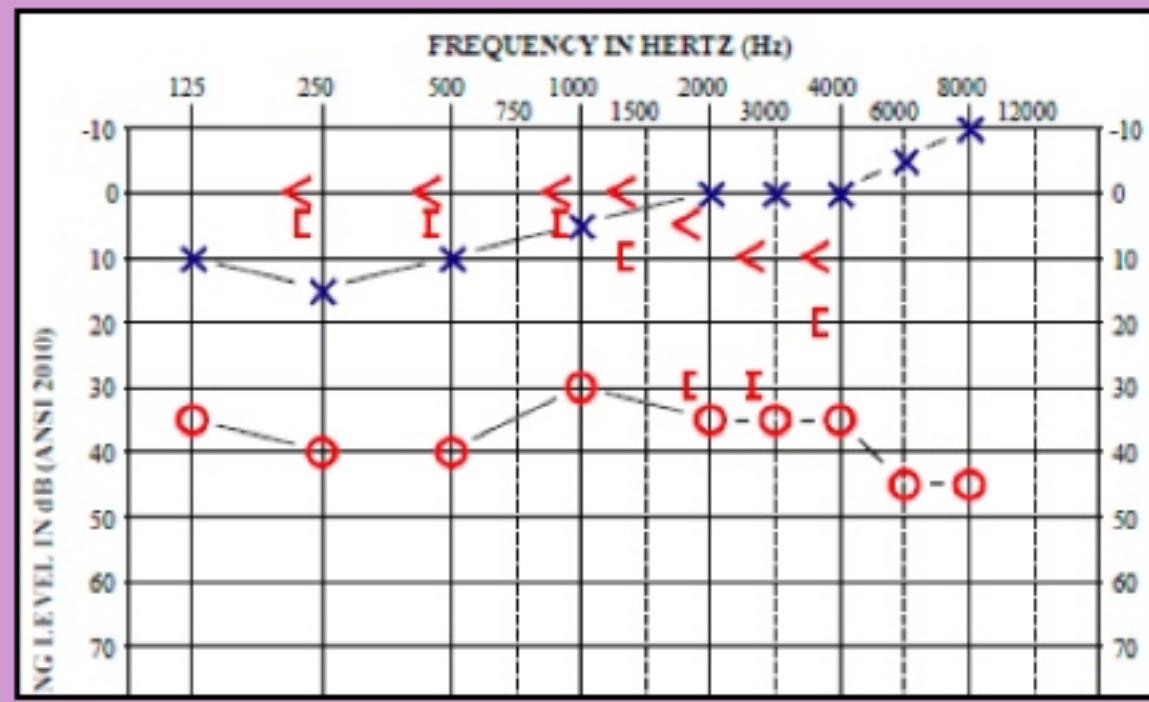


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## Case

A 24 year old presented with progressive right sided mixed hearing loss.

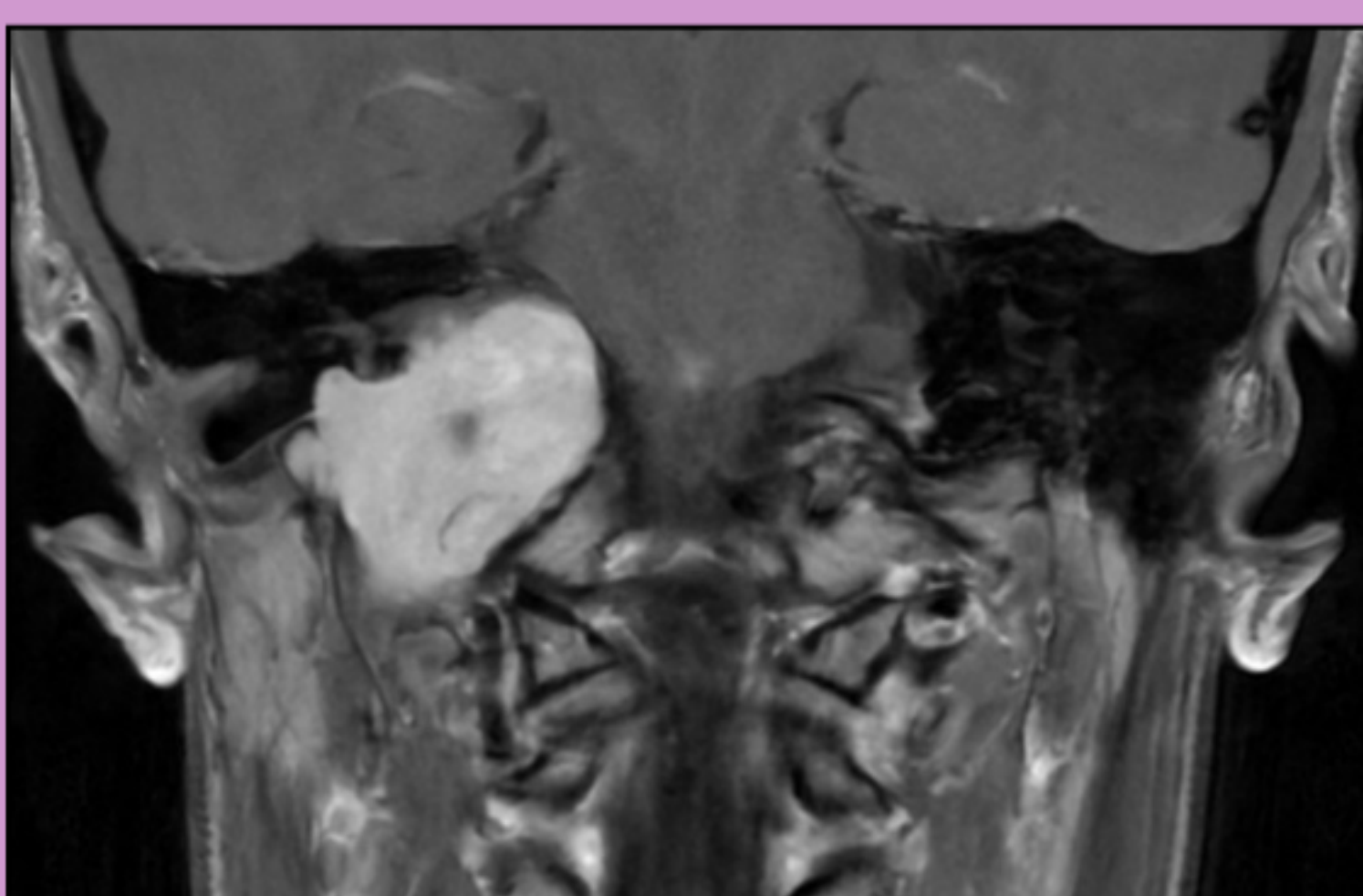


Type A tympanograms  
100% WRS

Otoscopy: fleshy pink mass in the middle ear

Complete cranial nerve exam otherwise normal

Flexible laryngoscopy, nasopharyngoscopy normal



- 7cm mass centered at jugular foramen and middle ear
- T1 bright, avidly enhancing
- Impinging upon CPA superiorly, carotid canal and hypoglossal foramen inferiorly
- Otic capsule intact
- Fallopian canal erosion
- Central necrosis, hypoperfusion
- Lacks moth-eaten bony erosion

## Differential Diagnosis

Good location for paraganglioma

Imaging characteristics of schwannoma

Meningioma possible

*Favored lower cranial nerve schwannoma*

## Discussion

Data is sparse and there is no consensus on management of large jugular foramen tumors in young individuals, especially in patients with intact cranial nerves.

### Observation / Wait-and-Scan

Pros:

- Avoid causing iatrogenic cranial neuropathies prior to those caused by tumor progression
- gather more information on rate of tumor growth

Cons:

- Young patient with many years for this already large tumor to progress; they will eventually need intervention
- Earlier intervention could prevent or delay some cranial neuropathies

### Radiation

Pros:

- Low risk of cranial neuropathies after radiation for jugular foramen lesions

Cons:

- Lacking data on tumor control rates
- Tumor swelling
- Unlikely to shrink the mass or improve middle ear symptoms
- Upfront radiosurgery may make subsequent surgery more challenging
- Young patient with risk of malignant transformation over many years

### Surgery

Pros:

- Gross total resection could have curative intent for this young patient
- Subtotal resection can focus on improving middle ear symptoms with considerably lower risk to cranial nerves

Cons:

- Gross total resection has a prohibitively high risk of permanent lower cranial neuropathies
- Subtotal resection has a high risk of regrowth

### Combination Therapy: SRS, RT

Pros:

- Optimize risk to lower cranial nerves with symptom and tumor control.

Cons:

- Nonzero risk to cranial nerves (fallopian canal eroded), limited data on outcomes