44 year old woman presents with neck pain

Elena G. Violari M.D.
Leo Wolansky, M.D.
Glomus Tumor (Chemodectoma, Non-chromaffin Paraganglioma)
CT soft tissue neck with contrast, coronal

Strongly enhancing mass
CT soft tissue neck with contrast, sagittal

Strongly enhancing mass located near internal jugular
Strongly enhancing mass located in the right carotid space
Carotid Space

Carotid space Contains:
- Carotid Artery
- Jugular vein
- Portions of CN 9, CN 10, CN 11
- Internal jugular chain lymph nodes

3 classic carotid space tumors:
- Paraganglioma (Glomus Tumor)
- Schwannoma
- Neurofibromma
Glomus Tumor

• Neoplasms of chemoreceptor organs ("Chemodectoma")
• Hypervascular (intense tumor blush) on CT
• “Salt and Pepper” appearance on MRI from heterogeneity and flow voids.
• In familial conditions can be multiple and bilateral
• <5% malignant degeneration.
• Uptake with metaiodobenzylguanidine (MIBG) & octreoscan scintigraphy is useful for assessing multiple lesions
Glomus Tumor

• Carotid Body Tumor:
  • Carotid bifurcation (Splaying ICA & ECA)

• Glomus Jugulare:
  • Skull base / Jugular foramen
  • Middle ear floor destroyed

• Glomus Vagale:
  • Above carotid bifurcation, but below the jugular foramen

• Glomus Tympanicum:
  • Confined to the middle ear
  • Overlying the cochlear promontory
Differential Diagnosis:

- **Schwannoma:**

<table>
<thead>
<tr>
<th>Schwannoma</th>
<th>Paraganglioma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not vascular on Angio</td>
<td>Hyper vascular tumor (tumor blush on angio)</td>
</tr>
<tr>
<td>No salt and pepper on MRI</td>
<td>Salt and Pepper appearance on MRI</td>
</tr>
<tr>
<td>Not active on Octreoscan</td>
<td>Avid on octreoscan and/or MIBG scan</td>
</tr>
<tr>
<td>No flow voids (target sign)</td>
<td>Flow voids</td>
</tr>
</tbody>
</table>

- **Lymph nodes:** Metastatic lesions, e.g. squamous cell cancer, renal cell is less common but similarly hypervascular

- **Thrombophlebitis of the internal jugular vein** (identifying the vein and tracing it should differentiate)
References:

1. Radiopedia


