40 y/o Male with History of Vertigo and Headache

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Axial T1 MRI
(with contrast)
Axial T1 MRI (without contrast)
Axial T1 MRI (Fat Suppressed, with Contrast)
Coronal T1 MRI (without contrast)
Internal Auditory Canal Lipoma
Axial T1 Weighted MRI (w/ contrast)

- Small focal T1 hyperintensity seen within the left auditory canal (red arrow)
- Lesion does not enhance with contrast
  - T1 hyperintensity represents fat
Axial T1 Weighted MRI (w/o contrast)

- Small focal hyperintensity seen within the left auditory canal (red arrow)
Axial T1 MRI – Fat Suppressed (Enhanced, with Contrast)

- Small focal hyperintensity no longer seen within the left auditory canal (red arrow and circle)
- No gadolinium enhancement is noted on the fat suppressed sequence allowing exclusion of schwannoma

Note: Suppression of retrobulbar/orbital fat quickly allows us to determine fat suppressed nature of imaging
Coronal T1 Weighted MRI (w/o contrast)

- Small focal hyperintensity seen within the left auditory canal (red arrow)
Internal Auditory Canal Lipoma

**Causes:** Thought to be a congenital malformation of the primitive meninx (forms the subarachnoid space and meninges) however definitive cause remains unclear

**Clinical Presentation:** Ipsilateral sensorineural hearing loss, tinnitus, or vertigo presenting at ~40 years old

**Imaging:** *Clinical presentation is nonspecific but imaging is mandatory*
- **MRI:** Primary imaging modality for diagnosis
  - Hyperintense on T1-weighted images
  - Will suppress via Fat Suppressed imaging
  - Does not enhance with contrast administration
- **CT:** Can demonstrate presence of fat
  - Can be used to rule out calcification and bone erosion

**Rarity:** IAC lipomas are very rare and are estimated to make up less than 1% of all cerebellopontine masses
Cerebellopontine Angle Mass Differential

Common entities affecting the cerebellopontine angle include:

- Vestibular Schwannomas
- Meningiomas
- Epidermoid Tumors
- Ependymomas

Distinguishing characteristics on imaging are summarized below:

<table>
<thead>
<tr>
<th></th>
<th>T1 (-FS, -C)</th>
<th>T1 +FS</th>
<th>T1 +Contrast</th>
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</thead>
<tbody>
<tr>
<td>Lipoma</td>
<td>Hyperintense</td>
<td>+ Suppression</td>
<td>- Enhancement</td>
</tr>
<tr>
<td>Vestibular Schwannomas</td>
<td>Hypo- or iso-intense</td>
<td>- Suppression</td>
<td>+ Enhancement</td>
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<tr>
<td>Meningiomas</td>
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<tr>
<td>Epidermoid Tumors</td>
<td>Isointense</td>
<td>- Suppression</td>
<td>+ Peripheral</td>
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<td>Ependymomas</td>
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References


