Young female with tinnitus and headache.

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Cerebellopontine angle epidermoid
T1 hypointense & T2 hyperintense lesion in the right cerebellopontine angle

Epidermoid cysts follow the intensity of the CSF on CT, T1, T2
Epidermoid cysts demonstrate restricted diffusion

Apparent diffusion coefficient (ADC)-MRI image, axial

Diffusion weighted (DWI)-MRI image, axial
Epidermoid cysts

• An inclusion cyst:
  – Benign congenital lesions of ectodermal origin.
  – 1% of all intracranial lesions
  – Increase in size as the patient ages, usually asymptomatic until age 20-40.
  – Most common locations:
    • Cerebellopontine angle (40-50%), supracellular cistern (10-15%), fourth ventricle (~17%).
Epidermoid cysts

• Presentation:
  – Headaches (most common).
  – Cranial nerve deficits (tinnitus, vertigo, etc)
  – Cerebellar symptoms
  – Seizures
  – Recurrent aseptic meningitis (from cyst rupture)
Epidermoid cysts

- **CT Findings:**
  - Attenuation similar to CSF.
  - Calcifications seen in 10-25%.
  - No contrast enhancement.

- **MRI Findings:**
  - Typically have intensity similar to CSF on T1 and T2.
  - No contrast enhancement.
  - Similar to brain parenchyma on ADC.
  - Restricted diffusion on DWI.
  - Heterogeneous/dirty signal; higher than CSF.
Epidermoid cysts

- Differential diagnosis and distinguishing characteristics:
  - CSF collections (arachnoid cyst or mega cisterna magna).
    - Follow CSF on ALL sequences, including FLAIR and DWI.
  - Dermoid Cyst
    - Often fat density due to sebum, and often located along the midline.
  - Inflammatory cyst (neurocysticercosis)
    - May enhance peripherally and have associated edema.
      Usually no restricted diffusion.
  - Cystic tumors (acoustic schwannoma or craniopharyngioma)
    - Usually a solid, enhancing component present.
References:

1. Radiopedia

