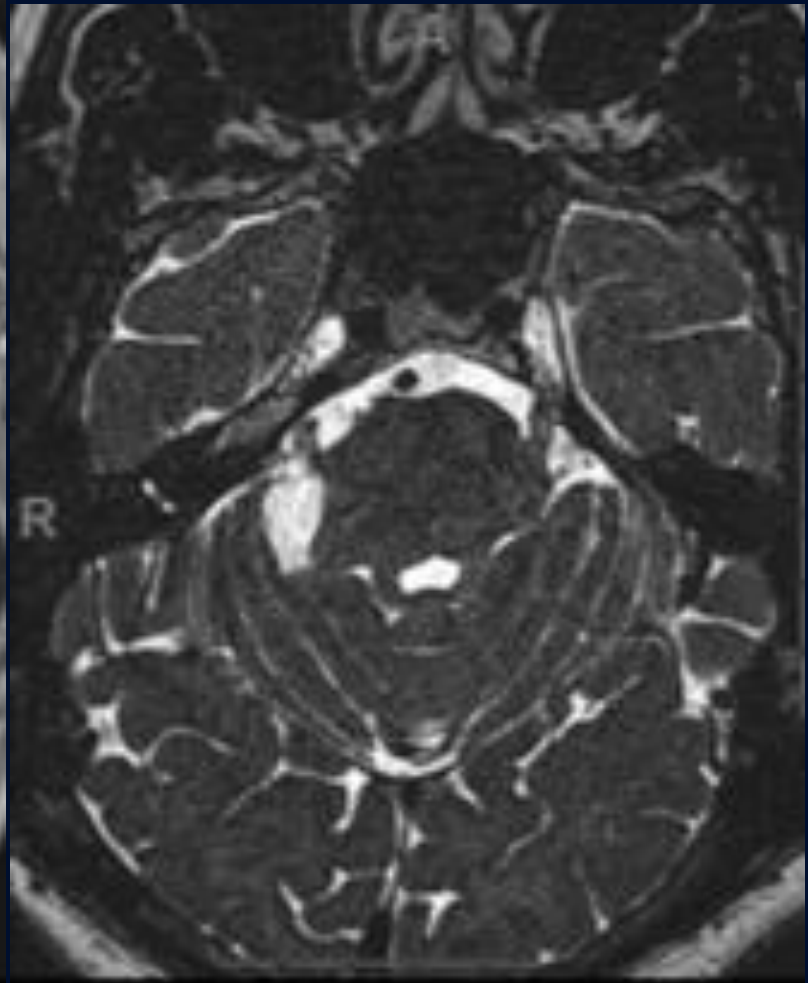
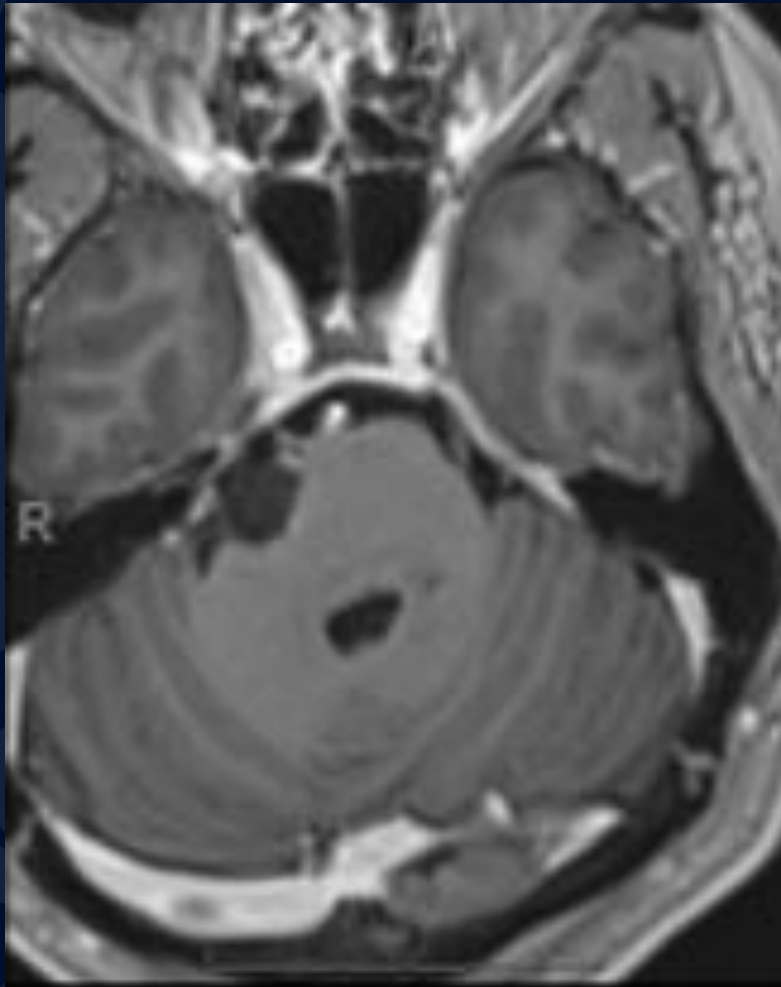
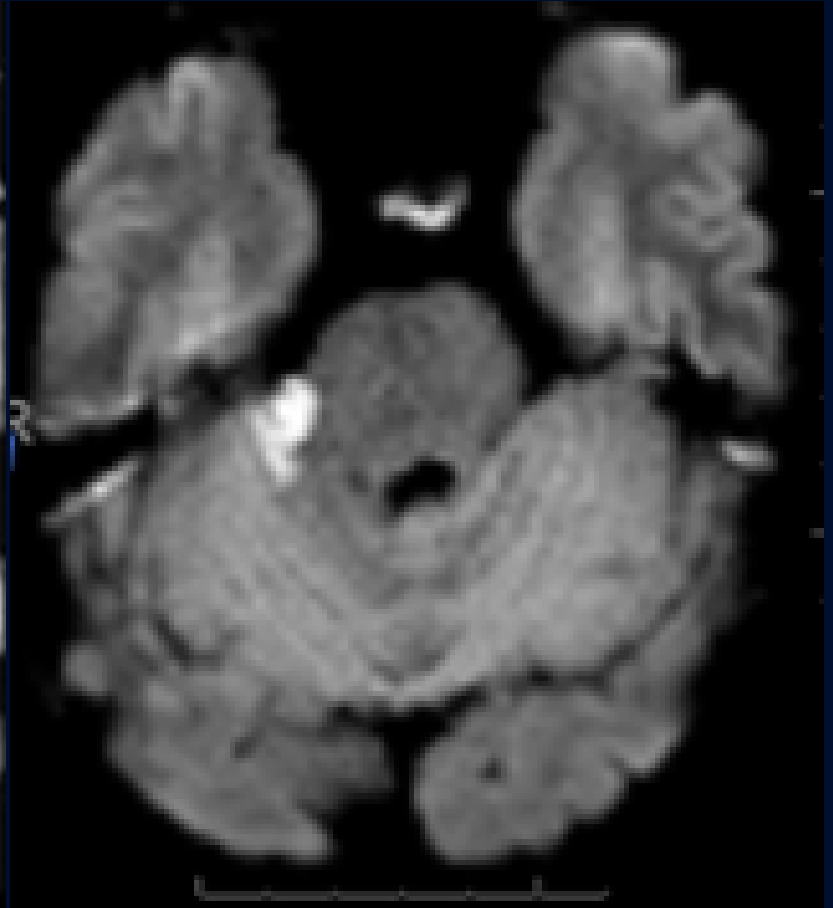
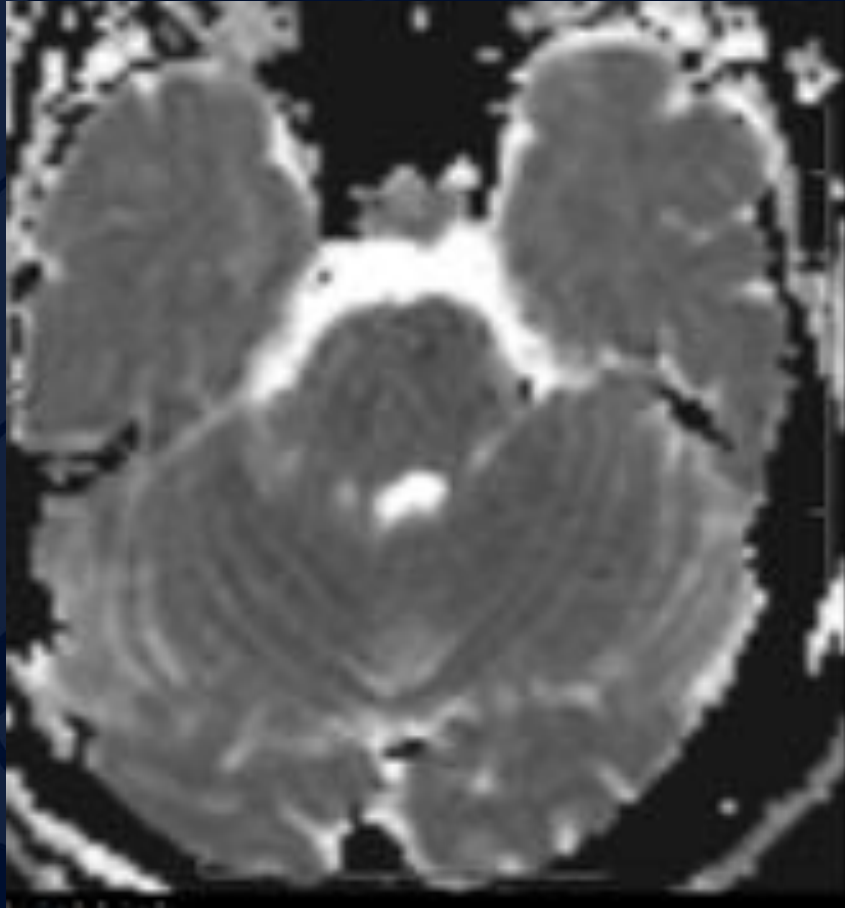


Young female with tinnitus and headache.

John A Cieslak III, MD, PhD
Leo Wolansky, MD



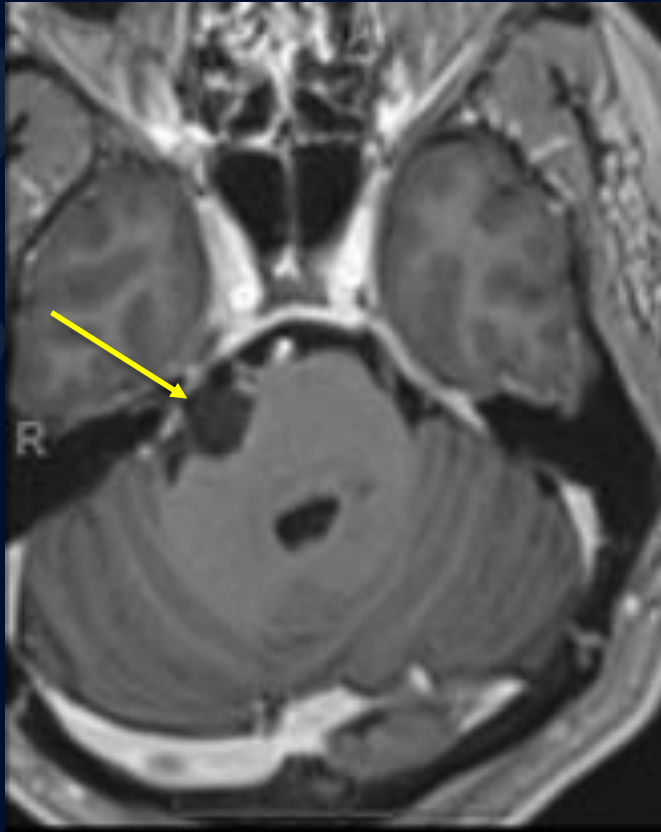


A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching off it. The leaf's edge is serrated.

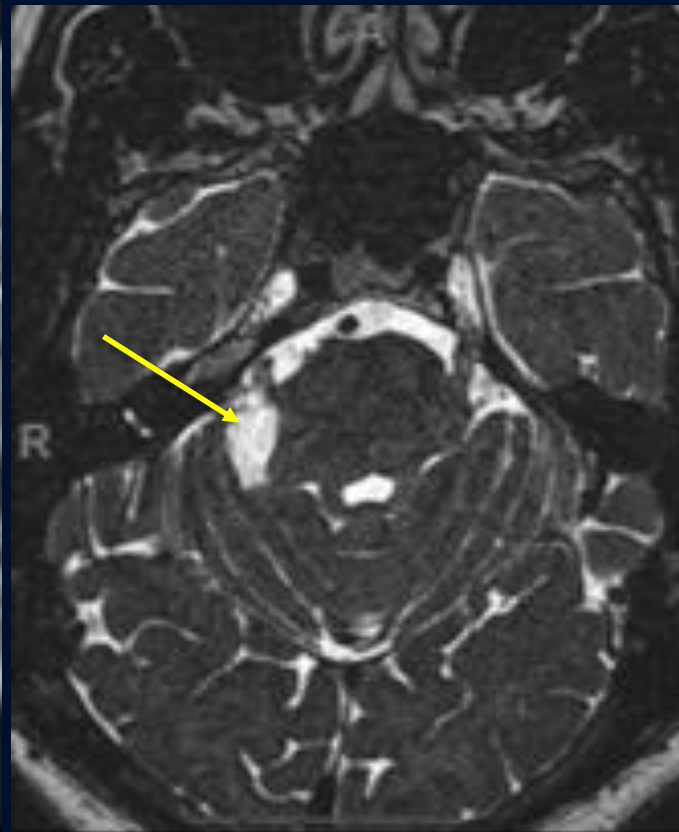
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Cerebellopontine angle epidermoid

T1 hypointense & T2 hyperintense lesion in the right cerebellopontine angle



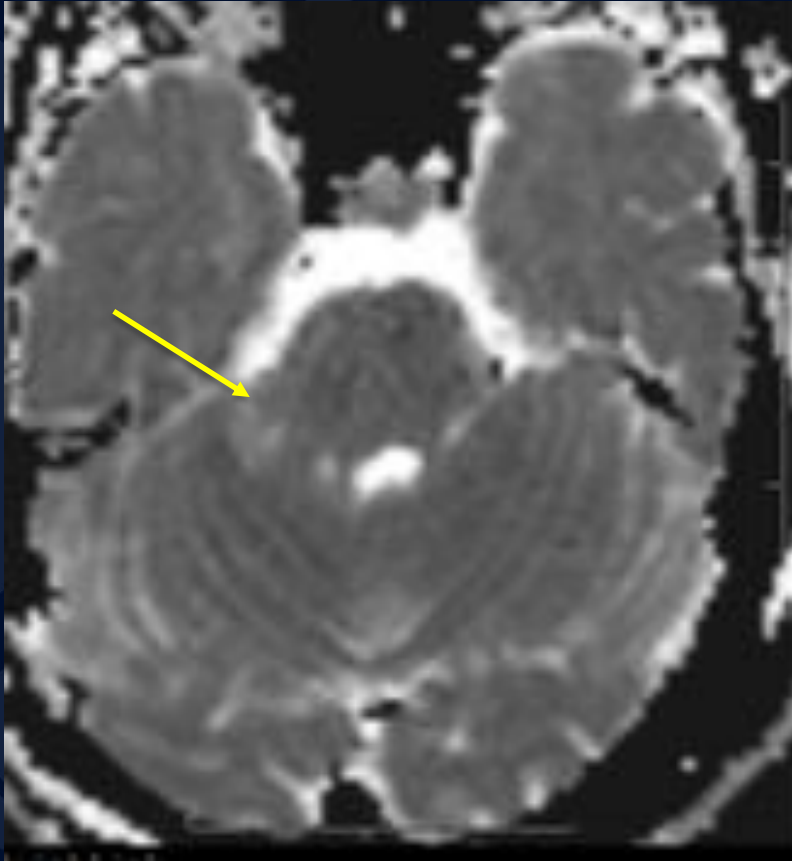
T1-weighted MRI image, post contrast, fat saturated, axial



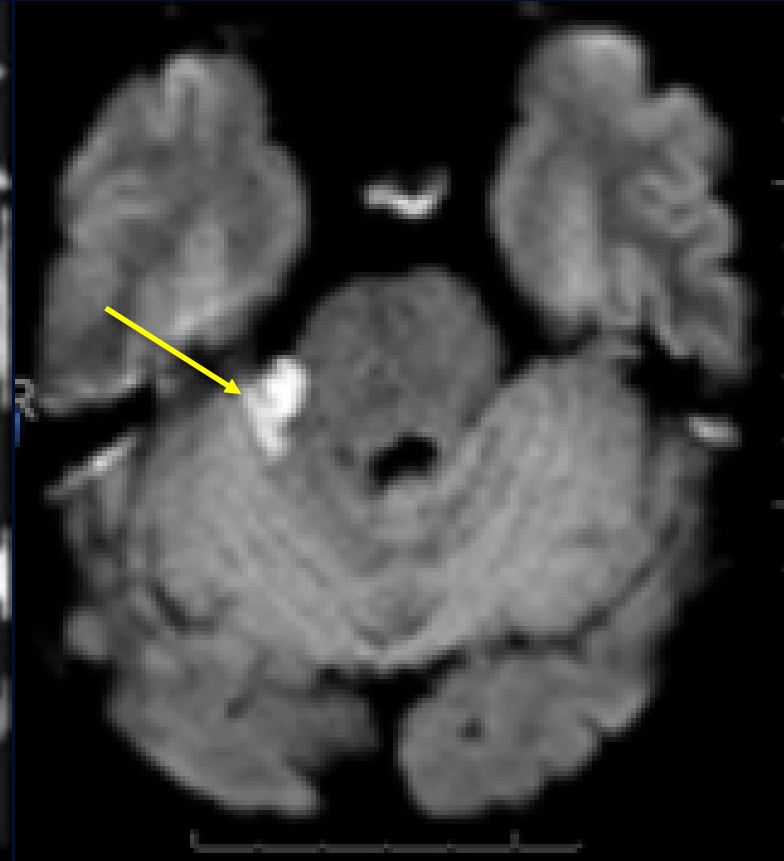
T2-weighted MRI image, axial

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%), supracellar 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.

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2. Short JG, Marx WF. Brain Epidermoid Imaging. eMedicine website. Last updated: November 4, 2015. Accessed April 10, 2018.
3. Mafee MF, Kumar A, Heffner DK. Epidermoid cyst (cholesteatoma) and cholesterol granuloma of the temporal bone and epidermoid cysts affecting the brain. *Neuroimaging Clin N Am*. 1994; 4(3): 561-578.
4. Tampieri D, Melanson D, Ethier R. MR imaging of epidermoid cysts. *American Journal of Neuroradiology*. 1989; 10(2): 351-356.