51-year-old male presents with headaches

Jignesh Modi, MD

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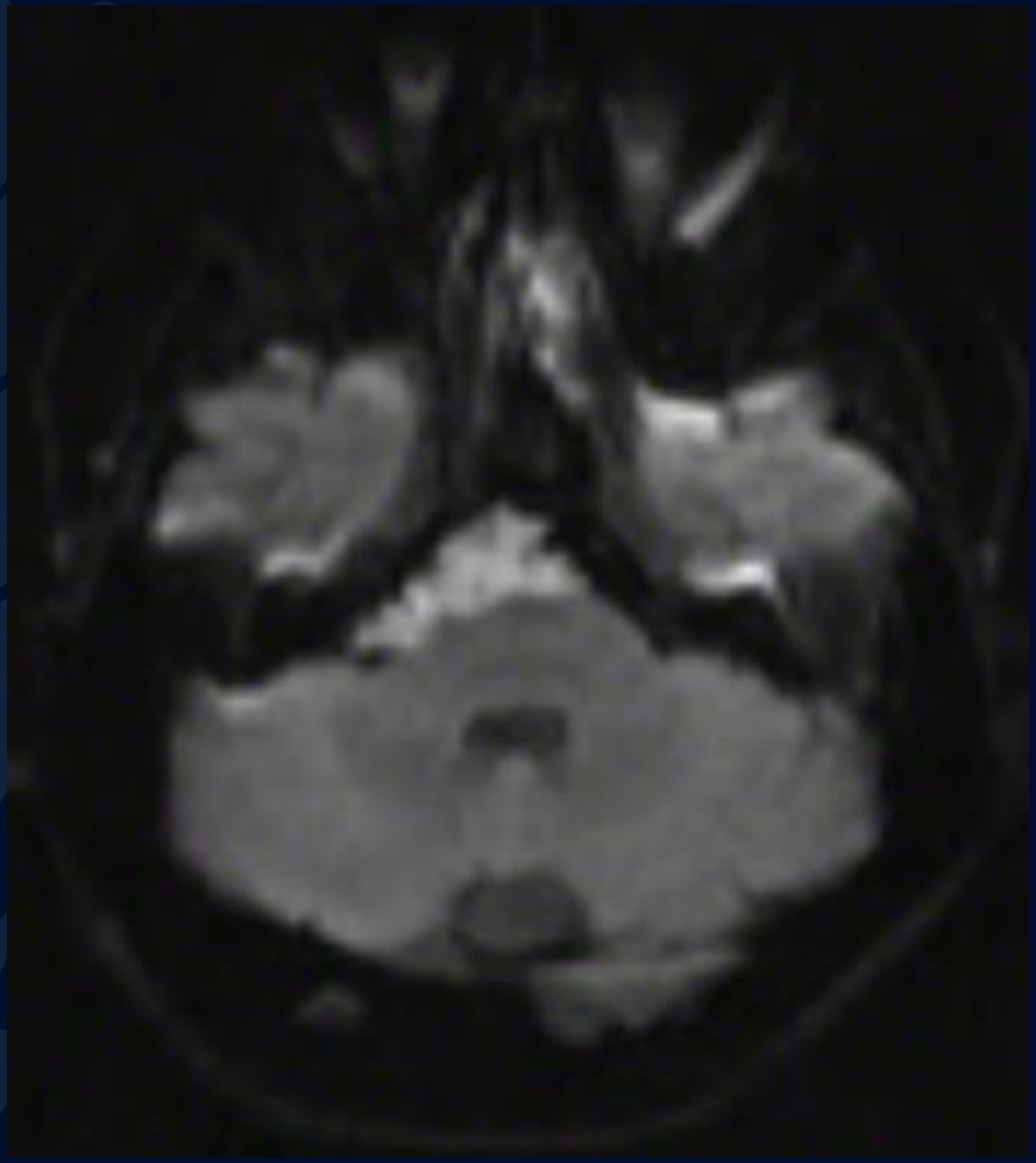

Diffusion
Weighted Image

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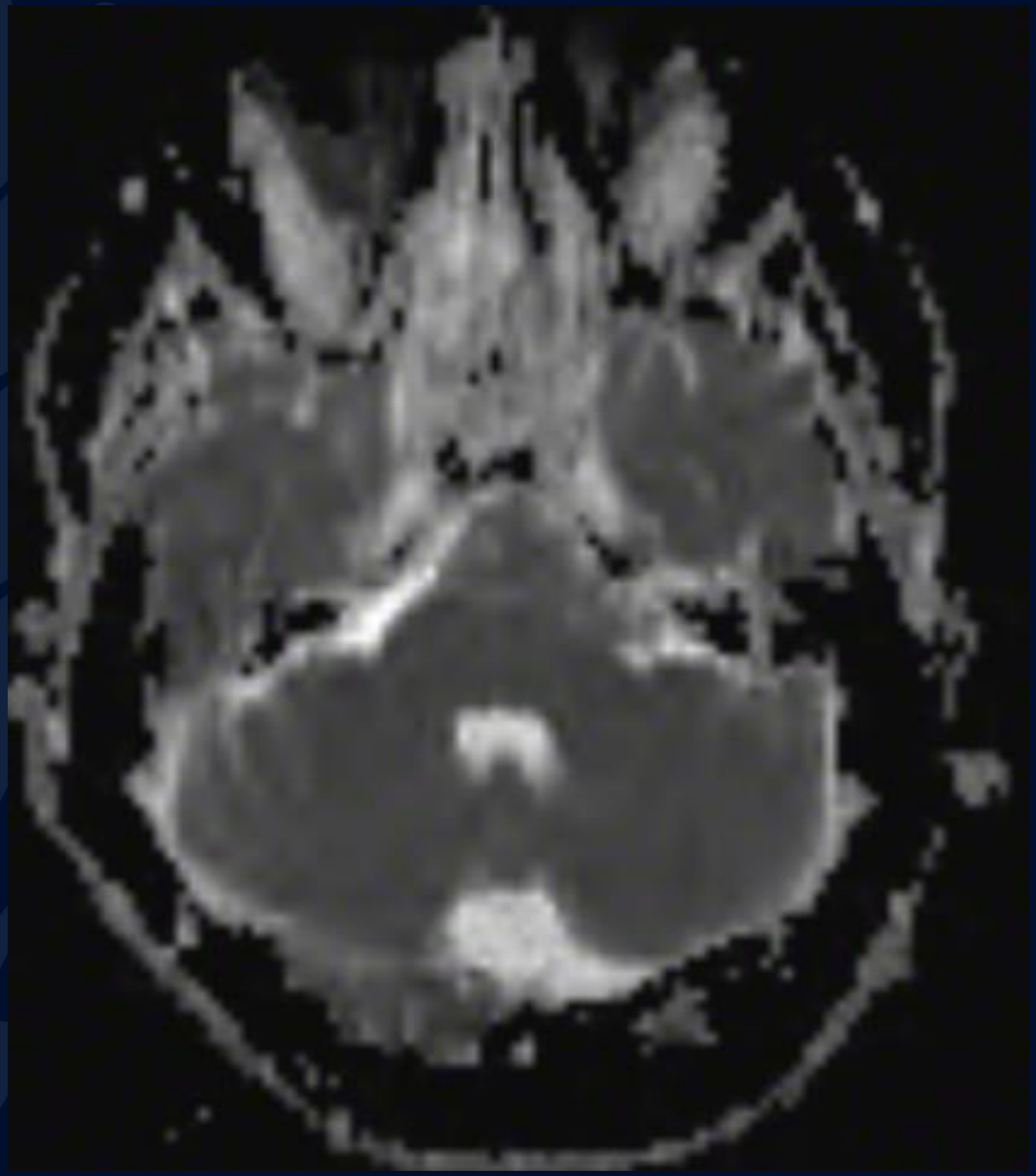

ADC

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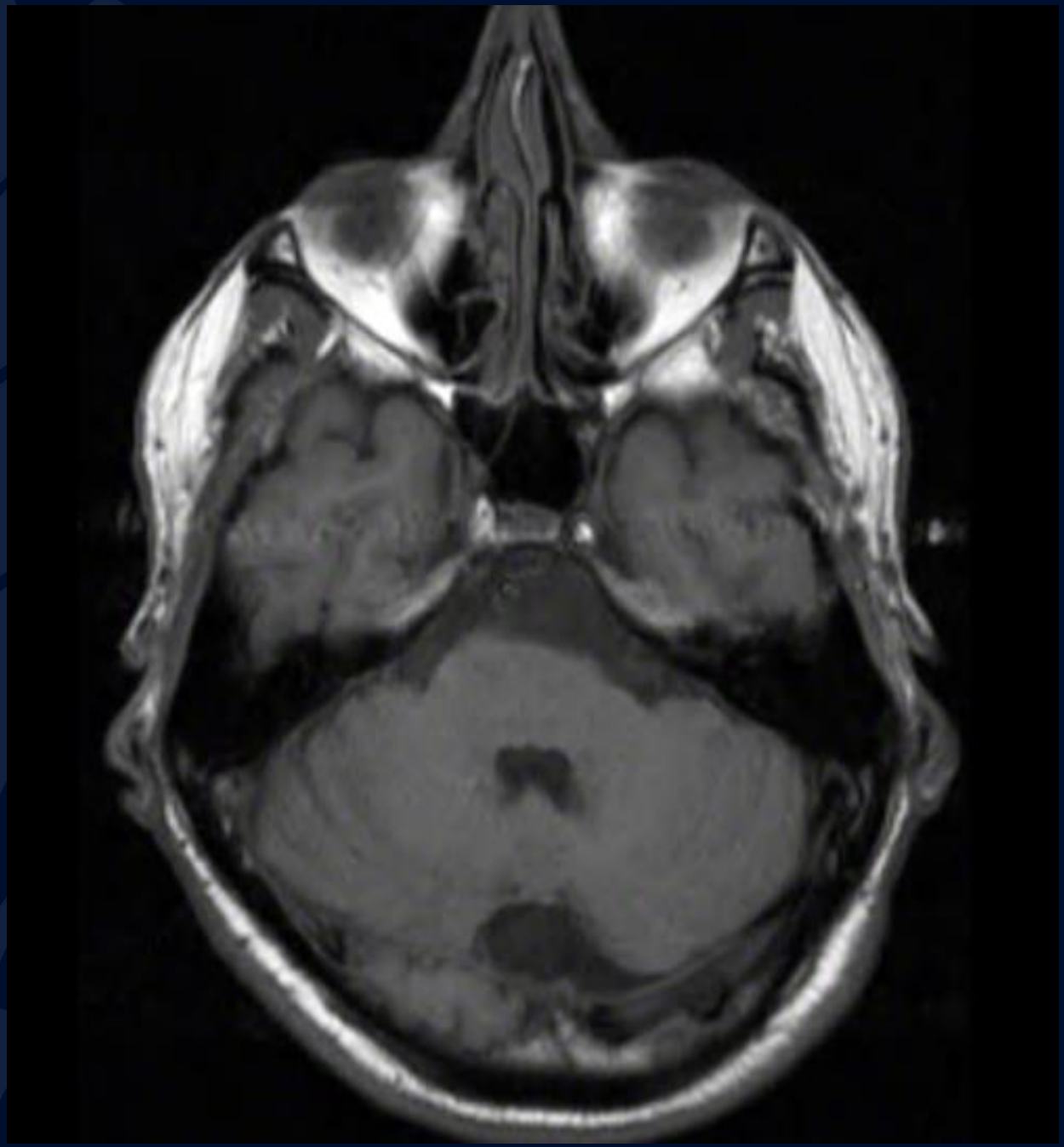

Axial T1 pre-contrast

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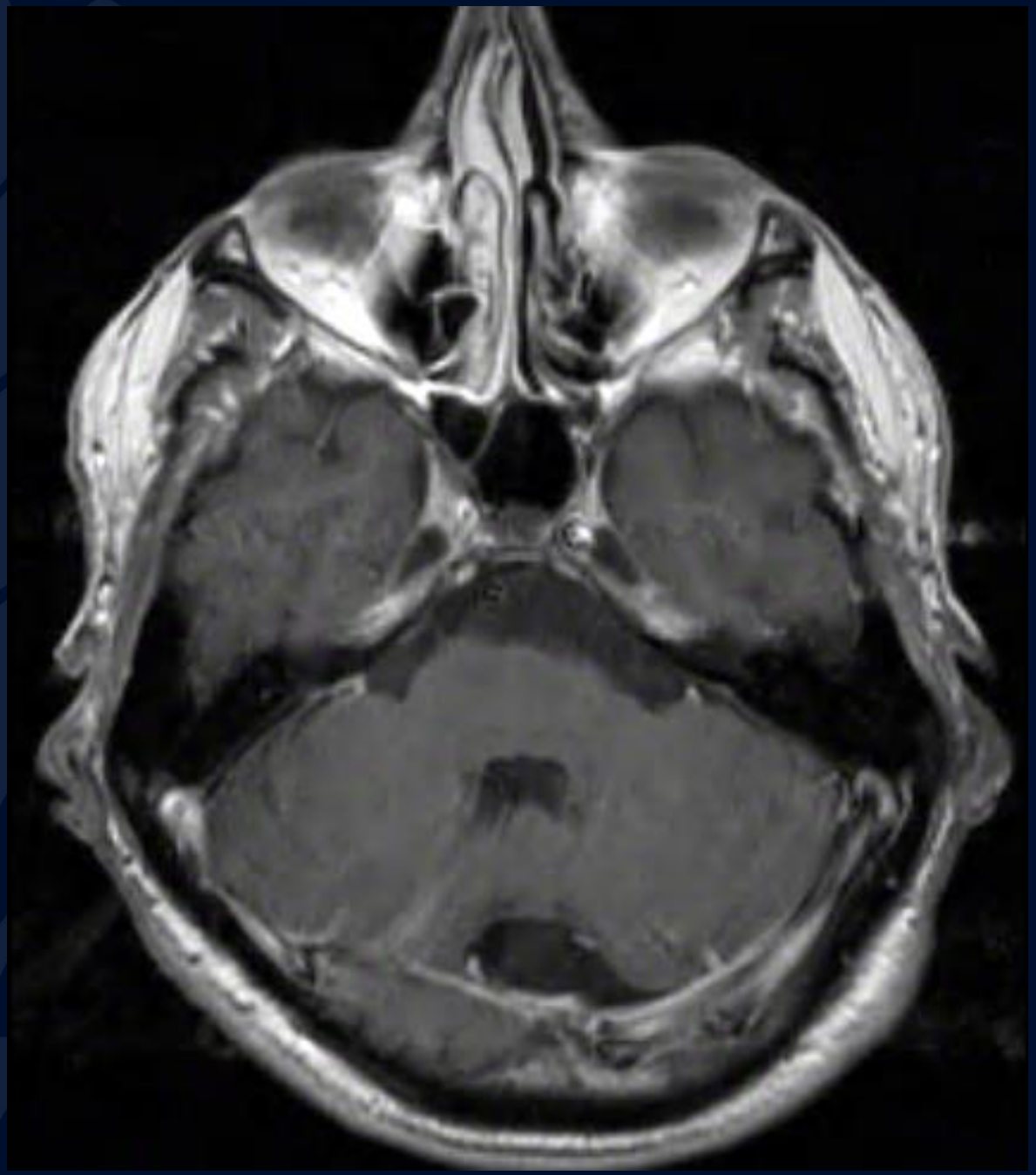

Axial T1 post-contrast

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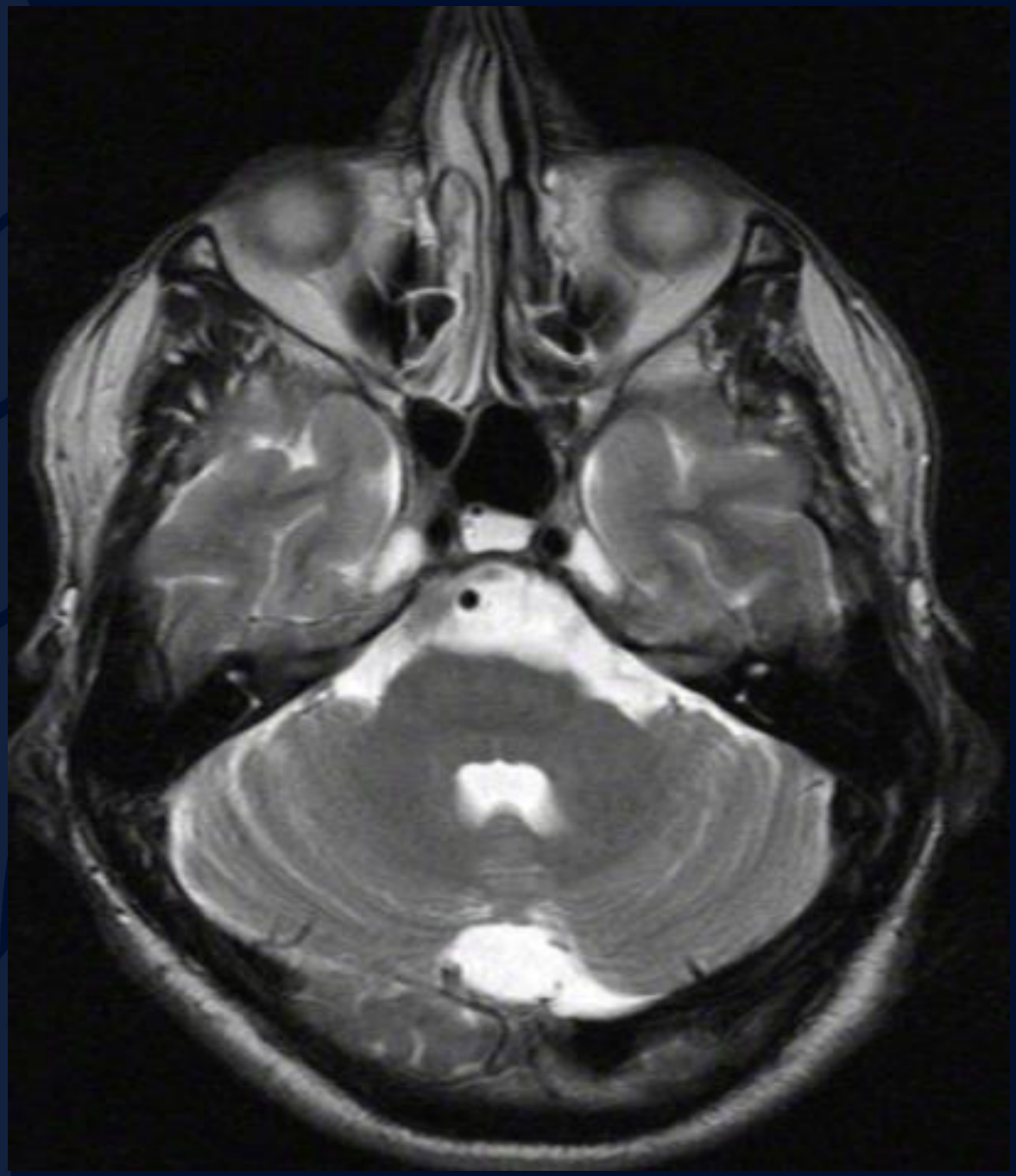

Axial T2

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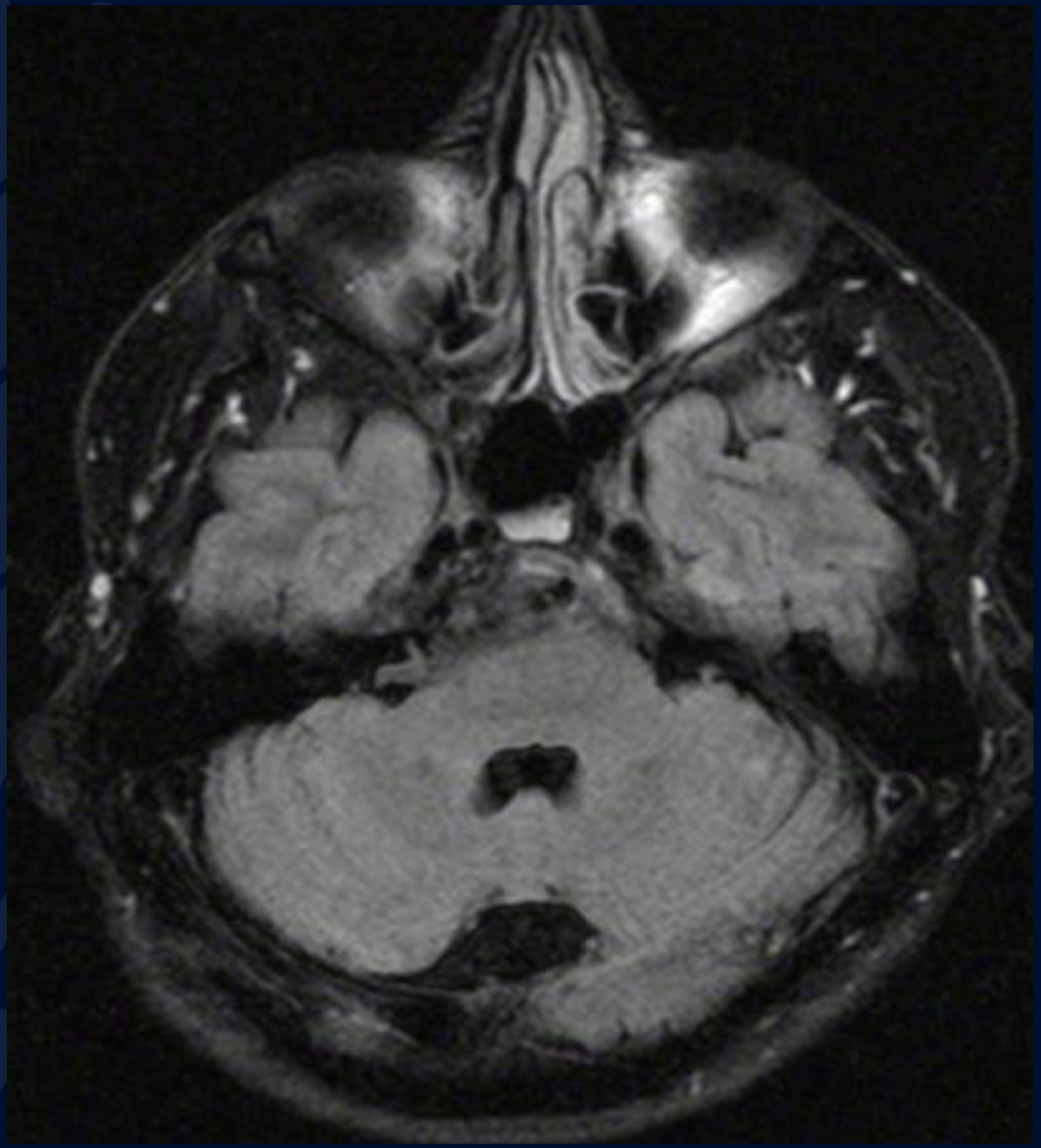

Axial Flair

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Epidermoid Cyst

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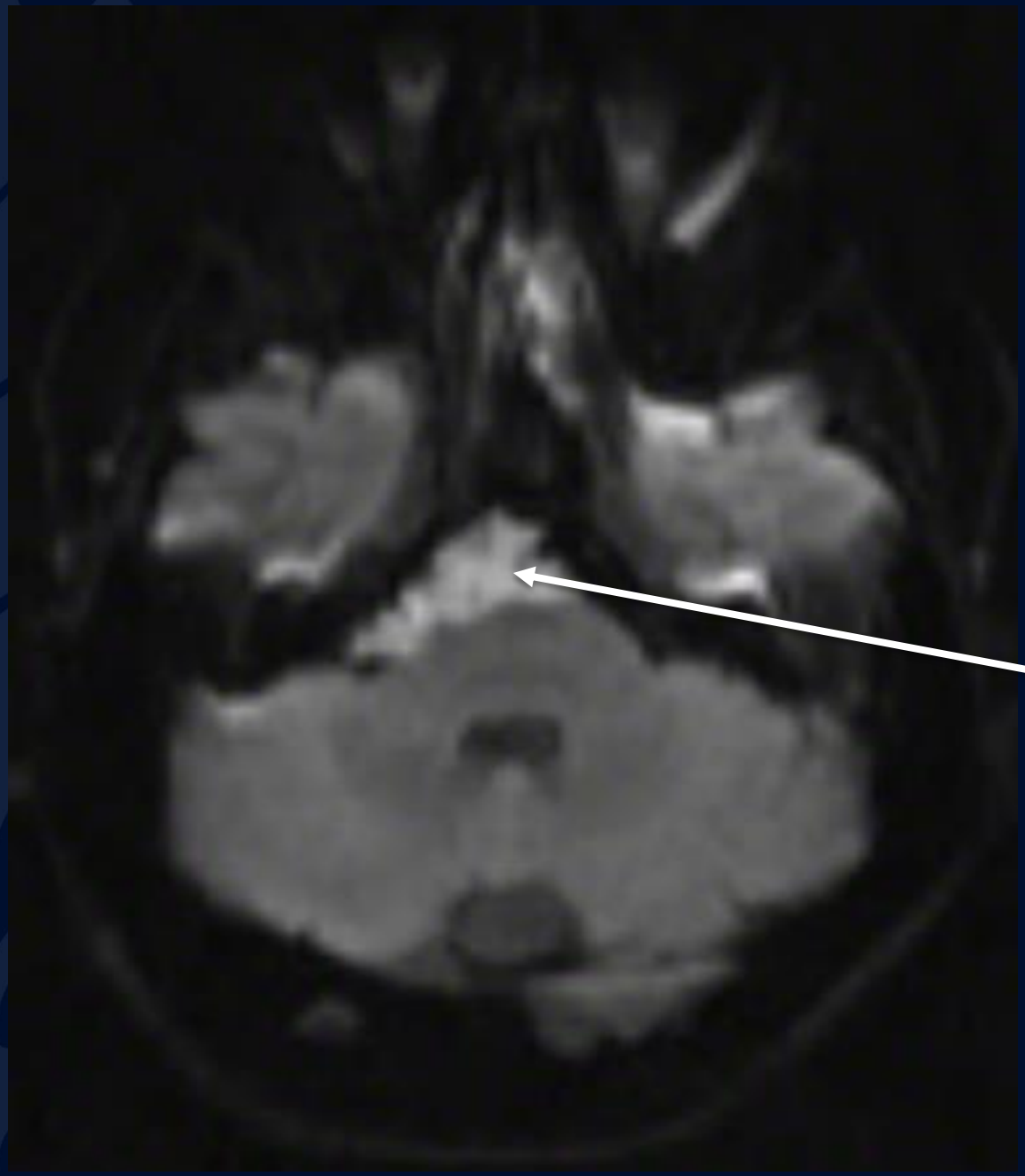

Diffusion
Weighted Image

Bright signal

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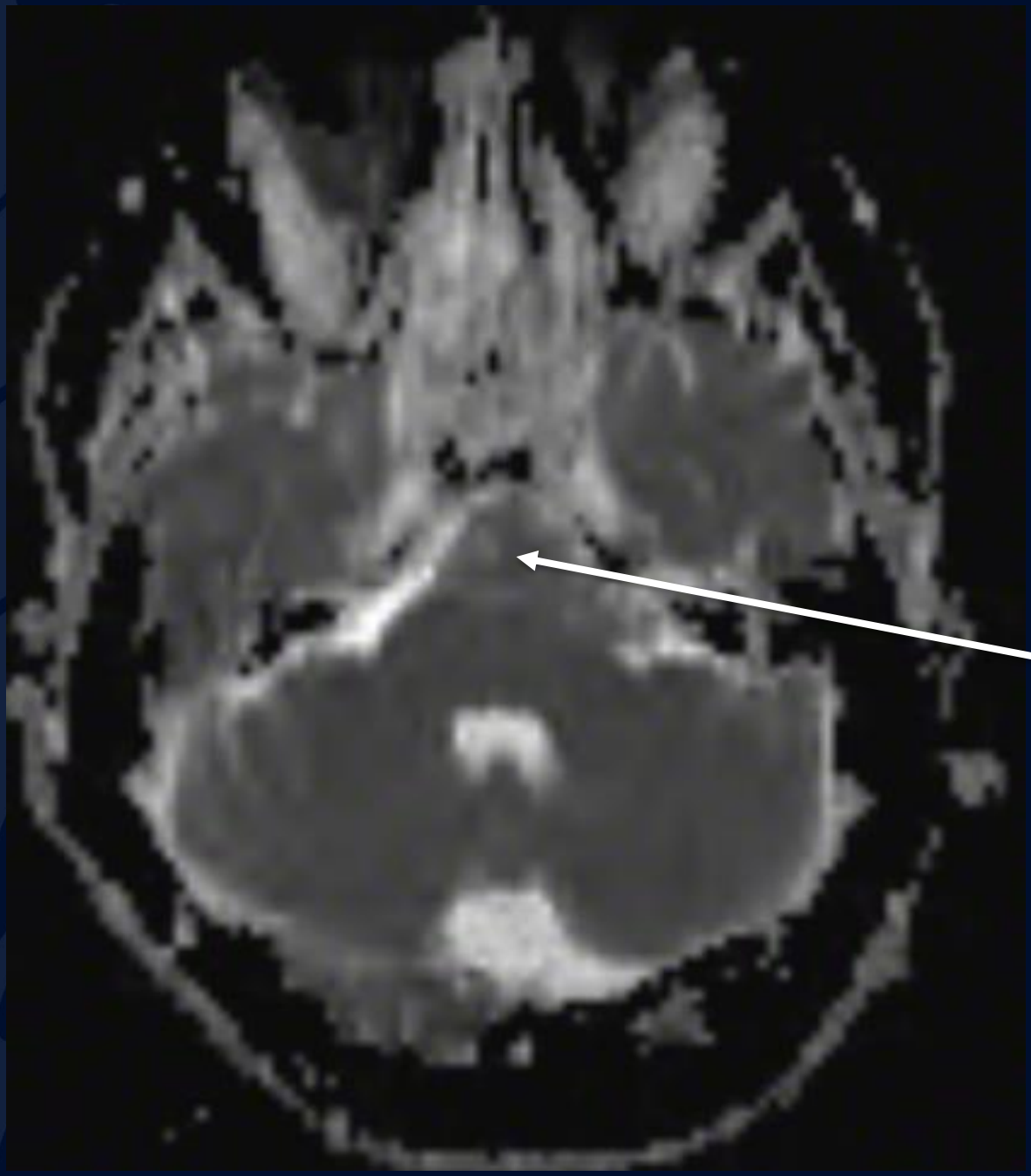

ADC

Isointense to brain parenchyma

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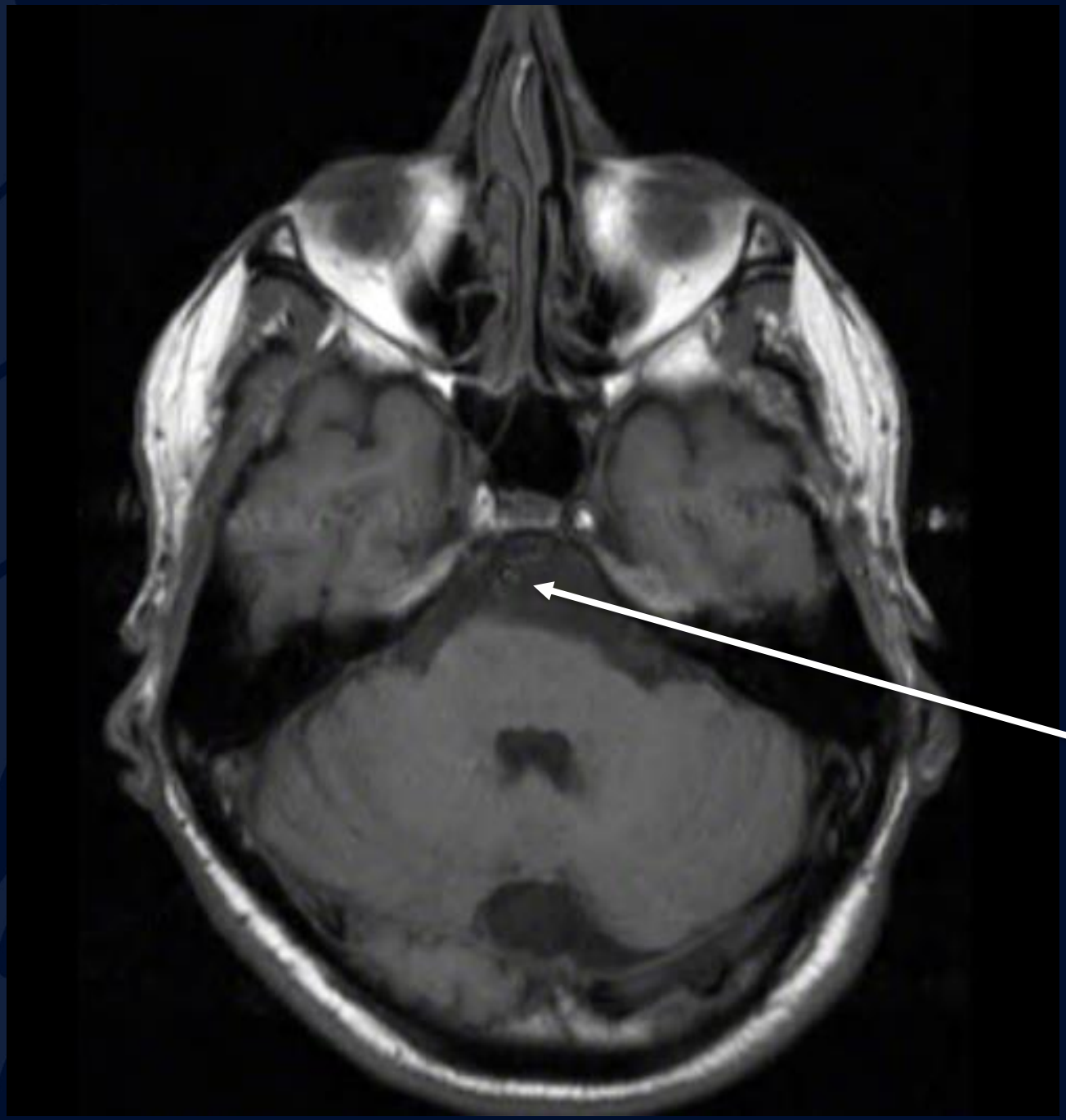

Axial T1 pre-contrast

Hypointense

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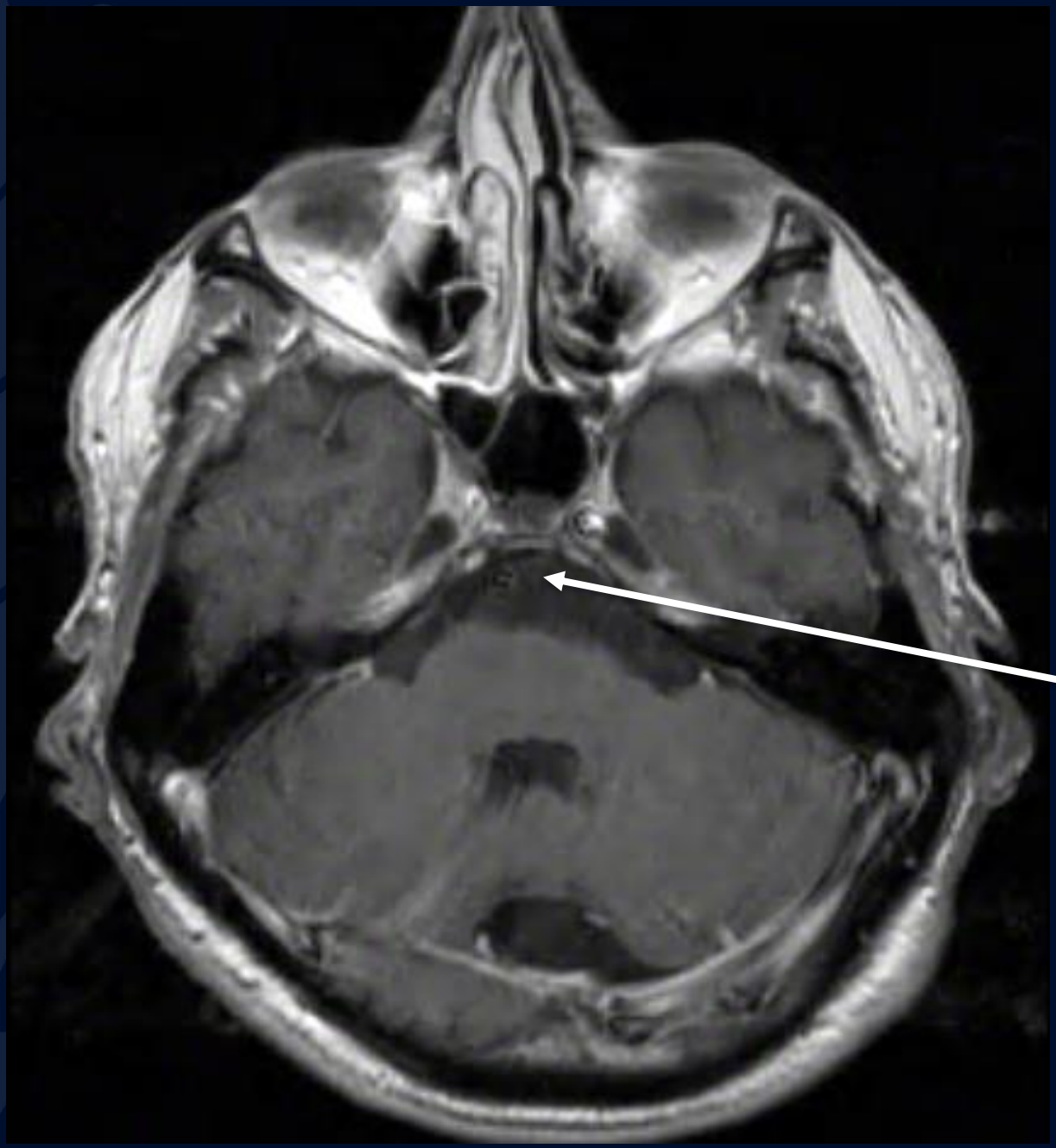

Axial T1 post-contrast

Hypointense

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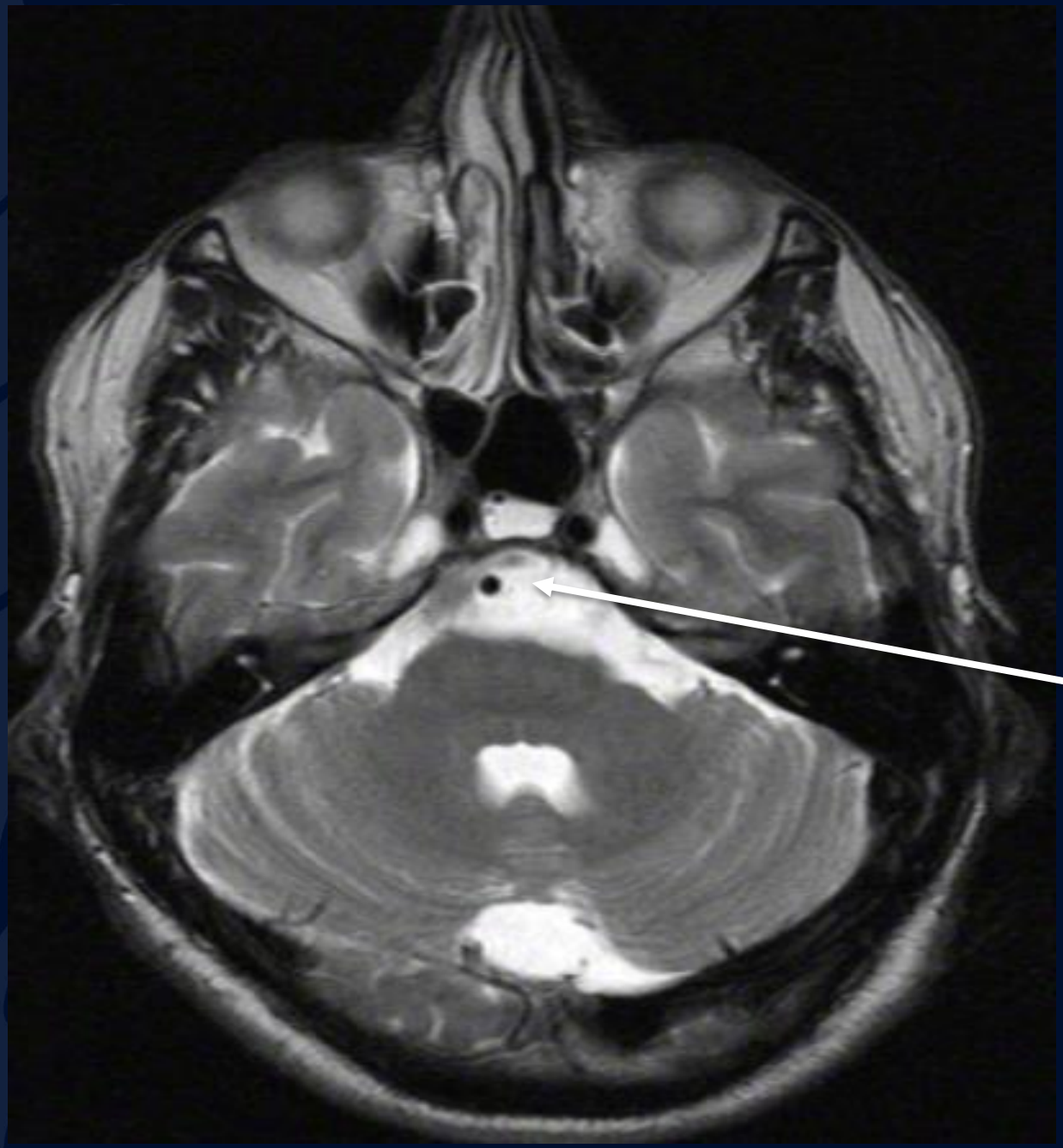

Axial T2

Hyperintense

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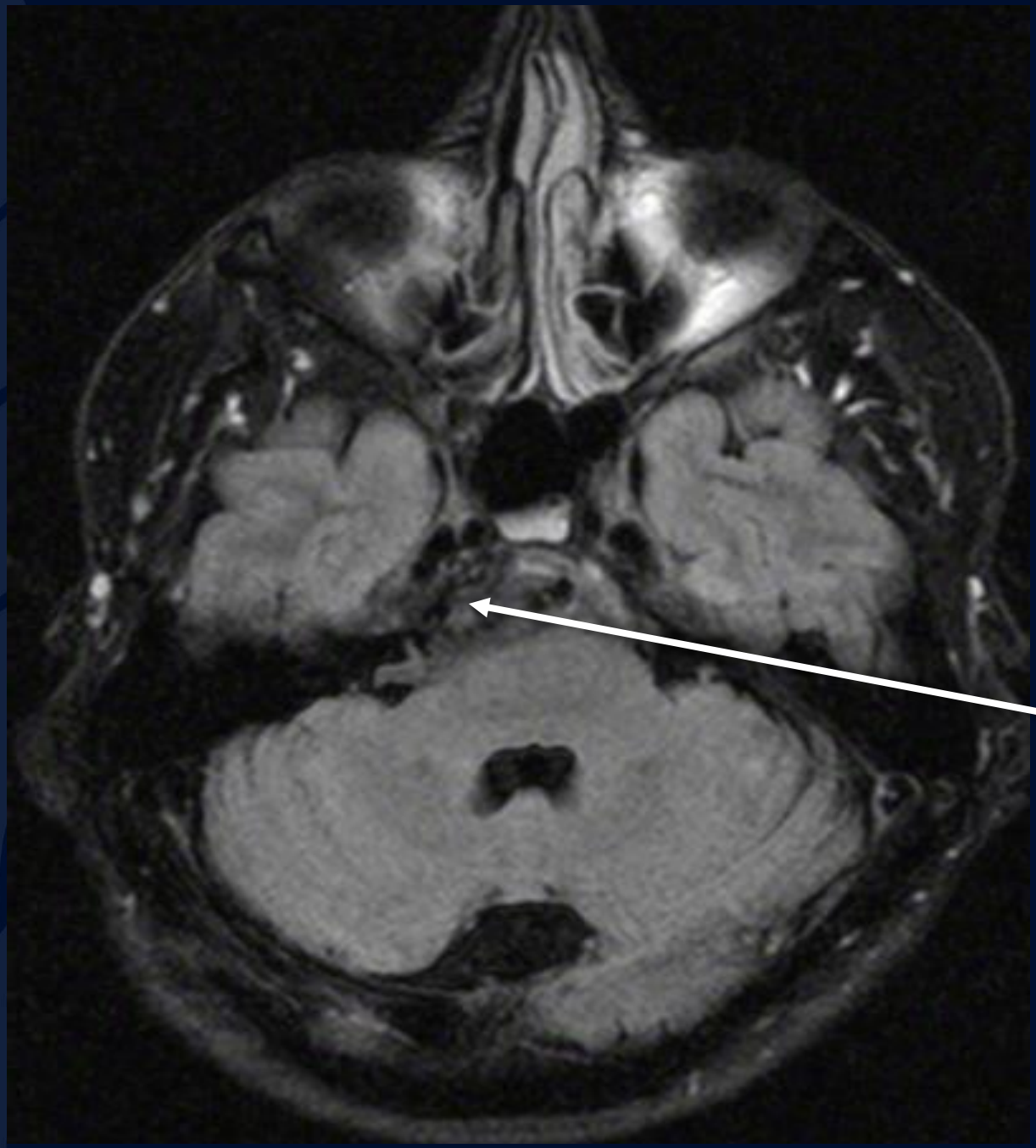

Axial Flair

Dirty signal

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Epidermoid Cysts

Etiology

- Congenital: most common, arise from ectodermal inclusion during neural tube closure
- Acquired: post-surgical or post-traumatic implantation

Pathologically, intracranial epidermoid cysts are identical to the petrous apex and middle ear congenital cholesteatomas.

Location

- Intradural: 90%
  - Cerebellopontine angle: 40-50%
    - Third most common CPA mass, after acoustic schwannomas and meningiomas; accounts for approximately 5-10% of all tumors in this region.
  - Suprasellar cistern: 10-15%
  - Fourth ventricle: ~17%
  - Middle cranial fossa
  - Interhemispheric: < 5%
  - Spinal (rare)
- Extradural: only 10% , most within skull

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Imaging Features

- Epidermoids are often indistinguishable from arachnoid cysts or dilated CSF spaces on many MR sequences, except for DWI/ADC which helps to differentiate them.
- DWI: bright
- ADC: Isointense to brain parenchyma
- Flair: Heterogenous/dirty signal, higher than CSF signal
- T1/T2: Usually isointense to CSF
  - Usually isointense to CSF (65%)
  - Slightly hyperintense (35%) to grey matter
  - Rarely hypointense to grey matter, usually in the setting of the so-called white epidermoid (the term refers to the T1 appearance)
- Thin rim of peripheral enhancement may sometimes be seen
- To differentiate from arachnoid cysts, epidermoid will have abnormal restricted diffusion and T2 shine through.

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Treatment & Prognosis

- Surgical excision is the treatment of choice if symptomatic.
- Complete resection is difficult as not all tissue can be removed, especially from around cranial nerves and vessels. Recurrence is therefore not uncommon, although growth is typically slow and many years can elapse without new symptoms.

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