

68M h/o cranial neuropathies

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Axial Gd T1 volumetric



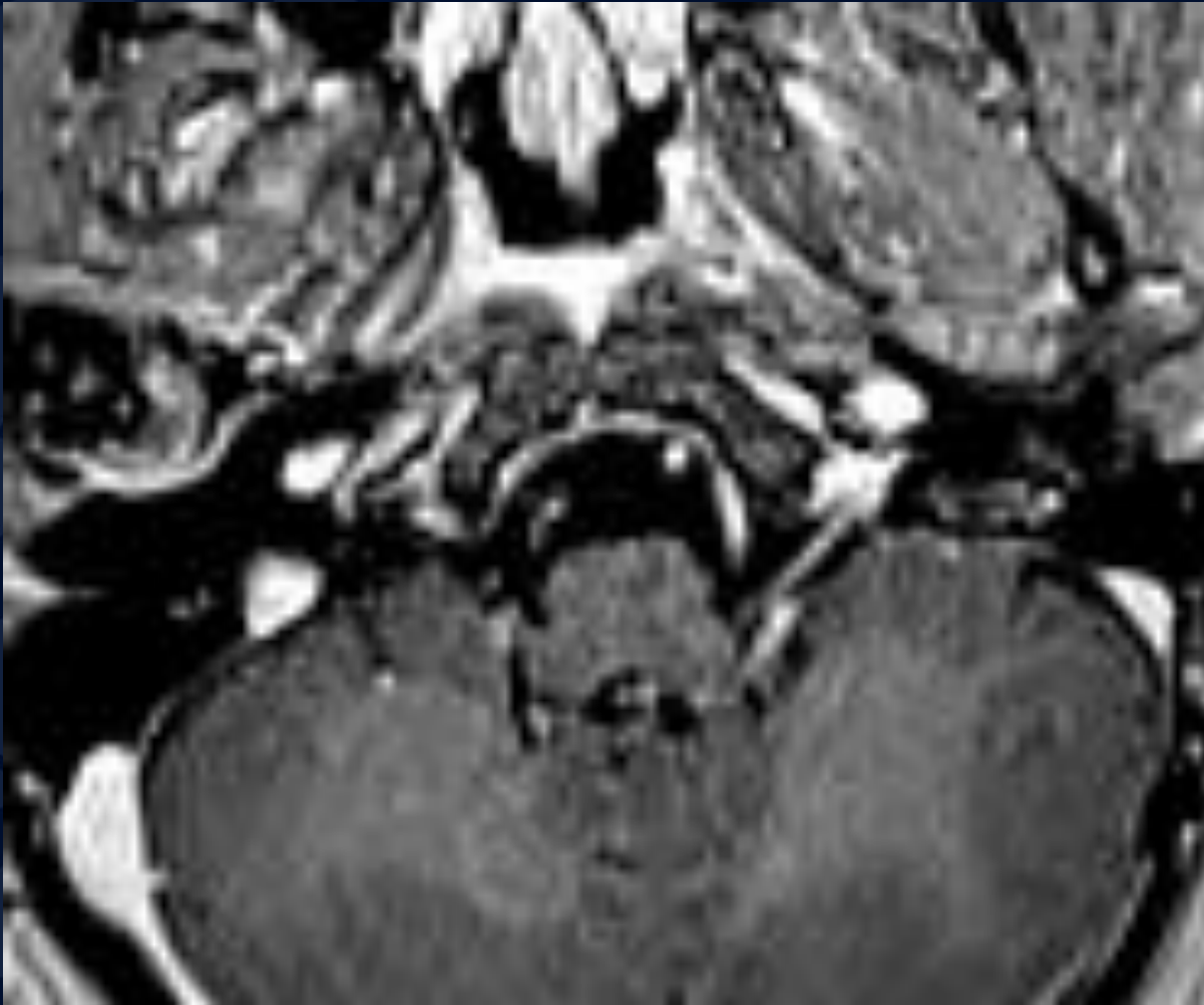
Axial Gd T1 volumetric



Axial Gd T1 volumetric



Axial Gd T1 volumetric



Coronal Gd T1 volumetric



Coronal Gd T1 volumetric





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 background of the slide is a solid dark blue.

Leptomeningeal Involvement With Lymphoma

Patient has a history of Lymphoma
with prior cauda equina involvement

Axial Gd T1 volumetric



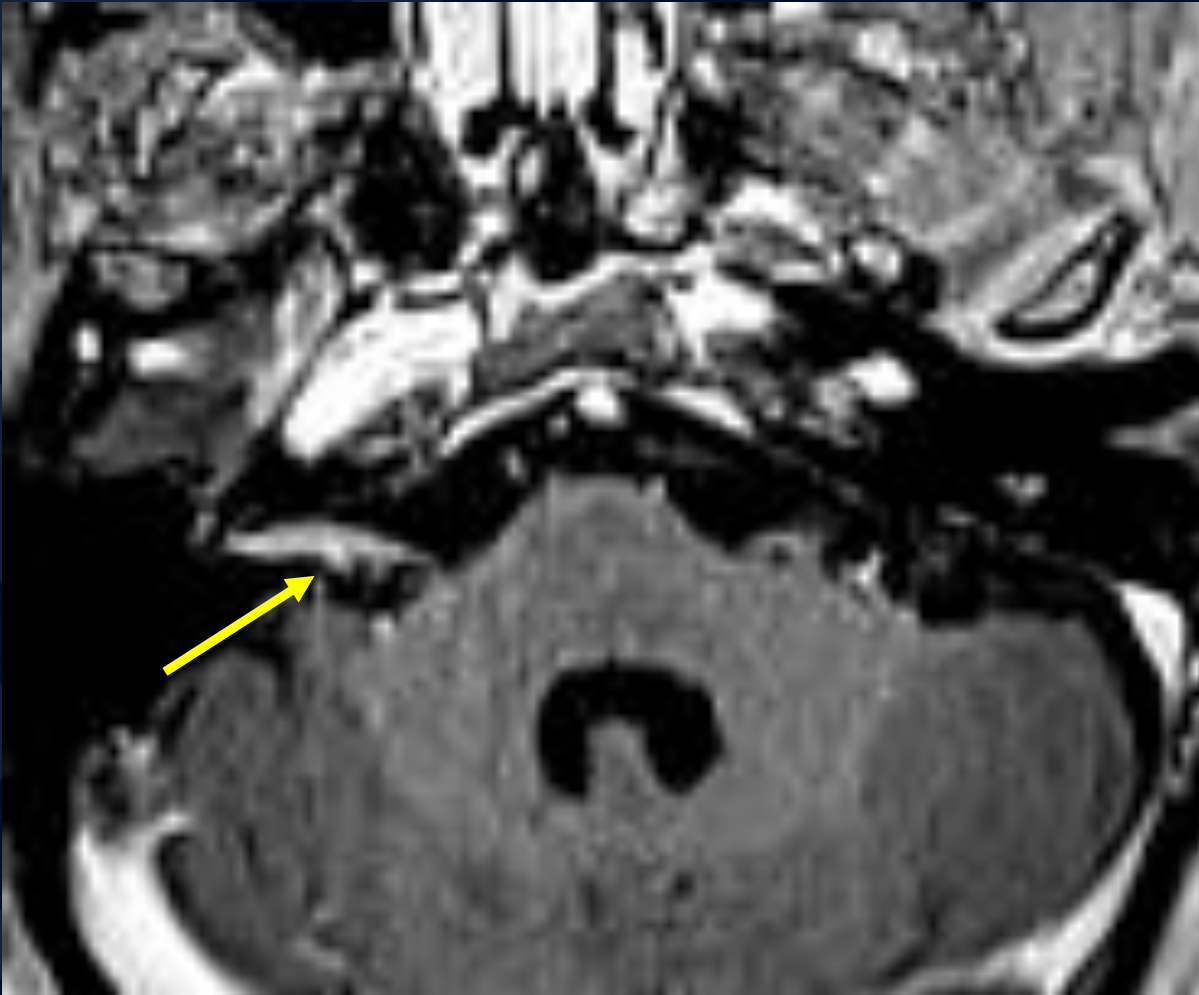
Gadolinium enhancement of the third cranial nerves (arrows) in this axial T1 MRI is highly suggestive of lymphomatous involvement

Axial Gd T1 volumetric



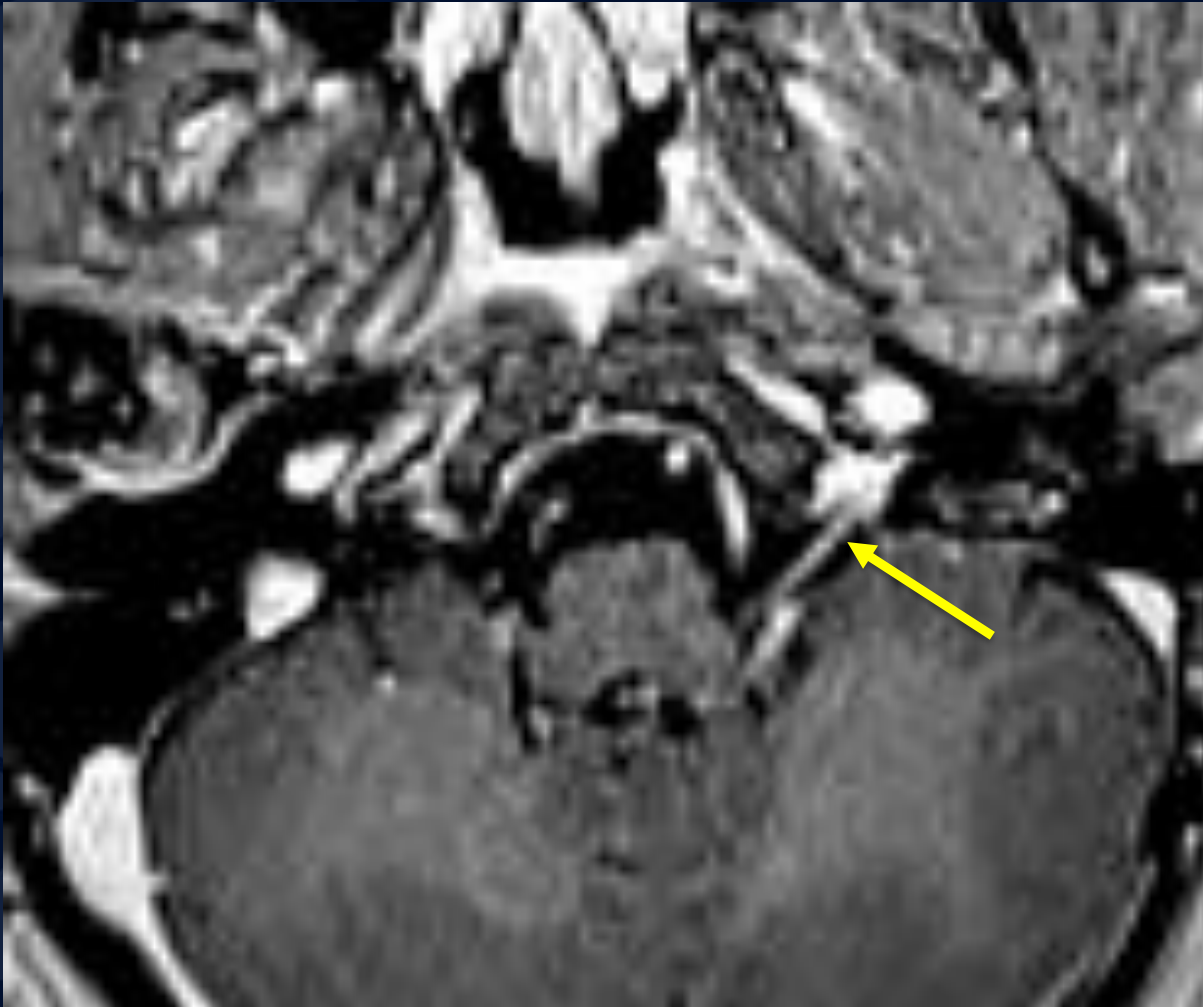
Enhancement
of the
trigeminal
nerves (CN V)
bilaterally

Axial Gd T1 volumetric



Enhancement of
the right
vestibulocochlear
nerve (CN VIII)

Axial Gd T1 volumetric



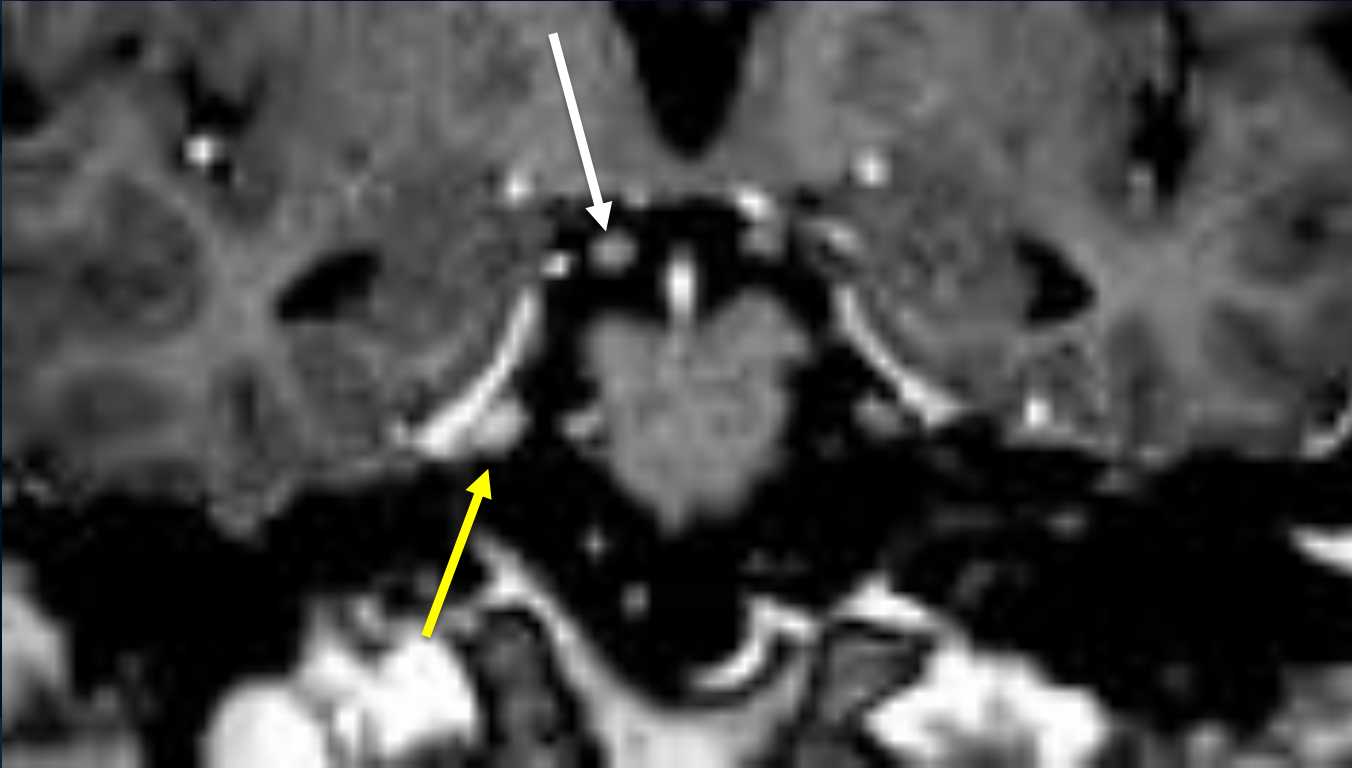
Enhancement
of the left 9th or
10th cranial
nerve

Coronal Gd T1 volumetric



- Yellow arrow: Enhancement of the right trigeminal nerve (CN V) suggestive of lymphomatous involvement
- White arrow: Left trigeminal nerve with no gadolinium enhancement

Coronal Gd T1 volumetric



- Yellow arrow: Gad enhancement of the right trigeminal nerve (CN V)
- White arrow: Mild enhancement can be seen in the right oculomotor nerve (CN III)

Leptomeningeal involvement of Lymphoma

- Most common nervous system complication of systemic Non-Hodgkin Lymphoma (6-8%)
 - Less common nervous system manifestations include parenchymal brain involvement, intramedullary spinal dissemination
- Clinical presentation of the leptomeningeal involvement
 - CN deficits, radicular pain, neck pain, mental status changes, headache, focal weakness or sensory changes
 - CN palsy is one the most common findings, developing in up to 80% of patients with CNS involvement
 - One or several cranial nerves may be affected. Most commonly affected cranial nerves: II, III, V, VI, and VII

Leptomeningeal involvement of Lymphoma

- **Diagnosis**
 - Gadolinium-enhanced MRI is the most sensitive imaging technique for detection of CNS involvement
 - Enhancement and enlargement of one or more cranial nerves due to tumor infiltration is extremely suggestive of leptomeningeal metastasis
 - *CSF analysis*: High opening pressure, low glucose, high protein, lymphocytic pleocytosis, positive cytology and flow cytometry
- **Treatment**
 - Chemotherapy: High dose IV, intrathecal (IT)
 - Radiation therapy
 - High dose steroids

References

1. Baehring, JM, Hochberg FH. Clinical presentation and diagnosis of secondary central nervous system lymphoma. In: UpToDate, Post, TW (Ed), UpToDate, Waltham, MA 2020
2. Mead GM, Kennedy P, Smith JL, Thompson J, Macbeth FR, Ryall RD, Williams CJ, Whitehouse JM. Involvement of the central nervous system by non-Hodgkin's lymphoma in adults. A review of 36 cases. Q J Med. 1986 Jul; 60(231):699-714.
3. Yoshida S, Morii K, Watanabe M, Saito T. Characteristic features of malignant lymphoma with central nervous system involvement. Surg Neurol. 2000;53(2):163.
4. Zorlu M, Wolansky L. Leptomeningeal Involvement with Lymphoma. Radiology Online. 2020.