

# 68M h/o cranial neuropathies

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# Axial Gd T1 volumetric



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# Axial Gd T1 volumetric



# Coronal Gd T1 volumetric



# Coronal Gd T1 volumetric





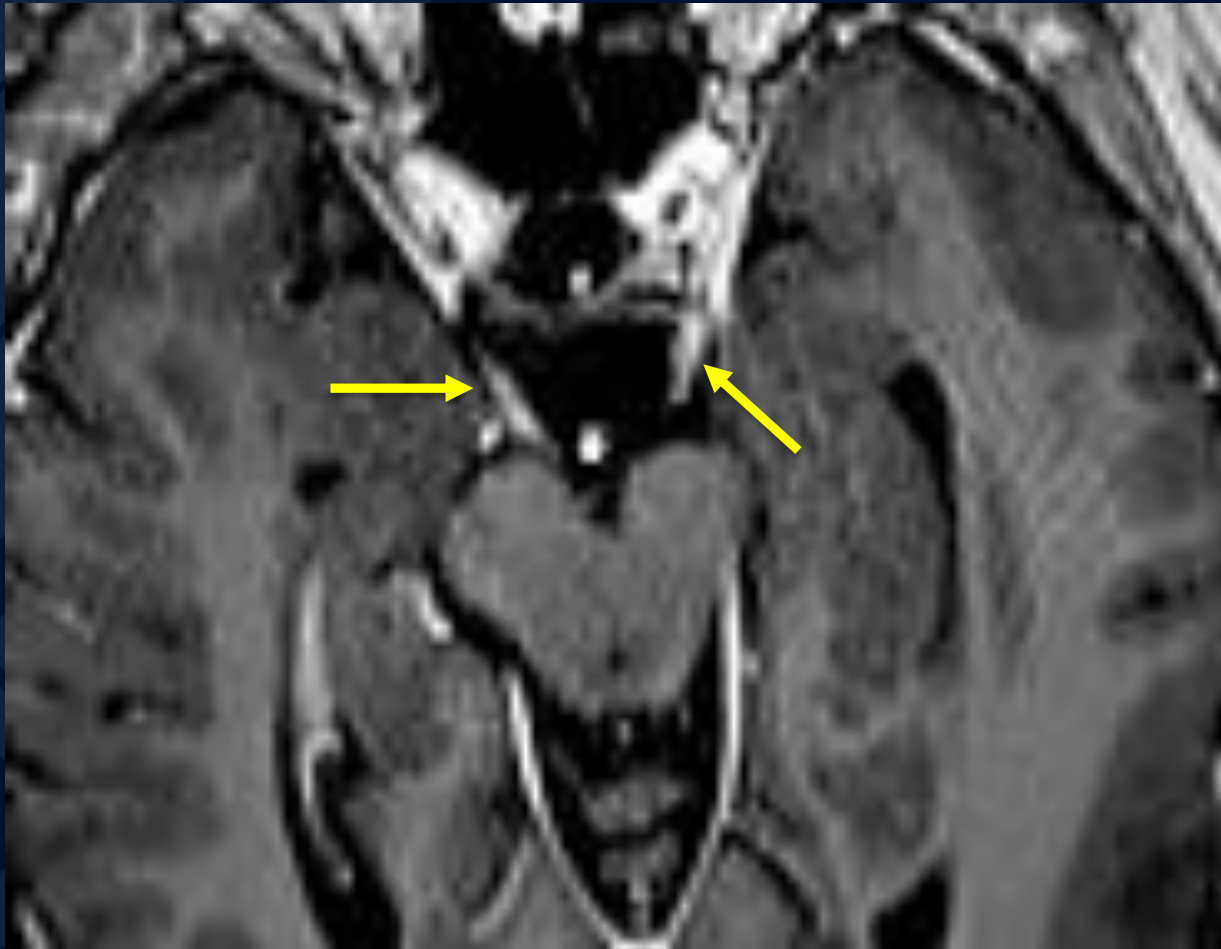


A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching off it. The background of the slide is a solid dark blue.

# Leptomeningeal Involvement With Lymphoma

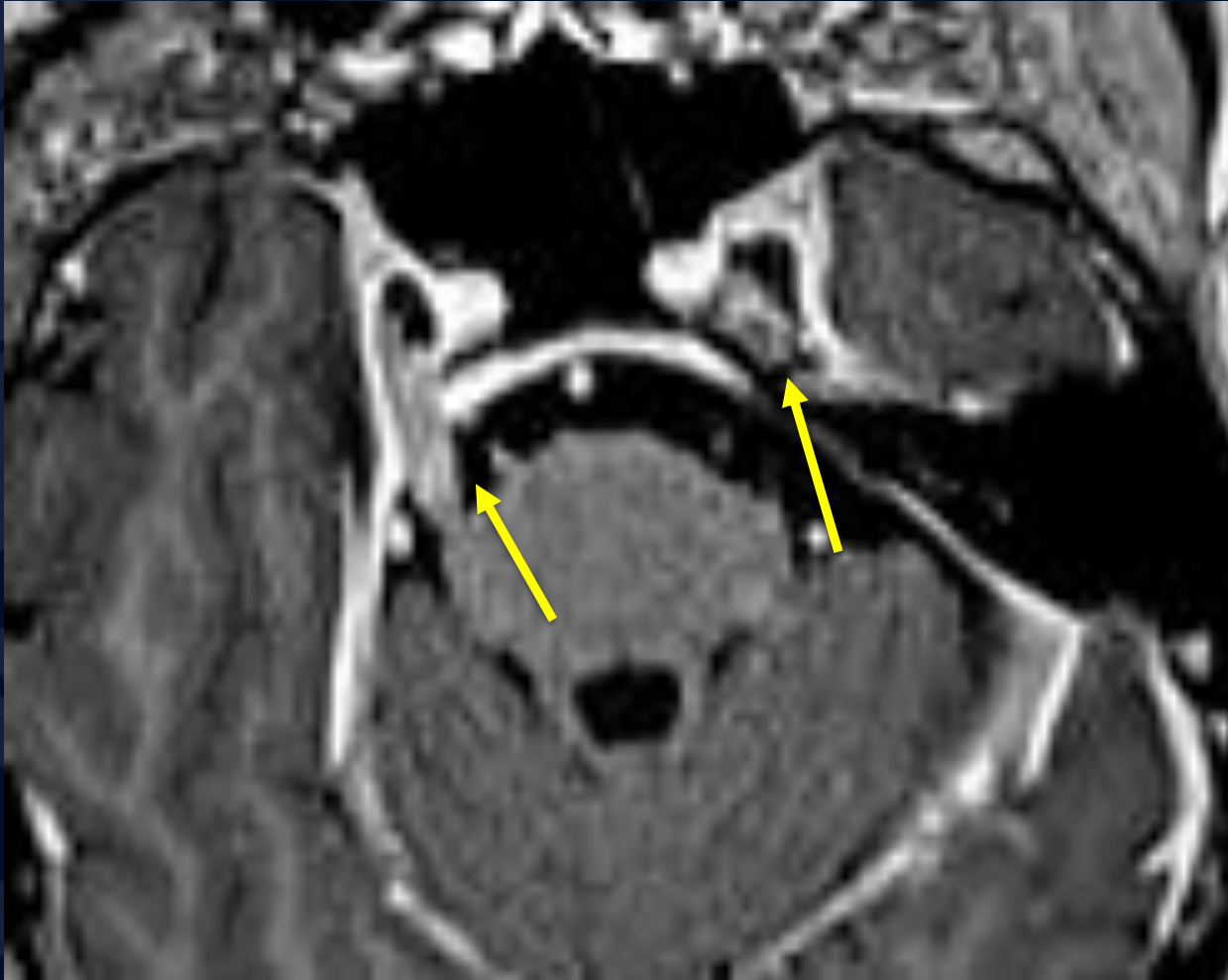
Patient has a history of Lymphoma  
with prior cauda equina involvement

# 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



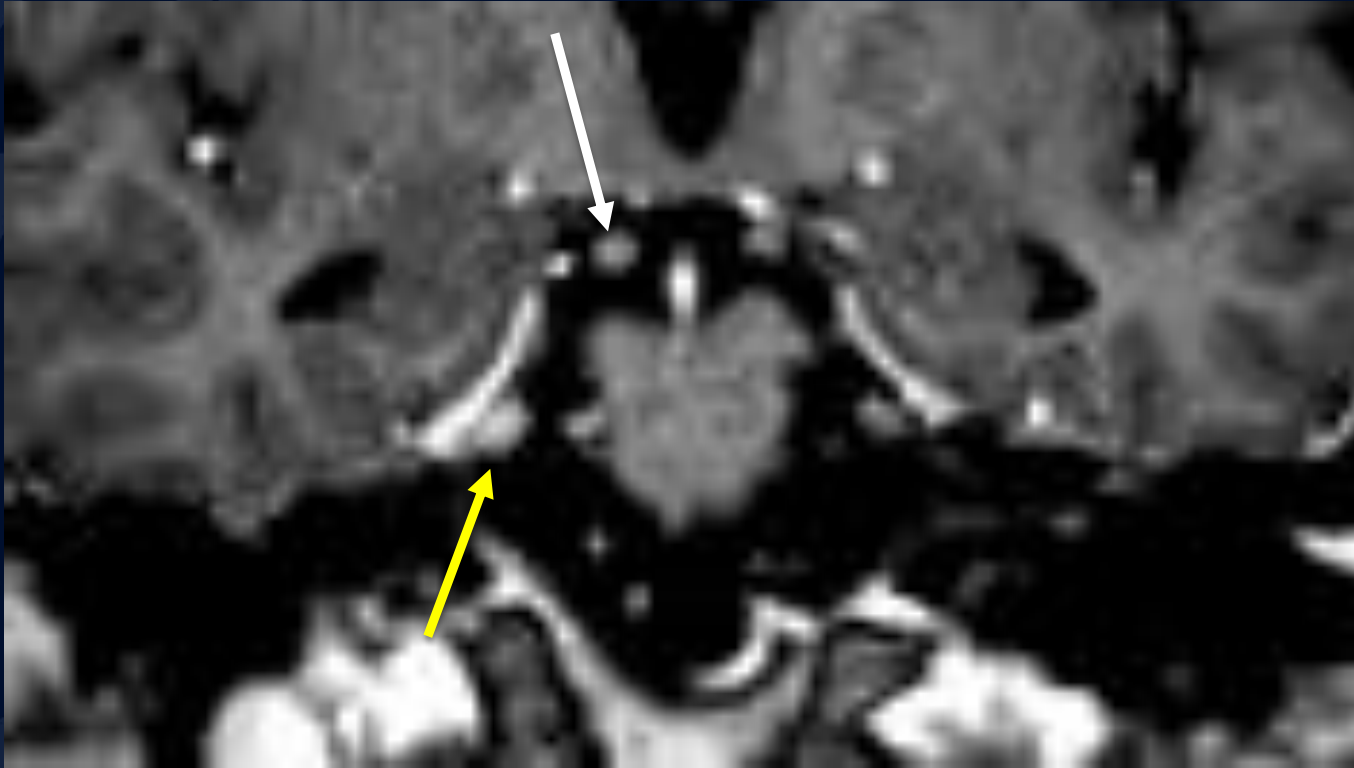
Enhancement  
of the left 9<sup>th</sup> or  
10<sup>th</sup> cranial  
nerve

# 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

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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.