The Modern Face of a Classic Disease: Wernicke Encephalopathy After Gastric Sleeve

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Clinical Presentation

27-year-old female, s/p gastric sleeve procedure 2 month ago

- Presented with subacute, progressive esotropia and horizontal diplopia
- Intractable emesis (> 20 vomiting episodes daily) since surgery
- 80 pounds weight loss
- No fever, headaches, paresthesia, slurred speech, jerking or seizure activity

PMH:

- Pseudotumor cerebri
- Morbid obesity

PSH:

- Gastric sleeve

FH:

- None

SH:

- Former smoker
- Infrequent alcohol consumption

Clinical Presentation

Physical exam:

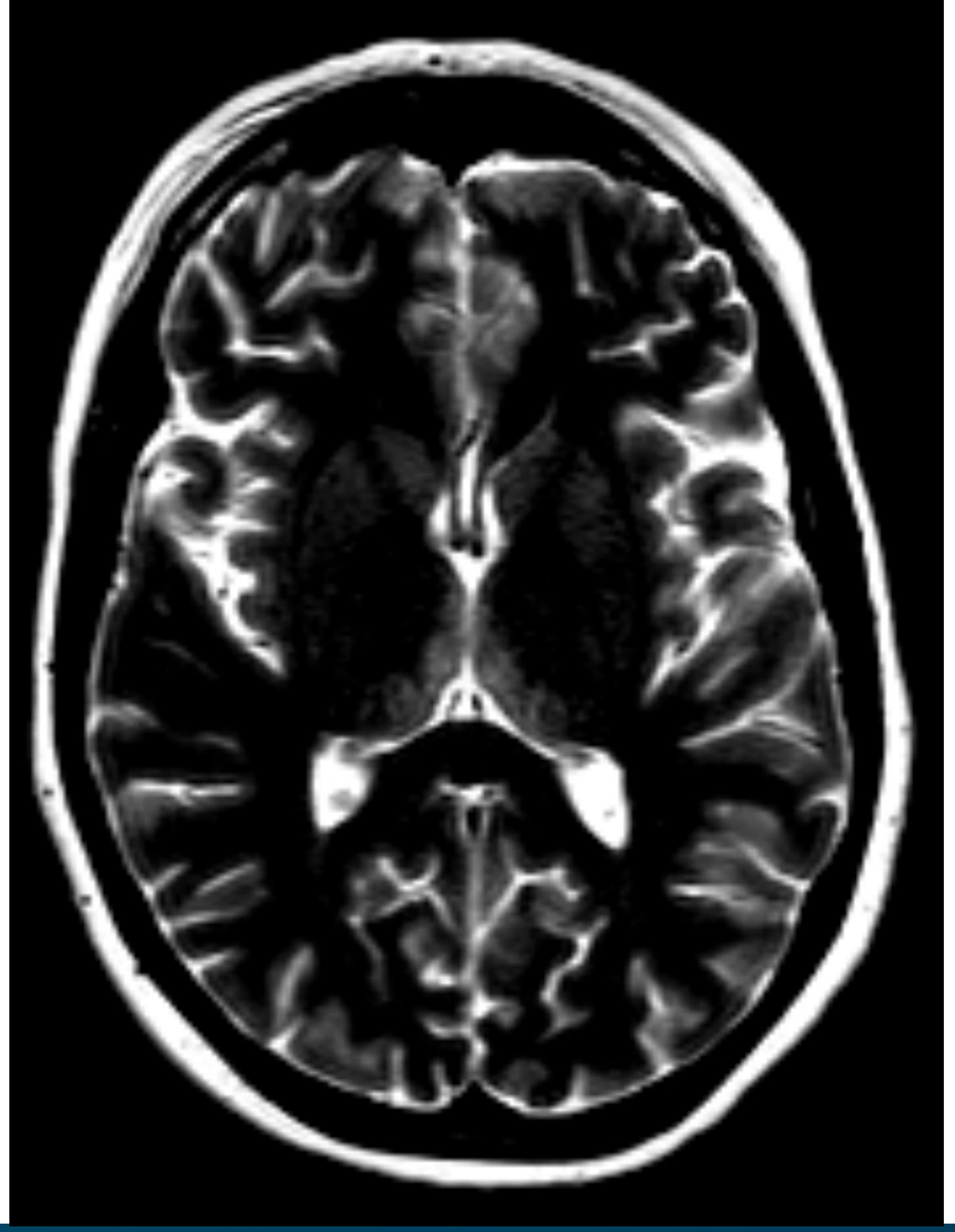
- Afebrile with normal vital signs
- Bilateral 6th nerve palsy
- Gait ataxia
- Intact sensorium and visual acuity remained intact
- Normal higher integrative function
- Lumbar puncture with a normal opening pressure

Lab Result:

- No leukocytosis
- Normal H&H
- Hypomagnesemia
- Hypophosphatemia
- Unremarkable CSF studies
- Infectious work-up negative

Imaging Discussion

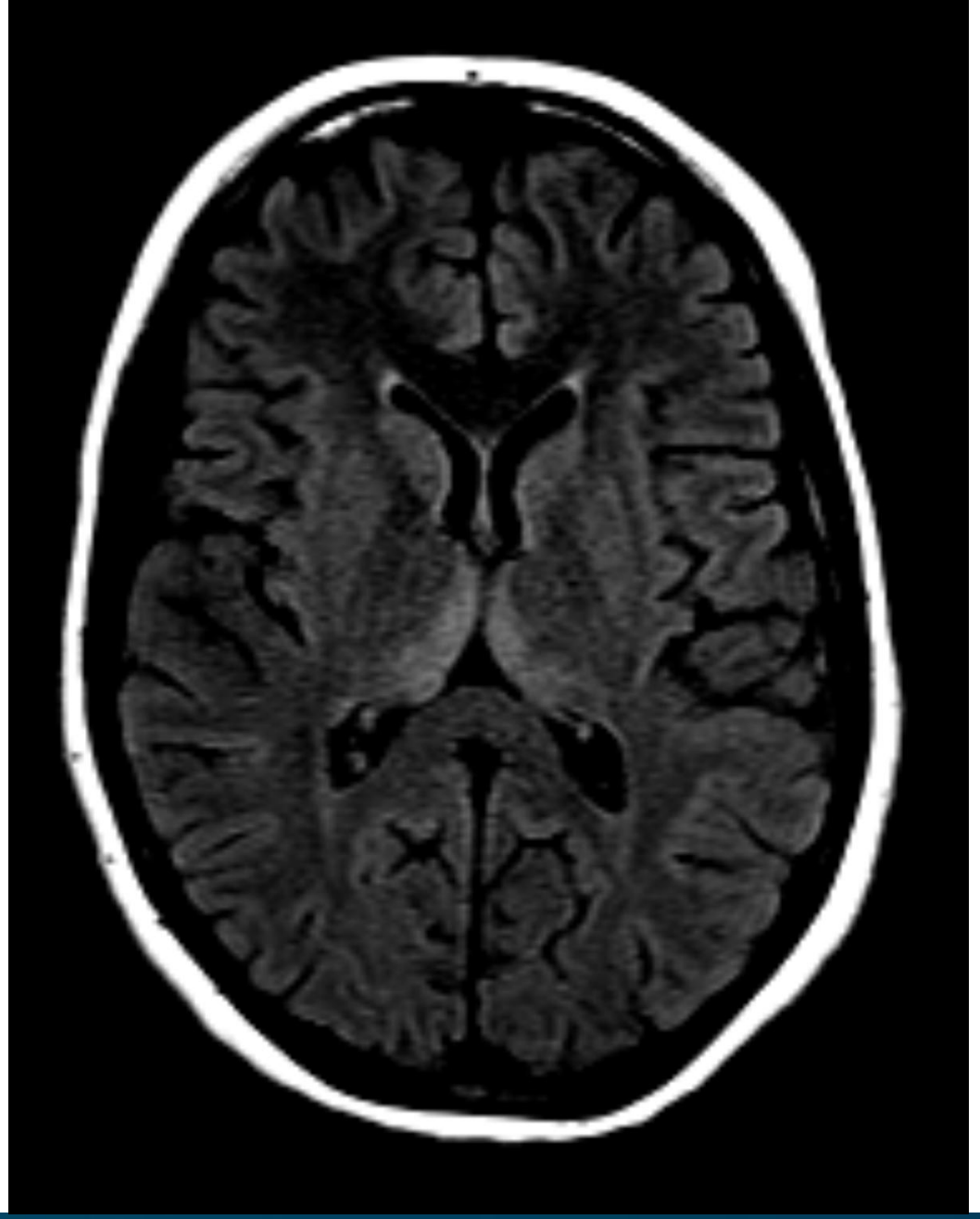
T2-weighted axial image of the brain: Increased T2 signal within the dorsomedial thalami bilaterally



Imaging Discussion

Fluid-attenuated inversion recovery sequence (FLAIR) axial image of the brain:

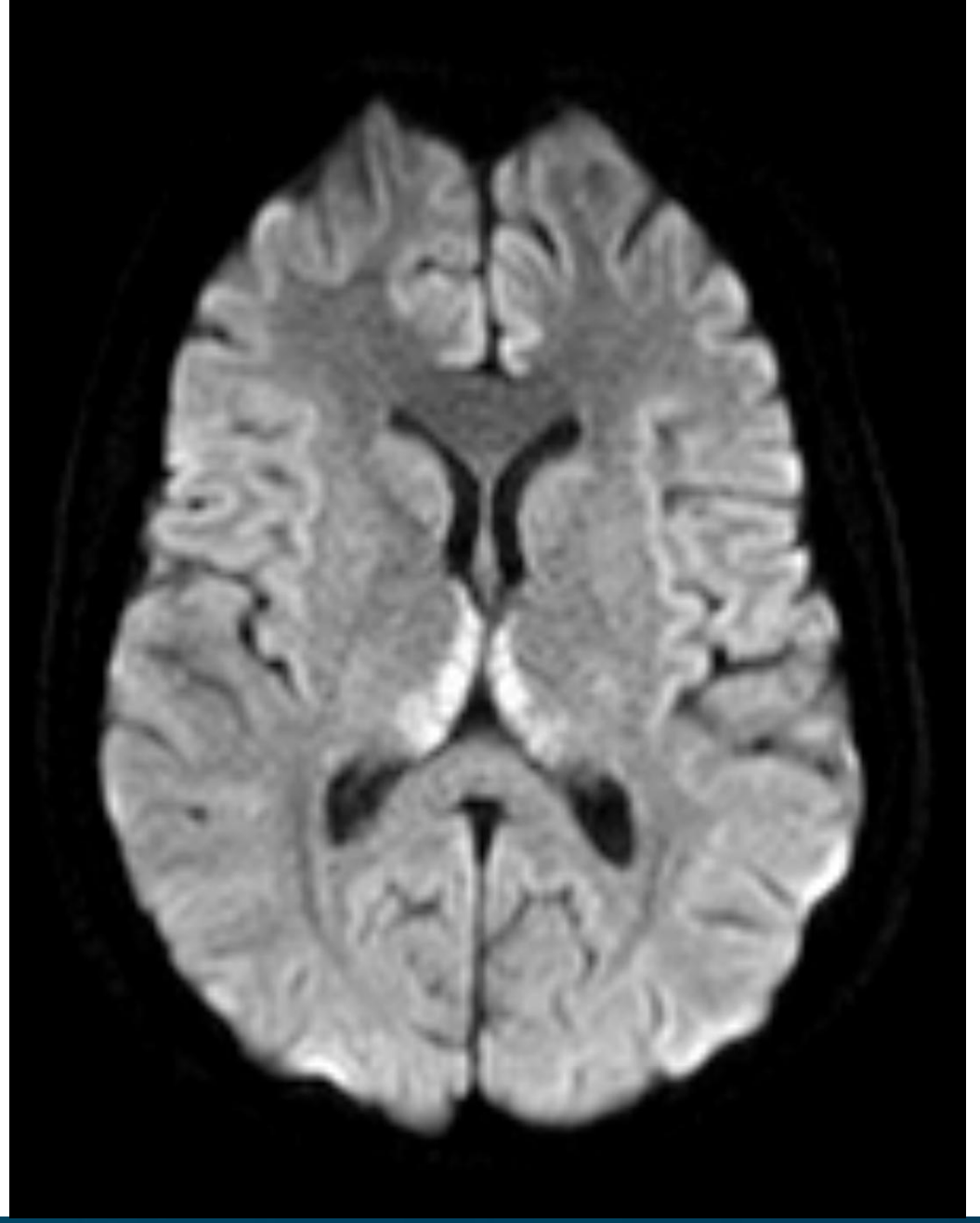
Increased FLAIR signal within the dorsomedial thalami bilaterally



Imaging Discussion

Diffusion-weighted sequences, axial brain:

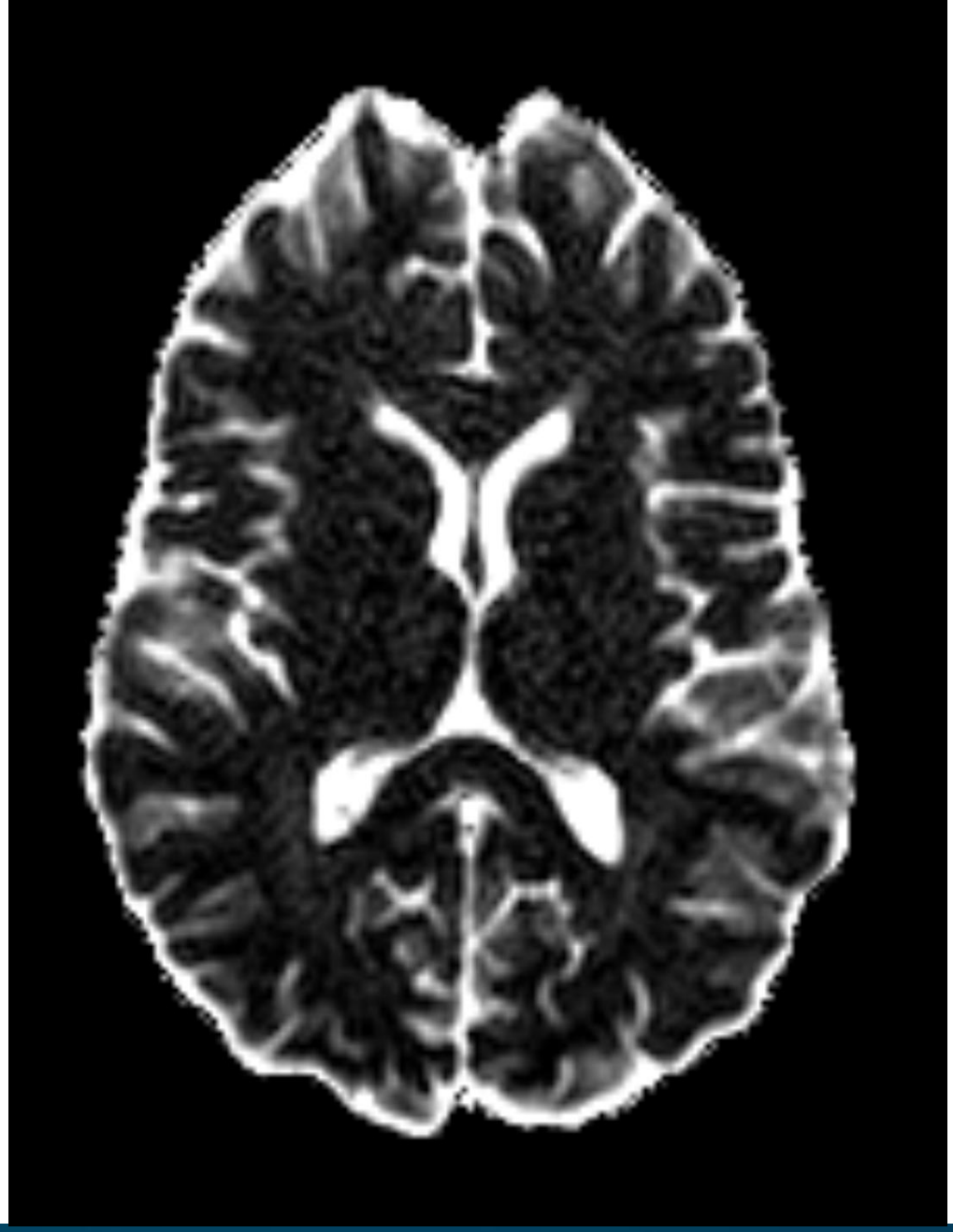
Abnormal restricted diffusivity in the dorsomedial thalami bilaterally



Imaging Discussion

ADC map:

Low signal within the dorsomedial thalami bilaterally corresponding to areas of restricted diffusivity



Management

Clinical and radiological suspicion for Wernicke encephalopathy (WE):

- Empiric, high-dose intravenous thiamine (500 mg administered three times daily)
- Thiamine was administered prior to any glucose-containing fluids to prevent precipitating encephalopathy
- Electrolyte repletion

Outcome

- Dramatic and rapid clinical improvement following thiamine repletion

- Within 48 hours of treatment:
  - Near-complete resolution of her bilateral 6th nerve palsy
  - Significant improvement in her ataxia

- Discharged on a 5-day course of intramuscular thiamine

Take-Home Points

1. **Suspect WE Beyond Alcoholism:** Bariatric surgery is a major non-alcoholic risk factor for WE. Maintain a high index of suspicion for any bariatric patient with new neurological symptoms. Studies have shown that younger age seems to protect against mental alterations.

2. **Recognize the MRI Signature:** The hallmark finding is symmetric T2 hyperintensity in the medial thalami, mammillary bodies, periaqueductal gray matter, and tectal plate. Diffusion restrictions can be a key early sign.

3. **Treat First, Confirm Later:** WE is a neurological emergency. Treatment with high-dose parenteral thiamine should never be delayed for imaging confirmation. Always replete thiamine before glucose and correct magnesium levels.

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