

The Danger of Weight Loss Medications: A Case of Thiamine Deficiency and Orthostatic Hypotension Induced by GLP-1 Receptor Agonist Therapy

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Introduction

- GLP-1 receptor agonists are increasingly used for weight management and diabetes control
- Adverse effects, including significant nausea and vomiting may be worsened in patients with pre-existing gastrointestinal (GI) conditions
- Non-alcoholic Wernicke's encephalopathy is a rare diagnosis that can present with ataxia, altered mental status, and visual dysfunction¹

Primary Aim

This case highlights the potential complications of GLP-1 receptor agonists in a patient with gastroparesis and the importance of careful monitoring and dosage adjustment

Case History

Medical History

- Hypertension
- Hypothyroidism (post-thyroidectomy)
- GERD
- Gastroparesis
- Eosinophilic esophagitis



Medication

- 6 weeks prior to presentation patient started tirzepatide (Zepbound) for weight loss at dose of 5 mg/week



Symptoms

- Persistent nausea and vomiting
- Confusion
- Hallucinations
- Diplopia
- Syncope



Progression

- Multiple ED visits prior to hospital admission for nausea and vomiting
- Limited compliance with home medications, including levothyroxine

62 y/o Female

Physical Exam & Diagnostics

Physical Exam

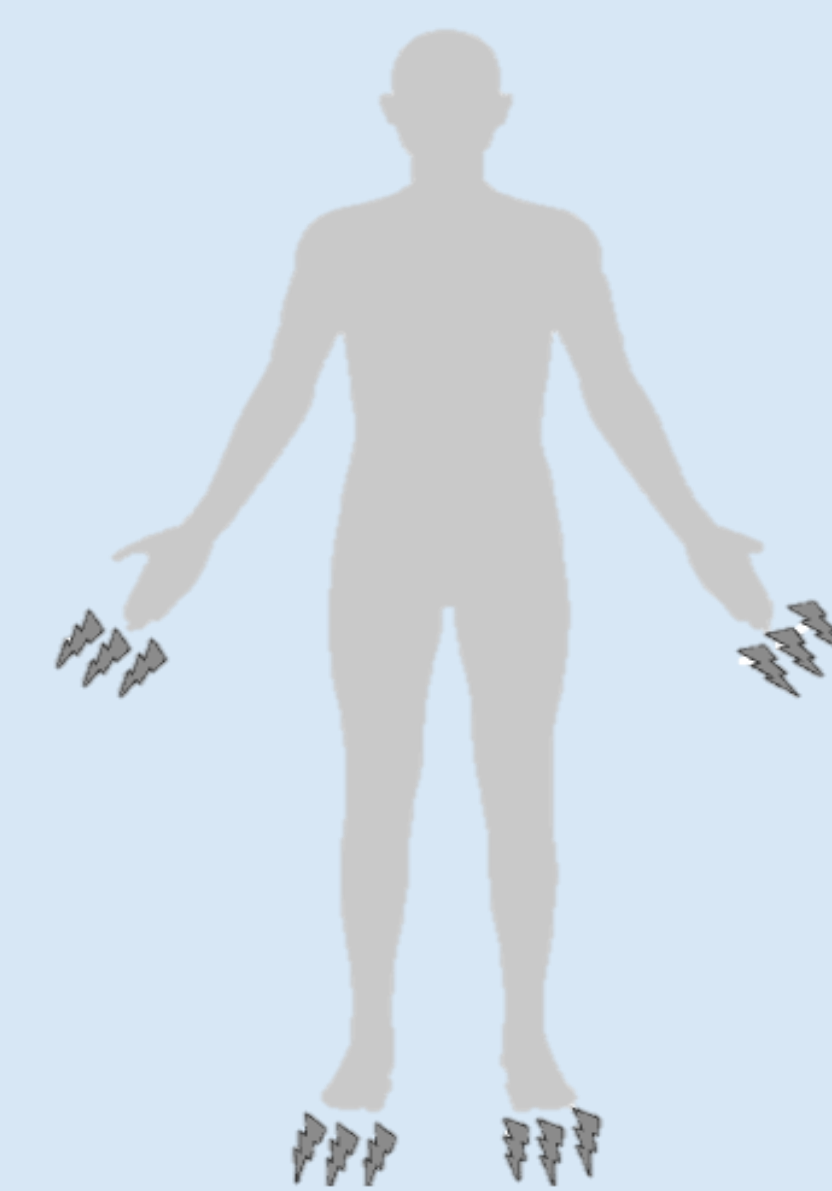
- Neurological: Dysmetria in left upper and lower extremities, impaired short-term memory, confusion
- Sensory: Impaired sensation in upper arms, tingling in bilateral lower extremities
- Orthostatic hypotension with syncopal episodes during therapy

Labs

- Hyponatremia
- Hypokalemia
- Low thiamine (Vitamin B1) level
- Low free T3 (secondary to poor levo-thyroxine intake)
- Normal cortisol levels

Imaging

- CT Head unremarkable
- Brain MRI unremarkable



Clinical Course

Thiamine Deficiency

- Patient was treated with IV thiamine followed by oral thiamine and folate



Orthostatic Hypotension

- TED stockings and abdominal binders
- Midodrine titrated to 7.5 mg twice daily
- Fludrocortisone 0.1 mg daily added

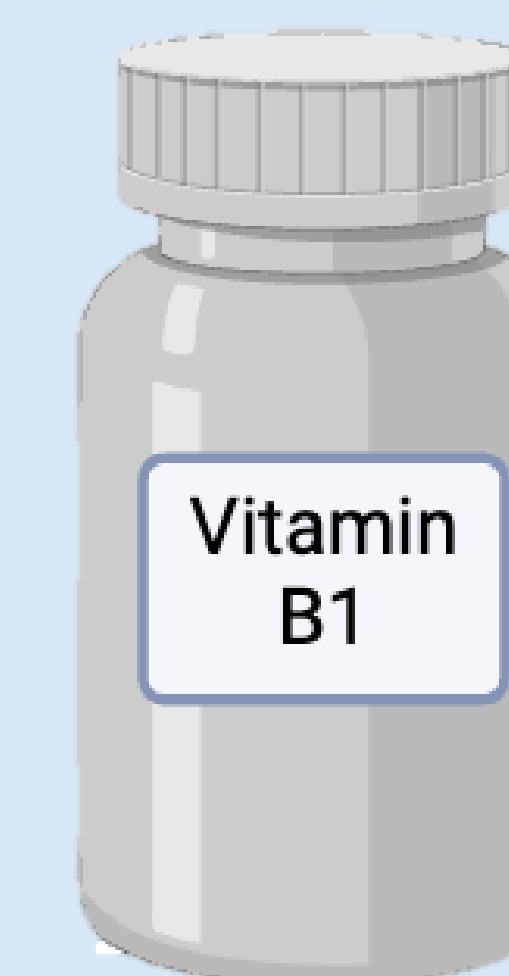


Therapy

- Transitioned from inpatient rehabilitation facility to skilled nursing facility
- Discharged home with home therapy

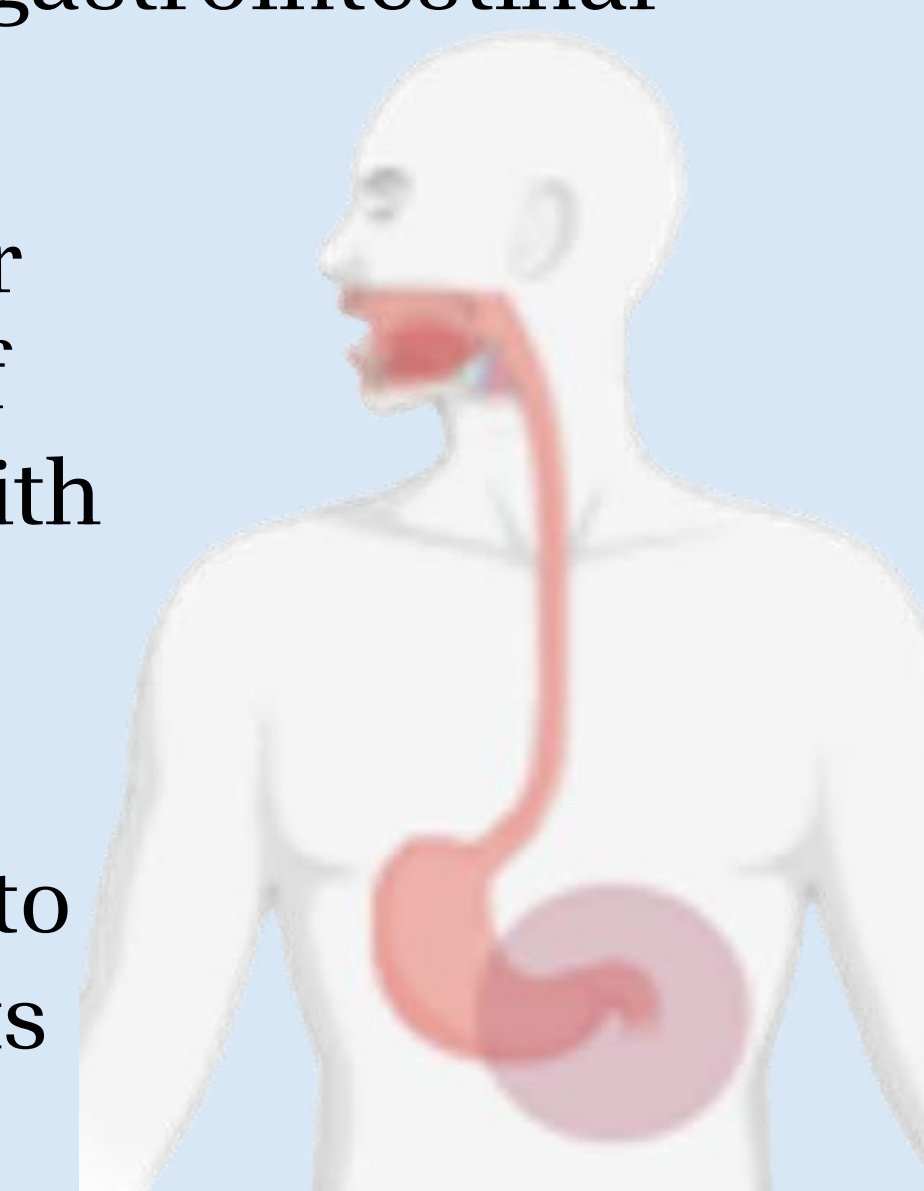


Discussion



- Wernicke's encephalopathy as well as subclinical thiamine deficiency are difficult to diagnose due to nonspecific symptomatology²
- A case of Wernicke's encephalopathy with semaglutide use has been reported in a patient with no history of pre-existing gastrointestinal conditions^{3,4}

- This case emphasizes the need for early recognition and treatment of vitamin deficiencies in patients with prolonged vomiting
- Patient's history of gastroparesis made her particularly vulnerable to the adverse gastrointestinal effects of the medication



Main Finding

This case underscores the importance of considering pre-existing GI conditions and close monitoring for nutritional deficiencies when initiating GLP-1 receptor agonists

Conclusion

- Patients with a history of gastroparesis or other gastrointestinal disorders require careful monitoring when prescribed GLP-1 receptor agonists
- Adverse effects such as nausea and vomiting are common
- This case highlights the importance of appropriate dose adjustments as higher-than-recommended starting doses may exacerbate the side effects
- Vigilant management of nutritional deficiencies is crucial to prevent severe complications such as Wernicke's encephalopathy

References

