An Atypical Presentation of Lower Extremity Weakness

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Introduction

Thiamine, or vitamin B1, is an essential vitamin for several functions, including metabolism, neural signaling, and antioxidant effects. Deficiency in this vitamin can result in several clinical syndromes and can present involving multiple organs, but most notably resulting in neurologic symptoms. Deficiency in this vitamin can occur from poor intake, poor absorption, increased loss, and conditions that increase utilization. This case presentation displays a patient with an atypical presentation of thiamine deficiency.

Work Up

An extensive work up given this presentation was initiated:

- Serum lab work with Vitamin B12 and CK were within normal limits. CRP and ESR are elevated. Thiamine labs were drawn but it takes several days to result.
- MRI imaging of the spine did not show any significant abnormalities.
- A lumbar puncture was performed, which showed normal protein, elevated glucose, no blood, and elevated lymphocytes. All other CSF studies were negative, including negative cultures.
- Autoimmune labs and infectious disease labs were negative.

Discussion

In patients presenting with acute progressive lower extremity weakness, a lumbar puncture should be obtained due to concerns for Guillen-Barre Syndrome. Although, part of the differential should include vitamin deficiencies, and supplementation should be considered while waiting for a complete work-up to result, especially if the patient possesses the appropriate risk factors.

In this patient, bypass surgery resulted in decreased absorption of thiamine. A study has shown that around 30% of patients with bypass surgery have subclinical thiamine deficiency. Therefore, any patient with a history of bypass surgery presenting with neurologic deficits, should be started on appropriate supplementation.

Initial Presentation

- A 36-year-old female with a past medical history of a duodenal switch bypass surgery two months ago presented to the emergency room for progressive lower extremity weakness and paresthesias of one week duration.
- The symptoms began in her pelvic region and progressed downward to her ankles over the week.
- On physical exam, she had 1/5 strength to hip and knee muscle groups, although she maintained 5/5 strength to ankle and foot range of motion. Sensation was noted to be decreased in her legs but was fully intact in her feet. Reflexes in the bilateral lower extremities were absent.
- The patient was fully alert and oriented and had no further neurologic deficits except for her lower extremities.

Hospital Course

- Although an atypical presentation, the patient was started on IVIG due to concerns for Guillen-Barre Syndrome/AIDP. The patient was also started on thiamine while the thiamine lab was pending.
- On day 3 of hospitalization, the patient began having clinical improvement with 3/5 muscle strength. By the end of her IVIG treatment, the patient had significant improvement, and she was transferred to inpatient rehab.
- In rehab, the patient's condition deteriorated with worsening weakness.
- Her thiamine lab had come back at this point, which read as undetectable. She was restarted on thiamine.
- She was found to have a severe thiamine deficiency as a result of her recent duodenal switch bypass surgery resulting in this atypical neurologic presentation.

References

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