Medically Challenging Case

A Beriberi Interesting Complication of Gastrostomies

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1. Introduction

Nutritional neuropathies typically stem from autoimmune conditions, chronic alcohol use, or malabsorption. Thiamine (B1) and B12 deficiencies can follow gastric surgeries, presenting primarily with lower limb deficits.

Clinical Objective

Highlight post-gastric sleeve thiamine deficiency causing severe neuropathic pain, distinct from oncologic gastrectomy cases.

2. Materials & Methods

IRB Declaration

Devoid of patient identifiable information; exempt from IRB review per Cook County Health policy.

Patient Informed Consent

Written informed consent was obtained from the patient for case submission and publication.

3. Case Presentation

Patient Demographics & History

36-year-old female with obesity s/p elective cosmetic gastric sleeve procedure, diagnosed with Vitamin B12 deficiency, dry Beriberi, and severe bilateral lower extremity neuropathy.

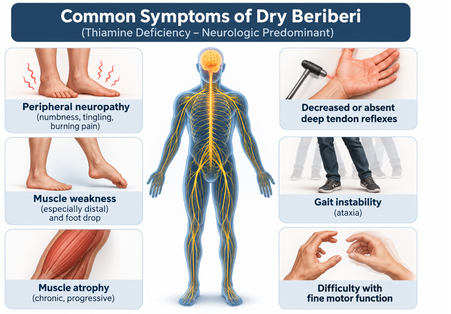
Common Symptoms & Multi-Organ Impact

Neuropathic Deficits

Bilateral foot sensory loss, severe paresthesia, fall episode.

Cognitive & Gait

Gait dysfunction, memory impairment, cognitive decline.



4. Therapeutic Interventions

1. **Nutritional Supplementation**
   Thiamine + B12 repletion. Partial symptom recovery; neuropathic pain persisted.
2. **Standard Neuropathic Meds**
   Duloxetine & pregabalin tried. Minimal response; pregabalin stopped due to side effects.
3. **Ketamine Infusion Therapy**
   Pain relief achieved for 6 full weeks post-infusion.
4. **Neuromodulation Option**
   Spinal Cord Stimulation (SCS) offered; patient declined intervention.

Key Clinical Finding

Ketamine provides substantial relief when oral gabapentinoids/SNRIs fail in metabolic neuropathies.

5. Discussion & Ketamine Utility

Ketamine Mechanism in Neuropathic Pain

Sub-anesthetic IV Ketamine acts as an **NMDA receptor antagonist**, reversing central sensitization and resetting dorsal horn wind-up phenomena in refractory neuropathies.

- **Refractory Rescue Option:** May be effective when standard first-line oral regimens (SNRIs, gabapentinoids) fail or cause intolerable adverse effects.
- **Sustained Analgesic Effect:** Can provide several weeks of meaningful pain relief following a single infusion series in metabolic polyneuropathy.
- **Bridging Therapy:** Provides a crucial non-surgical alternative before pursuing invasive options like Spinal Cord Stimulation (SCS).
- **Surgical Context:** Post-gastrectomy thiamine neuropathy occurs anywhere from **2 months – 39 years** post procedure due to duodenal/proximal jejunal bypass.

Key References

1. Hu Y, et al. Vit B12 deficiency after gastrectomy. *Ann Surg.* 2013;258(6):970-5.
2. Tsao WC, et al. Non-alcoholic Wernicke's & polyneuropathy post-gastrectomy. *Metab Brain Dis.* 2017;32(5):1649-57.
3. Bahardoust M, et al. Vit B12 deficiency meta-analysis. *Eur J Cancer Prev.* 2024;33(3):208-16.