The Unusual Culprit: A Rare Case of Severe Anemia Secondary to Hypocupremia

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Rare etiology of dietary deficiency is more common in the elderly

INTRODUCTION:

- Rare due to low daily requirements [1].
- Pancytopenia, neuropathy, cognitive decline [2,3].

CASE DESCRIPTION:

- 84-year-old female with atrial fibrillation
- One-month history of worsening fatigue, weakness and dyspnea.
- Malnourished, pale with labs as in table 1
- Endoscopic studies were unremarkable for bleeding.
- History of denture use: Test for zinc and copper levels

TREATMENT: High dose oral iron for 2 weeks. IV copper gluconate and discharged on oral formulations.

RESULTS:

- Hemoglobin: 12-15 g/dL
- MCV: 80-95 fL
- Platelets: 150-450 x10^3/µL
- WBC: 4.5-11 x10^3/µL
- Ferritin: 15-150 mcg/dL
- Iron: 60-180 mcg/dL
- ceruloplasmin: 16-45 mg/dL

DISCUSSION:

- Rare entity with unknown etiology for deficiency [3,5].
- Neurological symptoms lead to evaluation.

- Our patient:
  - Low copper diet and absorption,
  - Low serum copper and ceruloplasmin levels
  - Responsiveness to oral supplementation

- Diet-induced hypocupremia: Rarely reported. More prevalent than thought, especially in elderly.
  - Treatment: Copper supplementation. Remove any identifiable offending/precipitating agent.
  - Treatment protocol is not well established. [2,3]

- Evaluate uncommon causes prior to invasive testing.

<table>
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<th>DESCRIPTION</th>
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<th>DAY 0</th>
<th>2 WEEKS</th>
<th>6 WEEKS</th>
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<td>8.5</td>
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<tr>
<td>MCV</td>
<td>80-95</td>
<td>111.5</td>
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<td>Platelets</td>
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<tr>
<td>WBC</td>
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<tr>
<td>Ferritin</td>
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</table>

NP: Not performed: REF: Reference values

Figure 1: Risk factors [4]: Enteropathy, Adhesive Dentures, Gastrointestinal surgeries

References: