An Unusual Presentation of Pernicious Anemia: Hemolysis

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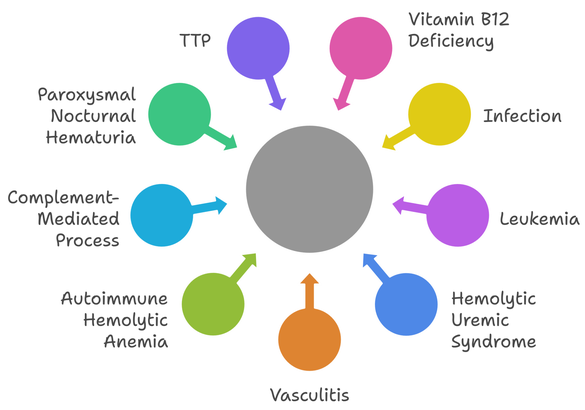
Introduction

Vitamin B12/Cobalamin deficiency classically presents with neuropsychiatric symptoms from dietary insufficiency, nitrous oxide, or malabsorption. A high clinical suspicion is needed for rare presentations that mimic emergencies.

Case Presentation

- 43yM with HTN & asthma
- CC: 2 weeks lightheadedness, vomiting/diarrhea
- HPI: weeks of abdominal pain, fatigue, & exertional dyspnea; a year of intermittent fevers, anorexia, & unintended weight loss; years of epistaxis. No numbness/weakness, autoimmune history, prior surgeries, diet restrictions, smoking, alcohol, or drug use. CBC 6 years ago wnl.
- T 101 F, HR 125 bpm. Exam: pallor.
- Labs: Hgb 3.9, MCV 111.7, platelets 25k; LDH 4756, haptoglobin <8, indirect bilirubin 1.6, Coombs negative; vitamin B12 < 148 (reference 213-816 pg/mL)
- RUQ US: large liver 19.3 cm. CAP CTA: hepatic steatosis, large spleen 17.2 cm, prominent mesenteric lymph nodes.
- ED tx: IV antibiotics, vitamin B12 1g IM, 3u pRBC
- Admitted for severe non-immune-mediated hemolytic anemia.

Figure 1: Differential Diagnosis



Case Presentation

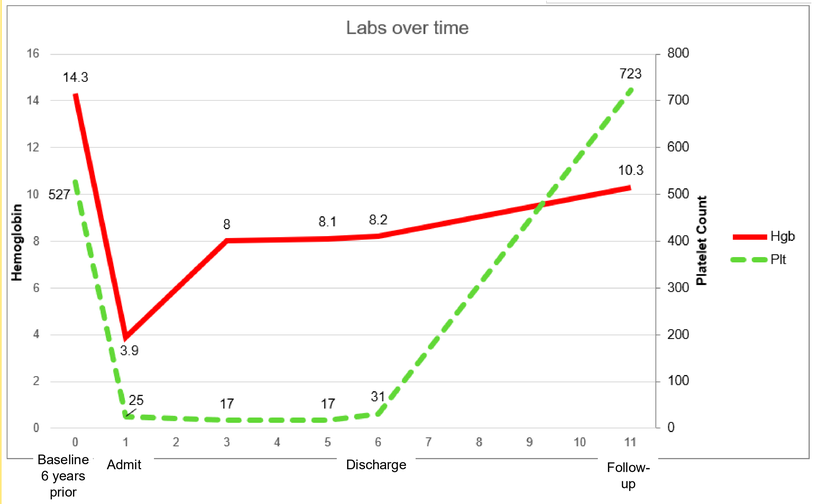


Figure 2: Hemoglobin & platelet values at prior baseline, during admission, & at one-week follow-up.

- Inpatient tx: 5 units pRBCs, plasmapheresis x4 (PLASMIC score 6 so concern for TTP), vitamin B12 1g injections x7. One-week follow-up showed improvement.
- **ADAMTS13 level returned at 56% (mildly low), excluding TTP. His intrinsic factor antibody returned positive. Anti-parietal cell Ab negative.**

Diagnosis: Pernicious Anemia causing pseudo-Thrombotic Microangiopathic Anemia & thrombocytopenia

Outpatient treatment: B12 injections weekly x 4, then monthly, per guidelines.[1]

Discussion

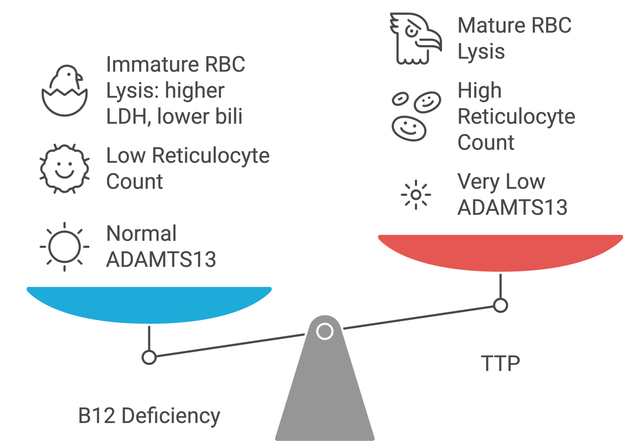


Figure 3: Distinguishing B12 Deficiency from TTP

- Unusual for gastrointestinal presentation (not neuropsychiatric) and the severity of anemia & thrombocytopenia.
  - Andres et al's observational cohort study of 201 B12-deficient patients had a mean Hgb of 10.3 ± 0.4 g/dl; only 2.5% had pseudo-TMA, 2.5% had severe anemia (Hgb <6), and 1.5% had hemolytic anemia.[2]
  - His hepatosplenomegaly, low fever, and abnormal flow cytometry were also consistent with severe B12 deficiency.
- Fast improvement with B12 supplementation

Conclusion

Maintain a high suspicion for B12 deficiency, as early supplementation can prevent irreversible symptoms.

References

1. Labban, Harrison, et al. "Hemolytic anemia and pancytopenia secondary to vitamin B12 deficiency: Evaluation and clinical significance." *Cureus*, 30 Mar. 2024.

2. Andres, E., et al. "Current hematological findings in cobalamin deficiency. A study of 201 consecutive patients with documented cobalamin deficiency." *Clinical and Laboratory Haematology*, vol. 28, Feb. 2006, pp. 50–56.

3. Chhabra, Natasha, et al. "Cobalamin deficiency causing severe hemolytic anemia: A pernicious presentation." *The American Journal of Medicine*, vol. 128, no. 10, Oct. 2015.

Figure 1 and Figure 3 made using NapkinAI tool.

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