



ALWAYS EXCLUDE THE REVERSIBLES: VITAMIN B12 DEFICIENCY MIMICKING ACUTE LYMPHOMA

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Introduction

- ▶ Vitamin B12 deficiency can cause extensive hematologic and neurological alterations.
- ▶ Dysplastic changes are so profound that they mimic hematological malignancies like lymphoma or leukemia, leading to extensive workup and aggressive treatment measures.

Case

- ▶ 37 year old female without any significant past medical or family history
- ▶ Dull aching abdominal pain for a week
- ▶ Loss of appetite and fatigue for 3 months with profuse sweating, no fever or night sweats
- ▶ History of heavy menses for 6 months.
- ▶ Intentional weight loss of 60 pounds in 6 months.

- ▶ Underwent basic lab workup at PCP concerning for pancytopenia which was new for her and was sent to the hospital for further workup.

Labs and Imaging

- ▶ CBC: Hb 6.6, WBC 3300, Platelet: 78000
- ▶ MCV 105, LDH 3300, Haptoglobin: < 1
- ▶ Smear: Anisopoikilocytosis, tear drop cells, pencil cells, macrocytes, no immature or hypersegmented neutrophils. No blasts or schistocytes.
- ▶ CT chest: Prominent hilar lymph nodes with 9 mm tight paratracheal LN, enlarged epicardial LN 10 mm.
- ▶ CT abdomen: prominent retroperitoneal LN, but not meeting CT size criteria, enlarged spleen 17 cm.

Iron	110	50-170 ug/dl
Ferritin	38	10-291 ug/dl
Vitamin B12	150	220-1000 pg/ml
Folate	8.7	3-16 ng/ml
Methylmalonic acid	1.71	< 0.4 nmol/ml
Homocysteine	6.7	3.7-13.9 mmol/L

Discussion

Rule of medicine is always to rule out reversible causes for any condition.

It is important to recognize that bone marrow biopsy in patients with vitamin B12 deficiency could be misleading, because it may appear to show dysplastic changes mimicking myelodysplastic syndrome or acute leukemia.

Vitamin B12 deficiency should be ruled out in all suspected diagnosis of myelodysplastic syndrome and acute myeloid leukemia in clinically relevant settings.