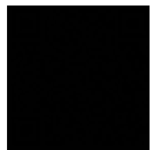
08/25/25 Morning Report with @CPSolvers

"One life, so many dreams" ***Case Presenter****: Vini (@vinibarzon)* ***Case Discussants****: Austin (@RezidentMD) and Alec (@ABRezMed)*

https://clinicalproblemsolving.com/present-a-case/



Scribing (Bayan)

CC: 67M referred for pancytopenia

HPI: asthenia since 1 month, described as sensation of bone "breaking" pain and weakness.

Known hx of thrombocytopenia (90-100k). 1m ago, worsening thrombocytopenia was noted on pre-op labs. Received 1 unit Packed RBC transfusion

ROS: endorses headache and shortness of breath. No episodes of ecchymosis, petechiae

PMH: Schistosomiasis complicated by non-cirrhotic portal HTN and esophageal varices since childhood Gout, hypothyroidism, Inguinal hernia

Meds: propranolol, levothyroxine

Fam Hx:

Social Hx: from brazil. Prolonged exposure to benzene

Health-Related Behaviors: no drug use

Allergies: tramadol

Vitals: T: afebrile **HR:** 95 **BP:** 120/80 **RR:** 18 **Sat:** 92 on RA **BMI:** nl

Exam: Gen: pale, moderately dehydrated, acyanotic

HEENT: anicteric **CV:** nl **Pulm:** nl **Neuro:** GCS 15/15

Abd: spleen palpable 4 cm below costal margin, consistent w/ prior exams

Extremities/skin: no edema or signs of dvt. No arthralgia or tenderness to palpation

Notable Labs & Imaging:

Hematology:

WBC: 910 (<1k) Hgb: 4.4 HCT 12.4 Plt: 13k MCV: 110 RDW 20

Reticulocytes 0.3 PT 15 INR 1.38 (at baseline) fibrinogen 99

Chemistry:

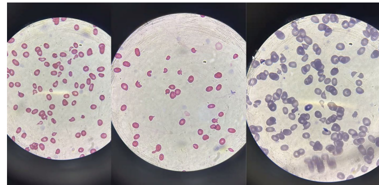
Na: 130 (at baseline) K: 4.2 Cr: 1.3 (at baseline) GFR 60 BUN: Mg: 1.4

AST: 232 ALT: 106 GGT 75 Alk-P: 79 Bili: 2.4 Direct 0.7 indirect 1.7

Albumin: 3.1 LDH: 6000 Iron 51 Ferritin 800 Thyroid function tests nl

Serology: HIV, Hep B, Hep C-ve

Peripheral smear: 2-4 schistocytes, moderate anisocytosis, No immature cells, Neutrophils w/ 4-5 lobes



Prior EGD (few years ago):

Atrophic gastritis

Vitamin B12 low

Dx: Pseudo-TMA 2/2 to Vitamin B12

Patient was treated with vitamin B12. Hemoglobin and reticulocytes improved (0.3 -> 10).

Problem Representation: 67M presenting with shortness of breath and bony pain with profound Pancytopenia

Teaching Points (Anmolpreet):

I] Analysing subjective symptoms: asthenia is a non specific symptom, but we can focus on bone pain: periosteal (hypothyroid), within the bone: problem with the cortex/marrow. - infections/heavy metals/ fracture-localised; Diffuse bone pain: osteomalacia (vitamin D deficiency)

Association with pancytopenia: problem with the marrow!

II] Pancytopenia: *problem with the bone marrow:infiltration or failure vs peripheral destruction!* **4S**: stem cell, systemic ds (lupus), substance (alcohol), splenomegaly, We need to know the baseline levels to ascertain the time course

Deep pancytopenia: get a retic count, peripheral blood smear - blasts/schistocytes/spherocytes

Exertional dyspnea: likely secondary to anemia in this case.

III] Macrocytic anemia + pancytopenia: reticulocytosis(immature cells in blood)- retic count; impaired differentiation of cells in bone marrow - vitamin def - B12, folate (ineffective erythropoiesis); medications; copper def, zinc def, hemolysis-AIHA, liver ds, hypothyroidism, alcohol; MDS; other causes: HIV, Myeloma

IV] Indirect hyperbilirubinemia indicates extravascular hemolysis; haptoglobin and LDH to see intravascular hemolysis

V] Coagulopathy (elevated INR) with decreased fibrinogen: severe liver ds (progressed to cirrhosis), acute vs chronic DIC

Pancytopenia in older patients with DIC physiology : ? APML

VI] Hypersegmented neutrophils: r/o Vitamin B12 deficiency

VII] LDH: destruction of cells; acute vs chronic!

VIII] Tests for vitamin B12 def: can have normal serum levels; get a MMA Dietary history; tests for malabsorption; risk of pernicious anemia with already autoimmune hypothyroid

IX] Better to give empiric Vit B12, before treating aggressively for a ?tumor. Vitamin B12 def → pseudo MAHA / TMA