02/22/25 Morning Report with @CPSolvers

***"One life, so many dreams" Case Presenter**: University of Wisconsin Hospitals & Clinics IM (@uw_IMresidency) **Case Discussants**: Mengyu (@zhoumy07), Rahul (@RahulPottabath1), Ibrahim (@IbrahimOmer_)*

CC: 70M presenting with **SOB for 2 days**

HPI: 4 days ago started feeling increased **mental fogginess,** unsteady on his feet, generalized fatigue, **fever** and chills. Presented to ED -> labs revealed **elevated D-dimer**. Endorses diffuse myalgias and headache. **SOB is more pronounced with walking** the dog, progressive over past few days.

ROS: Baseline normal, fully functional. Denies chest pain, palpitations, orthopnea, and PND.

PMH: HTN
Dyslipidemia

Meds:
HCTZ
Amlodipine
Lisinopril

Fam Hx: none

Soc Hx: no recent sick contacts. Lives with wife in Wisconsin. **Hunting 3 days ago.** Lived on a farm (no exposure since 1970).

Health-Related Behaviors: no smoking Hx, one drink per week. No drug use.

Allergies: none

Vitals: T: 38.5 **BP:** 110/80 **RR:** 32 **HR**: 113 **Sat:** 90% on 2L of O_2
Exam: Gen: awake, alert, fatigued, in mild distress.
HEENT: no conjunctival injection, no jaundice, moist mucous membranes.
Neck: normal, no JVD.
CV: tachycardia, intermittently irregular, normal S1 / S2, no murmurs or rubs.
Pulm: coarse lung sounds bilaterally, increased work of breathing. **Abd:** normal.
Neuro: AOx3, intermittently confused, no gross deficits.
MSK: palpable petechial rash on left lower flank.

Notable Labs & Imaging:
Hematology:
WBC: 4.9 (lymphopenia) **Hgb:** 11.5 (baseline 14)
Plt: 88 Hct: 35 MCV: 82 Haptoglobin: normal.

Chemistry
Na: 144 K: 3.9 **Cr**: 1.4 (baseline 0.9) BUN: 22 Glu: 121 Cl: 117 HCO3: 21
CRP: 21 **ESR**: 83 **LDH**: 514 **AST**: 122 **ALT**: 73 ALP: 140 Bili: 1.2
Lactate 1.2. Troponin 3.4 -> 2.6 after 2 hours. CK normal.

Imaging:
EKG: sinus tachycardia with PVCs, bigeminy pattern ***-> anaplasmosis myocarditis.***
CXR: normal. CTPE: mild pulmonary edema, no PE.

Blood smear: intracytoplasmic aggregates characteristic of ***Anaplasma***.
Anaplasma PCR positive. Endemic fungi, *S. pneumoniae, Legionella* negative.
- > Treated with doxycycline for 21 days with improvement.

Dx: Anaplasmosis.

Problem Representation: Elderly gentleman with a Hx of recent hunting trip presented to ED with acute SOB on exertion and fever. Was found to have elevated D-dimer with bicytopenia.

Teaching Points(SEEME):

Shortness of breath:
- Hypoxia: Focus on cardiopulmonary causes, acid-base status, and anemia.
- Assess patient's ability to walk, eat, and talk.
- Fever and SOB (pneumonia), chest pain and SOB (pulmonary embolism), edema and SOB (heart failure).
- Dyspnea pyramid includes heart, lung parenchyma, diaphragm, and surrounding vessels (ACS, aortic stenosis). COPD and asthma may cause SOB.
- D-dimer is non-specific, elevated by physiological (age, pregnancy, exercise) and pathological causes (embolism, cardiopulmonary diseases).
- Post-infection pericarditis may cause SOB.
- Fever patterns narrow differentials like pulmonary embolism or infective endocarditis.
- Chest X-ray when fevers and SOB are present.
- Sudden SOB on activity, fever, myalgias, and fatigue suggests infectious conditions (viral or tick-borne).
- Acute presentation lowers differentials for autoimmune and malignancies.
- Hunting history and lung findings: Tularemia, Strep. pneumonia, Rickettsia, Legionella, tick-borne illness, and fungal infections.

Focal petechial rash:
Lung findings with petechial rash suggest tick-borne illness (Rocky Mountain Fever), ehrlichiosis, babesiosis, dengue, anaplasmosis). Infective endocarditis may cause a rash.

Non-palpable rash suggests platelet issues. **Palpable rash** is seen in tick-borne illness and vasculitis.

Bicytopenia:
- Bicytopenia and elevated LDH suggest hemolysis.
- Bicytopenia and elevated LDH may also be seen in PJP.
- Bicytopenia and abnormal LFTs suggest tick-borne illness or HLH.
- Anaplasma infection causes thrombocytopenia and transaminitis.
- Lyme disease causes myocarditis and AMS.
- Ixodes transmits Lyme, Anaplasma, Babesia, and co-infection is common.
- **Treat** Ixodes infection with early doxycycline treatment, even when a co-infection is present. Lyme serologies help in making a definitive diagnosis.