8/16/24 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter: Ravi (@) Case Discussants: Reza(@) and Rabih(@)

Title: *"Breathless and baffled"*

Chief Complaint:
49yo male, feeling bad, nervous, shaking, clammy & short of breath. Immediately put on high flow O2

HPI:
4 day history of worsening dyspnea, eventually requiring intubation in the emergency room

On Further hx: Recent holiday: camping (Shenandoah Valley), returned unwell with fevers. Got better in a few days. Then took a trip to Florida and feeling well, with recurrence of cyclic fevers & myalgias

PMH:
1) Anxiety
2) Prior splenectomy (many years after a motor vehicle accident)
3) Prev hospital admission for alcohol withdrawal.

Health-Related Behaviors:
Alcohol use disorder

Vitals: Temp 37.7 C, HR 117, BP 152/101. O2 94% on ventilator. RR: 26

Exam:
Cardiovascular: Regular rhythm. S1, S2 present. No rubs.
Abdo: Soft & non-tender. No distension. Normal bowel sounds
Pulmonary: Basal crackles bilaterally
Dermatologic: Rash on left thigh. Flat and red in appearance

Notable Labs & Imaging:
Hematology:
WCC 14.5, Hb 14, Plat 117k that dropped to 40k
Chemistry:
Lactate 5.6 with anion gap 16. Creat: 1.4, BUN 32. Na 130. Bicarb 17.
Liver enzymes:AST 100, ALP 137, ALT 38, Tbili 2.0, ALP 137
Pro BNP: 1730
Micro: Negative respiratory viral panel.
Imaging:
CXR: Interstitial thickening (query vascular congestion or infection)
CT chest + abdomen: Peripheral infiltrates bilaterally. 4.8cm soft tissue density in left upper quadrant w/ partial *rim calcification, (confirmed as residual spleen)*
Echocardiogram: normal
Smear: 30% parasitemia. Malaria antigen negative. Babesia antigen positive
Serology: Lyme IgG & IgM positive
Final Dx: Babesiosis + Lyme Disease

Problem Representation: 49yo male, prev splenectomy & hx of alcohol-use disorder, now w/severe, acute hypoxemia requiring intubation after preceding travel. CT showed a LUQ mass & peripheral pulmonary infiltrates, with labs showing severe isolated thrombocytopenia & metabolic acidosis, with serology positive for Lyme IgM + IgG, and a blood smear showing Babesia.

Teaching Points ():
1. SOB + catecholamine surge + **hypoxemia: subjective vs. organ failure (at the site of the heart or lungs)**
Anatomic approach: Alveolus (filling collapse, blood, pus, water - crackles) vs. blood vessel (shunting, blocked blood vessel, coagulopathy)
Clues on Exam: Relative silence or disproportionate hemodynamic symptoms (disproportionate hypotension/tachycardia) can point towards a vascular etiology
- For a PE to cause hypoxemia, the hemodynamic imprint will be apparent!
Wave form: should represent systole and diastole to represent accurate measurement
Extrathoracic: Thyrotoxicosis, pheochromocytoma
2. **Excessive sympathetic tone**: Intrinsic (catecholamine surge) or extrinsic (withdrawal of opioids/alcohol or intoxication)
- From the intrinsic side, we can ask if the catecholamine surge is appropriate or inappropriate (pheo, thyrotoxicosis)
Alcohol use disorder/AUD: Are we seeing the consequences of withdrawal (are they partially masked by acute intoxication?) and what are the potential chronic consequences of AUD.
3. **Potential complications of splenectomy:** increases the risk of encapsulated organisms (H. influenzae, N. meningitidis, S. pneumo, capnocytophaga), portal vein thrombosis
4. **Rash**: outside job (contact dermatitis, cellulitis), inside job (thorax)
Deviate from this rule: Depth of the rash (ulcerative, nodular, vascular/livedo reticularis, racemosa, purpuric)
5. **Skin lung diseases**: if you are in south east asia think of melioidosis
6. Thrombocytopenia: TMA, **severe inflammation/sepsis**, HIT, MAHA, AIHA, DIC
- in the context of splenectomy the thrombocytopenia has even more weight!
- normal Hbg: If your body is healthy you can make just as many RBCs as are being destructed.
7. In an inflamed patient with respiratory failure, to decide whether we are dealing with hyperacute heart vs lung disease a BNP is a great clue!
8. Severe cardiac issue that need to be diagnosed within an hour: ACS, rapidly progressive pericardial effusion, **endocarditis**
9. **Preceding illness**: Environmental/zoonotic organisms (thrombocytopenia is a great clue, tension, lungs are untypical) or commensal organism.
- Is the lung involvement a side issue like ARDS or is the pulmonary signature the center of attention (hantavirus, rickettsia, leptospirosis, tularemia, legionella). Doxy or Azithro deficient state?
10. Recent camping - Lyme is usually not causative but predisposes to zoonotic infections. In the absence of a spleen RBCs with their parasites can go to unusual places like the lung causing ARDS in this instance.