12/6/23 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter:Ximena (@ximechm16) ***Case Discussants****: Hans and Zaven (@sargsyanz)*

CC: 68 y/o male with fever and chills that started 12 hours ago

HPI: At the airport boarding a flight to China, he felt tired. During the flight (13 hours) he presented with severe general malaise, fever and intense chills. As soon as he arrived in China he decided to go to the ER.

ROS: Patient reports that around 4 days before the trip presented with fever to his PCP. PCP w/u: ordered a chest x-ray which showed patchy lung opacity. It was dx'd as CAP and treated w/ azithromycin for 3 days.

PMH: HTN well controlled. No surgeries.

Meds: Losartan

Fam Hx: None

Soc Hx: Originally from China, had lived in the US (East coast) for 40 years. Has a dog, does gardening, uses protection for sun, insects.

Health-Related Behaviors: No drugs or tobacco, alcohol occasionally.

Allergies: none.

Vitals: T: 39.4 **HR:** 118 **BP:** 140/65 **RR:** 20 SaO2: 94% RA
Exam:
Gen: Looked tired and sick, evident chills, NAD
HEENT: No lesions on oropharynx, neck is supple.
CV: RRR, no murmur or gallop.
Pulm: breath sounds decreased at the left base
Abd: soft, diffuse tenderness, no hepatomegaly
Neuro: AO x3
Extremities/skin: No rashes or other lesions, no LAD

Notable Labs & Imaging:
Hematology:
WBC: 14k → 18k Hgb: 14 Ht 40% → 31% Plt: 280k →310k
Chemistry:
Na: 134; K:4.1; Cr: 1.06; Albumin: 3.5 → 2.4
AST:160 → 530; ALT:205 → 420; Alk-P:157→ 330; Tbili 2.9 → 7 (predominantly direct) LDH: 650 Haptoglobin: low
Blood culture: negative.
Coagulation tests: normal. UA: normal
Sputum, respiratory viral panel, viral hepatitis, HIV, Lyme, Anaplasma, Q fever, Ehrlichia: all negative
Reticulocyte: 2.3
Imaging:
CXR: lower left lobe patchy opacity
CT head: negative for hemorrhage, mass or infarcts
Evolution: Pt was covered with antibiotics for PNA, fever subsided. Two days later: Abdominal pain, fever again, hypotension and tachycardia. Transferred to the ICU and antibiotic coverage was broadened.
Babesia antibodies: positive Peripheral smear: 9% of erythrocytes containing ring forms
Dx: Babesiosis. (Treat with azithromycin and atovaquone. Recheck the blood smear after treatment to be sure infection was eradicated).

Problem Representation: 68M presenting with fever and chills after being treated with azithromycin for CAP diagnosed after a patchy lung opacity seen on CXR 4 days prior. Labs revealed hemolysis and liver injury.

Teaching Points (Tansu):
Fever: IMADE - acute time course and base rate favors routine commensal pyogenic infections. Look for S&S in the hx to support these causes.
Chills: If rigors →further prioritize infection (rigors creating a fever exuberantly as in sepsis) - Fevers 2/2 other causes get to the point of fever by shivering too, but not that much.
Patchy opacity on X-ray, tx'd w/azithromycin -pt getting worse- (wrong bug, drug, resistance, source control?, atypical causes of lung inflammation + infection, malignant, viral [½ of chest x-ray (+) Pne], etc.) Center of gravity = Lung? → CT preferred. (Too early to consider local complications of Pne).
Gardening hx: Babesia, Ehrlichia, Murine typhus, Rickettsia, systemic fungi, Leptospirosis, Anaplasma, RMSF → ***pne-syndrome + systemic disease elsewhere (vitals, exam, labs are important).***
(+) Pulmonary exam: Does it trick us or confirm the lung being center of gravity? Bacterial burden & inflammation goes away slowly, but if whatever in the lung was an azithromycin sensitive process, it would have improved by now. Imaging of choice at this point: CXR/CT reasonable.
Elevated LFTs: Mixed/hepatocellular pattern. Side effect of azithro? Part of disease process? Other? Screen: Chronic viral heps.
Lung process + liver process: single unifying syndrome or not? Occam's razor and Hickam's dictum. Pretest probability of arthropod borne infectious illnesses: Elevated LFTs (+), thrombocytopenia, leukopenia (-).
Worsening course focused on liver, systemic illness: Lung opacity no longer center of gravity→ bystander to the liver process? Intravascular hemolytic process? // **Hemolysis 2/2 Infections:** Malaria, babesia, C. perfringens, Oroya fever → Empirically tx babesi + lyme (Ixodes), further w/u: through skin exam, PBS, Coombs.
Hgb normal initially- compensated hemolysis. If acute hemolytic process, then would expect higher rtc index, impaired hematopoiesis now? 2/2 infiltration of the BM (hematologic malignancies, granulomatous or mononucleosis infections? Babesiosis? (esp. Babesia has high probability- fitting the epidemiology and clinical syndrome)
Serology and PBS- nailed the dx. **Babesiosis**- azithro + atovaquone (incomplete tx w/ azithro) → gotta recheck the blood smear after treatment to make sure tx worked.