



# 01/12/24 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter: Julia Ding (@\_juliading) Case Discussants: Reza (@DxRxEdu) and Rabih (@rabihmgeha)



**CC:** 61M who presents to ED with malaise, diarrhea and headache

**HPI:** 3 days prior, during flight from Guinea to Atlanta, presented flu like symptoms. This was associated w/ decreased appetite, felt cold, difficulty walking, body aches, imbalance and dizziness. Patient fell and hit head and has had frontal headache since. Also presented diarrhea and dry cough. No N/V. Has never had a similar episode before

**PMH:** DM on metformin HTN on lisinopril

**Meds:** Metformin Lisinopril

**Fam Hx:** Sister: Liver cancer. No SCD  
**Soc Hx:** Born in Guinea. Came to Atlanta when he was 25 years old. 6m prior traveled to Sierra Leone and Senegal 1 year ago. Lived in village where there was livestock but he did not have close contact. Had a tick once. No pets. Drank bottle water. Ate lamb and fresh vegetables from a farmer's market.

**Vitals:** T: 37.7 C/ 99 F HR: 111 BP: 107/73 RR: 20 99%

**Exam:**

**Gen:** AAO x4, no acute distress

**HEENT:** conjunctival icterus. Perioral rash with crusting

**CV:** NRRR, no extra sounds, no peripheral edema

**Pulm:** Clear to auscultation bilaterally

**Abd:** diffuse tenderness in 4 quadrants

**Neuro:** moves 4 extremities

**Extremities/skin:** perioral rash

**Notable Labs & Imaging:**

**Hematology:**

WBC: 9.4 (81% Neutrophils, 14% lymphs, 2.6% monos, 0% eos, 1.8% atypical lymphocytes w/ toxic granulations) Hgb: 12.7 Plt: 73k

**Chemistry:**

Na: 132 K: 4 Cl: 94 HCO3: 21 BUN: 31 Cr: 1.7 (BUN/Cr 18.2)

AG 18, lactate 3.2

Total Bilirubin: 2.8 (DB: 0.9 )AST: 46 ALT: 46

UA: 3-10 RBC, 3+ glucose. Blood cultures: negative 4d Serologies/PCR: HIV negative, Respiratory panel negative (Influenza, RSV, SARS-Cov 2)

LDH 295, Haptoglobin 83

Coags: INR 1.6, PT 18.7, D-dimer 7706, fibrinogen 483

Iron panel: Ferritin 4088, Iron 83, TIBC 208

HbCAb positive , HBsAg neg

Thick/ Thin blood smear: Plasmodium falciparum trophozoite noted

**Imaging:**

CT head: no acute intracranial abnormalities

EKG: nl

**Dx:** Plasmodium falciparum Malaria treated w/ Atovaquone + Proguanil

**Problem Representation:** 61M w/ PMH of DM and HTN presented 3 days after travel to Guinea with headache, malaise and diarrhea. On ED found HR 111, BP 107/73, Icteric with hyperbilirubinemia, elevated liver enzymes and found to have ringed trophozoites on blood smear consistent with Malaria

**Teaching Points (Bettina):**

- When symptoms refer to distant organs, is there a systemic disease involving both organs or is one of them a distractor (referred pain)? Systemic disease causing nonspecific vs. presence of focalities?
  - Identify how bad each organ is affected
- Most alarming is neurologic (is dizziness caused by orthostatic vs. spinal cord issue) so establish respiratory support, volume status
- **Exogenous** (viral, tick-borne, endemic mycoses, mosquito-borne) vs. **endogenous**
  - Exogenous usually cause systemic symptoms
  - Endogenous infections are more morbid when not contained (manifest as bacteremia, fungemia)
  - If vital signs are very abnormal → *S. aureus* bacteremia in DM patient or devastating exogenous infection (malaria)
    - If underwhelming VS. metastatic endogenous infection less likely
- Environmental exposure is crucial (season, travel, immune status)
- **Incubation period**
  - Symptomatic quickly upon return → if acquired in travel, then it has a short incubation period vs. may be locally acquired
- **Hyperbilirubinemia, AKI, and thrombocytopenia** are clues to what infectious process is happening (tropism to marrow, kidney, hepatobiliary)
  - Tick-borne diseases, zoonotic infections, leptospirosis, dengue, Chikungunya, Zika, typhoid
  - **Toxic granulations:** Supporting marker of infections
- Given septic presentation, low threshold to initiate treatment with **ceftriaxone** (typhoid and leptospirosis), **doxycycline** (tick-borne disease), and **smear**
  - Blood culture, thick and thin smear + rapid test for malaria, Leptospira antibodies (IgM, IgG)
  - A single negative smear does not rule out (must be repeated 3x)
- **High ferritin:** EBV, CMV, tick-borne disease, granulomatous diseases
- **Abnormal pigmentation in RBC:** Intraerythrocytic parasite (*Babesia*, malaria, *C. perfringens*, bacilliformis)
  - Maximum SP of all the tests in hemolytic anemia is 80% (low haptoglobin)
  - Average # of cases of malaria in the US has increased, 98.8% imported
  - Climate change has increased the risk of vector-borne diseases
  - Residents who are in endemic places are less likely to get acute malaria because they have that protected immunity vs. those who are returning after a long time and have lost that immunity