

# Episode 13

In this week's episode the CPSers, **Dr. Fatimah Alkhunaiz** presents a clinical unknown to Rabih.

## Problem Representation

A 76-year-old generally healthy man on the East Coast presented in December with a subacute febrile illness characterized by leukopenia/thrombocytopenia, transaminitis, and neurologic abnormalities that improved with doxycycline.

## Schemas

The CPSers schema for the inpatient infectious w/u includes two steps:

- A primary evaluation focuses on the **most common sites** of infection seen in the hospital.
- If this is unrevealing, the secondary evaluation utilizes the *presence* (or *absence*) of **localizing symptoms** to help identify less common infections.

## Diagnosis

The patient continued to be febrile *until* doxycycline was initiated. The ehrlichia PCR was positive for *Anaplasma phagocytophilum*, consistent with a diagnosis of **human granulocytic anaplasmosis!**

## Teaching Points

- When searching for a source of fever, **encephalopathy** does not *necessarily* localize to the CNS and can often be present in extracranial systemic infections, as reviewed in episode 1.
- The clinical manifestations of many tickborne disease are often **nonspecific** and classically include the combination of leukopenia, thrombocytopenia, and fever. Interestingly, **Lyme disease** typically lacks any hematologic changes.
- In evaluating fever of unknown origin, it's helpful to consider the presence of a "doxycycline-deficient state"<sup>1</sup> - as many difficult-to-diagnose (often-zoonotic) infections respond well to this antibiotic.

## Clinical Reasoning Pearl

Early in a case, it can be helpful to create multiple **competing problem representations** (PRs) and see which one ultimately best fits the clinical data.

For example:

Rabih considered different aspects of the epidemiological "context" as he began framing the patient's fever.

As the case progressed, the **outdoor exposure** became increasingly more relevant than his work at the college, and was ultimately incorporated into the final PR.

## References

- 1) Jenkins I, Vinetz J. The devil is in the details. J Hosp Med. 2009 Jul;4(6):382-6.