The Great Imitator Spares No Organ: A Case of Syphilitic Hepatitis in an Immunocompetent Patient

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INTRODUCTION

- Syphilis, infamously known as the "great imitator," is an infectious disease caused by the spirochete *Treponema pallidum*
- While syphilis can affect multiple organ systems, liver involvement is uncommon
- Only 10% of patients with secondary syphilis have abnormal liver enzymes
- Herein we describe the case of an immunocompetent male who was found to have a syphilis-induced acute liver injury

HISTORY AND PHYSICAL

- A 48-year-old male with no medical history presented with a two-week history of dry cough, fever, anorexia, and sore throat
- He initially presented to an outside hospital where he was diagnosed with community-acquired pneumonia and discharged on amoxicillin-clavulanate
- Given poor improvement in symptoms, he presented to our emergency department several days later and noted additional symptoms of headache, blurry vision, and rash
- Examination revealed mild maculopapular rash on his trunk and extremities
- Abdominal examination was unremarkable

LABWORK AND IMAGING

- Acute and chronic liver serology tests were ordered including hepatitis panel, antinuclear antibody panel, anti-mitochondrial antibody panel, anti-smooth muscle antibody, ceruloplasmin, iron studies, and HIV screen
  - Labs were unrevealing except for a positive anti-mitochondrial antibody, 44 units, and anti-nuclear antibodies, titers of 1:160
- Liver ultrasound was unrevealing with normal common bile duct
- Due to the hyperpigmented rash (Figures 1 and 2), infectious diseases recommended additional serologic testing for infectious etiologies
  - Syphilis screen with rapid plasma reagin was reactive with a titer of 1:32
- Given persistent neurological symptoms of headache and vision changes, a lumbar puncture was performed prior to initiation of antibiotic treatment
  - CSF studies revealed a reactive fluorescent treponemal antibody test absorption test
- Ophthalmology evaluated the patient and saw nongranulomatous iritis

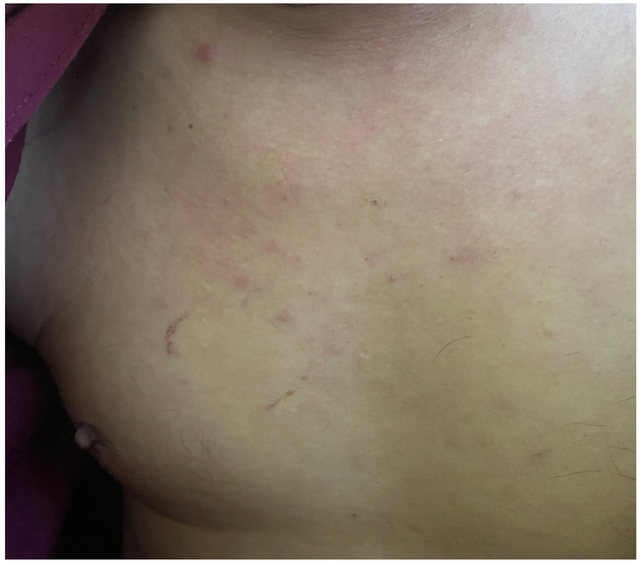

Figure 1. Maculopapular rash on chest

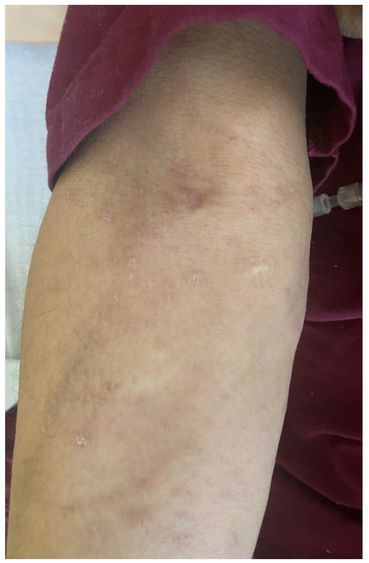

Figure 2. Maculopapular rash on arm

Clinical Manifestation	Frequency
Rash	78%
Fatigue	57%
Scleral icterus	35%
Fever	26%
Weight loss	23%
Abdominal pain	22%
Phallodynia	13%
Sore throat	8.2%
Headache	7.2%

Chart 1. Most common clinical manifestations of syphilitic hepatitis.

[a]Data adapted from Huang et al.
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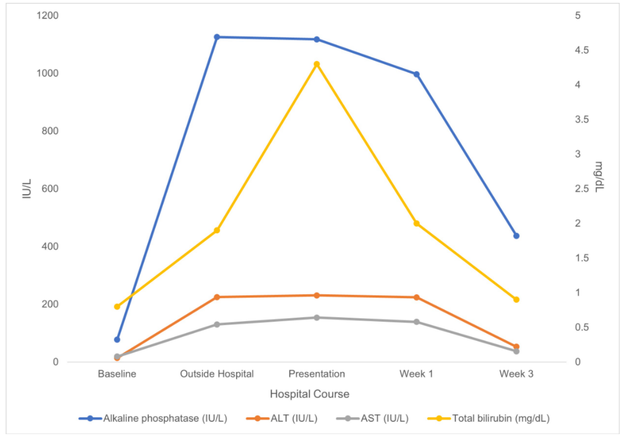

Figure 3. Liver function tests.

DIAGNOSIS

- The patient was ultimately diagnosed with secondary syphilis complicated by neurosyphilis and syphilitic hepatitis
- The patient completed a two-week course of intravenous penicillin with complete resolution in symptoms
- After initiation of penicillin, the patient's liver chemistries downtrended and normalized, confirming the diagnosis of syphilitic hepatitis (Figure 3)
- Regarding his exposure to syphilis, the patient later admitted that he and his wife participate in unprotected sexual activities with other couples

CONCLUSIONS AND DISCUSSION

- Syphilitic hepatitis is an uncommon manifestation of syphilis, and liver chemistry elevation resolves with treatment of syphilis with penicillin
- Initially, elevated liver chemistries were attributed to amoxicillin-clavulanate; however, with more questioning it was found that elevated liver chemistries predated the antibiotics therefore this was not likely to be the cause of liver injury
- Suspicion should be raised in patients with elevated liver chemistries, in particular cholestatic pattern, who also have manifestations such as maculopapular rash, low grade fever, arthralgias, headache, and changes in vision (Chart 1)
- This case highlights the importance of maintaining a broad differential and avoiding anchoring bias when approaching elevated liver chemistries

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