# Syphilis: The Rare Primary Biliary Cholangitis Mimic

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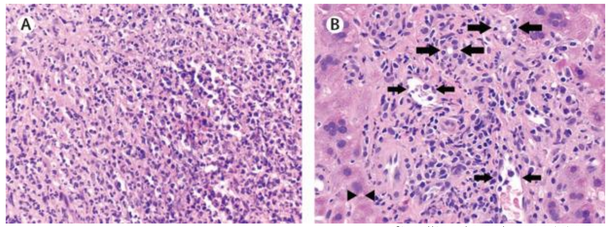
## Introduction

- Primary Biliary Cholangitis (PBC) is a cholestatic intrahepatic autoimmune disorder.[1]
- PBC is a progressive disease that most commonly affects females.[2]
- The common clinical presentation of PBC is fatigue and pruritis. Less commonly patients could also have associated right-upper quadrant abdominal pain.[3]
- Diagnostic studies for PBC is an alkaline phosphatase level greater than 1.5 times upper limit normal and a positive Anti-Mitochondrial Antibody (AMA) study.[3]
- The treatment for PBC is Ursodeoxycholic acid, which slows the progression of the disease.[4]
- Treponema Pallidum (syphilis) is a spirochete bacterium that is transmitted either sexually or in-utero.[5]
- This infection has many presentations and is known as the great mimic.
- Various symptoms of syphilis are rash, arthralgias, and lymphadenopathy.[6] Importantly, syphilis should be considered in the differential in high-risk patient populations i.e. patients with HIV, or patients with multiple sexual partners.[7]
- Syphilis screening should start with a nontreponemal test and if positive, followed by a treponemal test given the high-rates of false-positives.[6]
- The treatment for syphilis is with penicillin. This case report is an example of syphilis's ability to mimic the autoimmune diseases PBC.

**Image A:** Liver biopsy showing hepatic microabscesses in a syphilitic hepatitis patient[8]

**Image B:** Hepatic portal tracts and bile duct damage (large arrows); endotheliitis of portal veins (small arrows); periportal hepatocytes cholestasis (arrowheads)[8]







[8] https://doi.org/10.1016/S2468-1253(17)30155-3

## Case

- A 53-year-old male was referred from his primary care provider for possible PBC secondary to elevated alkaline phosphatase and positive AMA-M2.
- The patient was complaining of night sweats, and chills for a couple months. He was also complaining of numbness in the leg, diffuse joint pain, eye pain, and rash. His PCP started him on steroids and the symptoms started resolving. The patient had a negative CT abdomen. Labs show CRP elevated at 81.5, ESR elevated at 61, ferritin elevated at 439, alkaline phosphatase elevated at 207, and an elevated AMA M2 subtype of 84.3.
- We started the patient on a course of Ursodiol 500mg for PBC, given he met current criteria for PBC diagnosis with an elevation in alkaline phosphatase and positive AMA.
- The labs were repeated after a couple weeks and showed a decrease in alkaline phosphatase to 108. The patient was told to follow-up in 3 months given the normalization of labs and seemingly improving symptoms.
- The patient presented for his follow-up and notes in the interim he met with a rheumatologist for his joint symptoms. He had a lumbar puncture and was diagnosed with neurosyphilis. He was treated with 2 weeks of penicillin and had improvement of his systemic symptoms.
- A literature review was conducted, and we found syphilis can cause an elevation of alkaline phosphatase and false positive AMA-M2. The diagnosis of PBC was questioned and the patient stopped the Ursodiol. After 2 months repeat laboratory showed the alkaline phosphatase remained normal at 110 and AMA was negative.
- This case demonstrates the need to consider syphilis in the differential diagnosis of patients presenting with suspected PBC, especially male patients having constitutional symptoms with no history of other autoimmune diseases.

| | Alkaline Phosphatase | AMA-M2 |
|---|---|---|
| Presenting Values | 207 | Positive |
| Post Ursodiol Therapy | 108 | Not Tested |
| Post Penicillin Therapy | 110 | Negative |

## Discussion

- This is a rare presentation of syphilis with liver manifestations. Syphilis can easily be confused with PBC, if presenting with an isolated elevation of alkaline phosphatase and AMA.
- This is an important consideration when making the diagnosis of PBC if the patient presents with abnormal findings such as eye pain, joint issues and rash. PBC will most commonly present with fatigue and pruritis.[3]
- Syphilis should also be considered in patients with history of multiple sexual partners, HIV, or sexually transmitted diseases.
- The patient in this case had complained of joint pain and rash which were thought to be an unrelated rheumatologic condition.
- The patient showed marked improvement with steroid use which help solidify the idea that he had an unrelated autoimmune disorder.
- It wasn't until he had treatment of the syphilis that he had normalization of the positive AMA, elevated alkaline phosphatase and all his constitutional symptoms.

## Contact

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