The Great Masquerader: A Case of Syphilitic Hepatitis

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Abstract

- Syphilis, colloquially termed “the Great Imitator,” is a sexually transmitted infection caused by the spirochete treponema pallidum. Syphilis occurs in multiple stages
  Stage 1: painless chancre that can spontaneously resolve
  Stage 2: occurs weeks to months later, present as disseminated disease
  Stage 3: pathognomonic diffuse maculopapular rash involving both palms & soles
- **Syphilitic hepatitis occurs in secondary syphilis** and is a rare and often missed diagnosis in patients who have syphilis and who are often are co-infected with HIV or hepatitis B → follows a cholestatic pattern of liver enzyme elevation with serological treponemal evidence
- Typical features can include:
  -bile duct inflammatory infiltration, which may contribute to elevated ALT and GGT levels
  -Hepatic lesions can include granulomas
  -Liver biopsy can also follow a non-specific pattern as well but can also visualize spirochetes

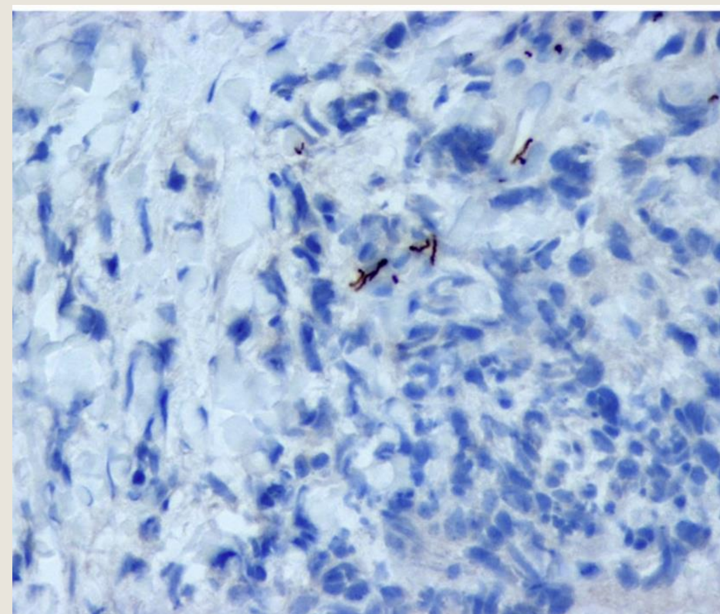

Image 1. Liver biopsy showing spirochetes in tissue

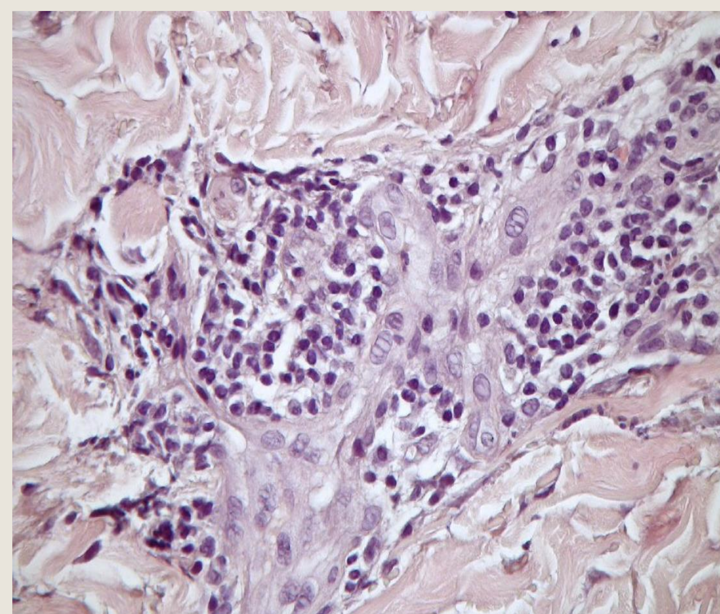

Image 2. Cutaneous Biopsy

Case Description

- 48 y/o male PMH of well-controlled HIV (on Genvoya) and chronic hepatitis B, history of methamphetamine use, presented to the hospital with a diffusely spread rash, unclear timeline

ER Course:

Vitals: T 98F, HR 85, RR 20, BP 129/91, O2 saturation 99% on room air

Pertinent Physical Examination: Rash was small, with purulent boils, starting on the RLE → LLE → trunk → shoulders, chest → scalp, and scaling of and painful fingertips namely index and ring fingers

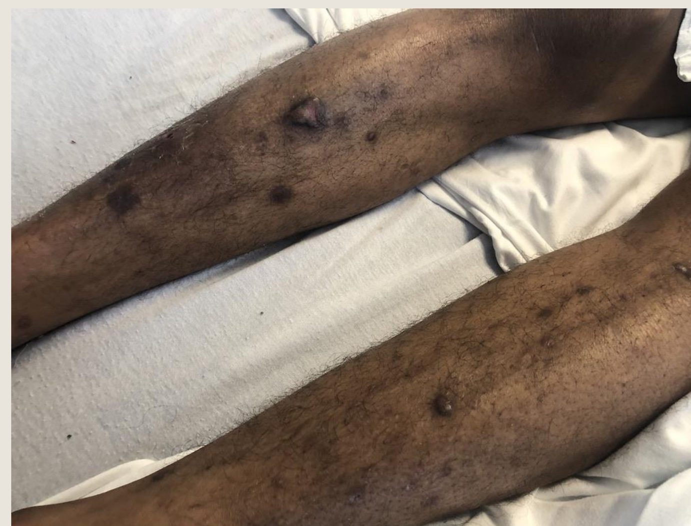

Image 3. Lesions on shins

Image 4. Lesions on finger

Hospital Course:

- Dermatology, Infectious Disease, Pain management, orthopedic surgery, and GI were consulted for recommendations

Labs:

	8/28/2020 1437	
ALT (SGPT)	167 *	▲
AST (SGOT)	108 *	▲
ALK PHOS	1,023 *	▲
Total Bilirubin	1.4 *	▲
Total Protein	8.4 *	▲
Albumin	3.7 *	

Hepatitis A Ab IgM: Non-Reactive
Hepatitis A Ab Total: Reactive (A)
Hepatitis B Core Ab Total: Reactive (A)
Hepatitis B Surface Ab: Non-Reactive
Hepatitis B Surface Ag: Reactive (A)
Hepatitis B PCR Log: 2.34
Hepatitis B Surface Ab Index: 3.500
HepB PCR Qnt: 219
Hepatitis C Ab: Non-Reactive
Hepatitis C RNA Quant: Not detected
Hepatitis Delta Antibodies: NEGATIVE
Hepatitis E Antibodies: Negative
HIV-1 Viral Load: NOT DET.
SARS-CoV-2 PCR: Negative

Antimitochondrial AB: <1:20
Antismooth Muscle Ab, IFA: 1:40 (A)
ANA IFA Pattern: Speckled (A)
ANACR Titer: 1:320 (A)
Angiotensin 1 Converting Enzym: 39
Anti dsDNA Ab, EIA: <12

	9/23/2019 1612	8/27/2020 1341	9/2/2020 1533
Syphilis Ab IgG	Equivocal * !	Reactive * !	Reactive * !
SYPHILIS INDEX		4.126 *	4.104 *
Treponema Pallidum...	Reactive * !		
RPR	Non Reactive *	Reactive * !	Reactive * !

Initial Differential Diagnosis?

-intra vs extrahepatic cholestasis (PBC vs cholangiopathy 2/2 HIV) vs drug-induced liver injury (had previously received clindamycin and Genvoya causes ALT elevation)

Imaging:

-**CTAP:** no evidence of acute intra-abdominal findings or suspicious hepatic lesions dilated stomach no obstructing lesion, possible gastroparesis, b/l inguinal lymphadenopathy, likely reactive

-**RUQ ultrasound:** no liver masses, slightly thickened gallbladder

Case Description Continued

Revised differential Diagnosis?

- Imaging helped rule out obstruction, bile duct dilation → leading us to look for intrahepatic cholestasis → recommended MRI abdomen and MRCP to evaluate biliary tree
- **Dermatology’s skin biopsy → secondary syphilis with IH stains highlighting numerous spirochetes**

	8/28/2020 1437	8/29/2020 0925	9/1/2020 0853	9/3/2020 1010	9/4/2020 0825	9/5/2020 0824	9/8/2020 0900
ALT (SGPT)	167 * ▲	162 * ▲	169 * ▲	232 * ▲	228 * ▲	187 * ▲	103 * ▲
AST (SGOT)	108 * ▲	102 * ▲	110 * ▲	158 * ▲	142 * ▲	98 * ▲	48 *
ALK PHOS	1,023 * ▲	1,029 * ▲	1,036 * ▲	1,143 * ▲	1,023 * ▲	1,018 * ▲	731 * ▲
Total Bilirubin	1.4 * ▲	1.7 * ▲	2.3 * ▲	4.1 * ▲	2.6 * ▲	1.6 * ▲	1.1 *
Total Protein	8.4 * ▲	8.4 * ▲	8.4 * ▲	8.6 * ▲	8.6 * ▲	8.1 *	8.6 * ▲
Albumin	3.7 *	3.8 *	3.9 *	3.9 *	4.0 *	3.7 *	4.0 *
PT				11.9 *	12.1 *	12.2 *	
INR				1.0 *	1.0 *	1.0 *	

- **Liver biopsy → moderate mixed inflammation, neutrophil predominant involving portal and periportal hepatocytes, patchy necrosis, with bile duct injury with intraepithelial neutrophils**

Discussion

Brief Literature Review

- Syphilitic hepatitis is a rare clinical presentation that occurs in secondary syphilis.
- Incidence of viral hepatitis is steadily increasing annually, however the literature lacks published definitive data regarding the clinical presentation, diagnosis, and treatment of this disease
- Per a literature review completed in 2018, researchers were able to show that liver damage usually occurred in early syphilis with non-specific presenting symptoms. The incidence of syphilitic hepatitis is approximately 3% in secondary syphilis, and due to its rarity it is often an overlooked differential
- Four large studies explored the relationship between syphilitic hepatitis and autoimmune deficiency syndrome, and found it to occur concurrently with HIV positive patients, and especially in the population of men who have sex with men, further highlighting the link to the route of sexual transmission
- Diagnosis of syphilitic hepatitis is made by both clinical presentation and positive serological markers, characteristic transaminitis, with no other alternative cause of hepatobiliary injury identified

Final Thoughts

With our case report and extensive research of the literature, we hope to highlight the importance of maintaining a broad differential diagnosis and contemplating the high likelihood of associated conditions with certain diseases, in order to reach a definitive accurate diagnosis

References

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