Autoimmune Hepatitis, SLE, and Leukocytoclastic Vasculitis Following the Moderna COVID Vaccine

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Introduction

There have been a small number of case reports of patients who developed autoimmune hepatitis following vaccination against COVID.[1] The following case report details the development of multiple autoimmune conditions, including AIH, SLE, and leukocytoclastic vasculitis in a patient shortly after she received the Moderna vaccine against COVID.

Case Description

A 59-year-old woman with a history of morbid obesity, CAD, HTN, HLD, and prior cholecystectomy presented to the emergency department due to a petechial rash and fatigue that developed 10 days after receiving the Moderna COVID vaccine. Physical exam was notable only for a petechial rash involving both legs. She was found to have hepatocellular liver injury with ALT 259 U/L, AST 382 U/L, Total Bili 1.9 mg/dL, and Alk Phos 224 U/L. She was initially thought to have an unspecified autoimmune disorder after limited workup. Both her rash and liver injury improved with steroid administration but worsened with tapering, leading to repeat hospitalizations. A biopsy of the rash revealed LCV. Further testing revealed a positive ANA with 1:1280 titer and elevated IgG level at 2,815 mg/dL. RUQ ultrasound revealed no evidence of biliary obstruction and mild CBD dilation. Hepatitis A, B, C viruses, CMV, celiac panel, ceruloplasmin, ferritin, AMA, ASMA, and alpha-1 antitrypsin testing were all negative. She then underwent liver biopsy, which revealed lymphoplasmacytic infiltrate and interface hepatitis that were compatible with autoimmune hepatitis. She was also found to have low complement and positive anti-dsDNA, and was diagnosed with SLE. Her liver injury improved with IV steroids, and she was then transitioned to azathioprine and tapered off of prednisone without further flares to date.

Autoimmune hepatitis is a rare but potentially serious complication of the mRNA COVID vaccines

Figure 1. Petechial rash on the patient's legs

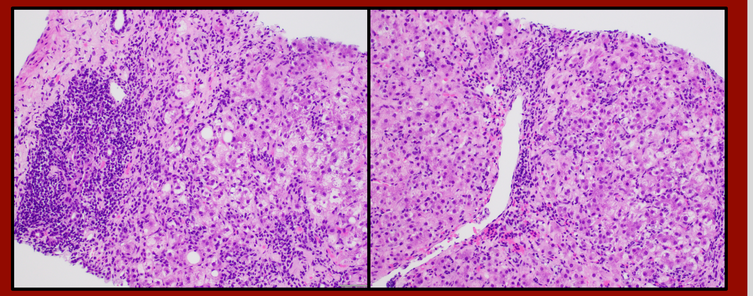

Figure 2. Liver biopsies revealing 2a: Image shows moderate portal-based chronic inflammation with conspicuous plasma cells (left side of the image) and at least moderate interface activity (right side of the image). Apoptotic hepatocytes are also identified. 2b: Inflammation rich in plasma cells, lymphocytes, and histiocytes extends throughout the lobule with areas of centrivenular accentuation. Increased fibrosis is also evident (not shown here). The overall findings are compatible with autoimmune hepatitis in the clinical context.

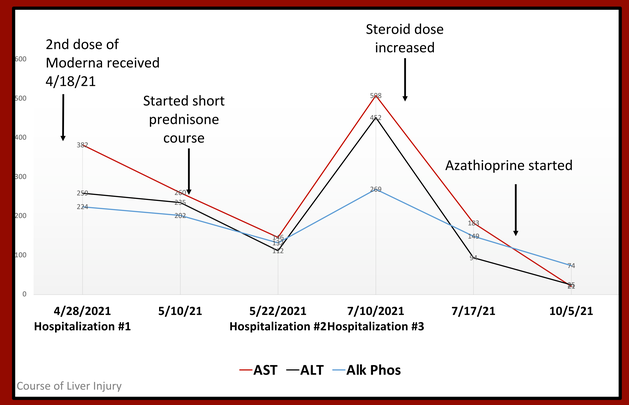

Figure 3. Course of liver injury spanning hospitalizations and follow up

Discussion

While the diagnosis of autoimmune hepatitis was suspected early in her course, it was not able to be confirmed until the liver biopsy. Our patient received 7 points per the IAHG diagnostic criteria for AIH, indicating definitive AIH. This case report adds to this small but growing series of cases in which patients developed autoimmune hepatitis after receiving a COVID-19 vaccine. Fortunately, it appears that most cases can be treated similarly to typical autoimmune hepatitis. The natural history and prognosis of this condition remain unclear given its recent discovery. Because of hesitancy surrounding these vaccines, providers must be able to have an informed discussion with patients about the benefits and risks. This case highlights the need for greater awareness on the part of clinicians of this rare complication.

References

1. Bril F. Autoimmune hepatitis developing after coronavirus disease 2019 (COVID-19) vaccine: One or even several swallows do not make a summer [published online ahead of print, 2021 Aug 10]. *J Hepatol*. 2021;S0168-8278(21)01965-6. doi:10.1016/j.jhep.2021.08.001

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