Vanishing Bile Duct Syndrome in the Setting of Newly Diagnosed Hodgkin Lymphoma

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Introduction

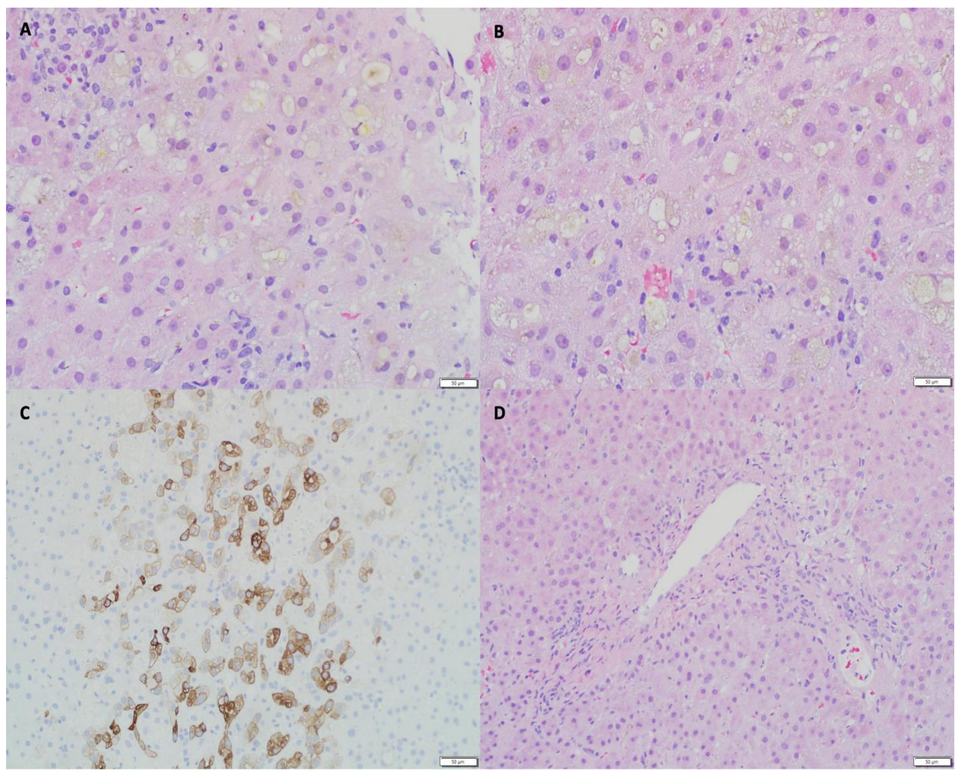
- Vanishing bile duct syndrome (VBDS) is characterized by cholestatic liver disease in the setting of disappearing intra-hepatic bile ducts
- Clinically, it can resemble other forms of cholestatic liver disease; however, imaging and biochemical tests will be unrevealing
- We describe a case of a woman with Hodgkin lymphoma (HL) who developed persistent cholestatic hepatitis due to loss of intrahepatic bile ducts

Case Presentation

- A 23-year-old woman with a history of HL presented for evaluation and treatment of HL
- 2 months prior, she had been treated for CMV-associated gastroenteritis and sepsis
- Physical exam revealed jaundice and conjunctival icterus; no spider angioma or no palmar erythema
- Laboratory results showed: total bilirubin 18.1 mg/dL, direct bilirubin of 15.5 mg/dL, ALT 363 U/L, AST 149 U/L, alkaline phosphatase (ALP) of 2,392 U/L, INR of 2.07, and cytomegalovirus (CMV) PCR viral load of 670 IU/mL
- Acute viral hepatitis studies, tests for primary intrinsic liver diseases, and autoimmune markers were negative
- Computerized tomography (CT) of the abdomen and pelvis: Extensive lymphadenopathy, sclerotic changes throughout the skeleton, splenomegaly, and hepatomegaly without focal liver lesions
- Magnetic resonance cholangiopancreatography (MRCP) of the abdomen: No evidence of biliary ductal dilatation

Severe Cholestasis from Vanishing Bile Duct Syndrome as a Paraneoplastic Syndrome

Figure 1. Parenchymal Liver Biopsy



(A) and **(B)**: Lobular cholestasis. The hepatic lobules show cholestasis within the hepatocytes and bile canaliculi. **(C)**: CK-7 positive hepatocytes in chronic cholestasis. The hepatocytes in this case stain positive for CK-7. **(D)**: Paucity of intrahepatic bile duct. No bile duct is seen in the portal tract.

Clinical Course

- Treatment for her HL was initiated, as well as foscarnet for her CMV viremia
- Liver biopsy showed benign liver parenchyma with marked cholestasis and paucity of bile ducts, no cirrhosis, and no viral inclusions (**Figure 1**)
- The patient was initiated on ursodeoxycholic acid (UDCA) at 15 mg/kg/d, without improvement in symptoms or cholestasis
- Liver transplant (LT) was discussed, but patient deemed not a candidate for LT

Discussion

- Liver involvement in HL typically manifests as parenchymal invasion, external compression, or paraneoplastic destruction of bile ducts (VBDS)
- VBDS signifies a poor prognosis with patients frequently progressing to liver failure
- The pathogenesis of VBDS in HL is not yet defined with current evidence suggesting an immune-mediated response
- Diagnosis of VBDS is made via liver biopsy, showing loss of interlobular bile ducts in >50% of portal areas, provided that the histologic specimen contains ≥10 portal tracts
- Typically, viral causes should be excluded. While our patient did have CMV viremia, her low viral load and lack of viral inclusions on biopsy precluded CMV as a cause of VBDS
- Treatment for VBDS revolves around treating the underlying cause
- UDCA could be prescribed as a temporizing measure, but, if it yields no improvement, candidacy for LT can be discussed in the right setting