Identifying and Screening At-Risk Patients for Hepatitis Delta Virus

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INTRODUCTION

- Hepatitis delta virus (HDV) is associated with rapid progression to cirrhosis and hepatocellular carcinoma[1]
- Prevalence of HDV may be significantly higher than formerly acknowledged in the United States[2]

CASE DESCRIPTION

- 29-year-old Afghani male with chronic HBV presented with abdominal pain, nausea, and vomiting to an outside facility
- Underwent laparoscopic cholecystectomy and developed significant post-op abdominal distension
- CT showed a large volume of free fluid in the abdomen
- Diagnostic laparoscopy showed intact surgical clips at the cystic duct and four liters of fluid at the gallbladder fossa
- Jackson-Pratt surgical drains were placed in the gallbladder fossa and continued to drain fluid daily
- Due to ongoing large volume fluid output and equivocal diagnostic workup including an ERCP, the patient was transferred to our hospital for further evaluation

LABORATORY RESULTS

- AST 583 U/L
- ALT 452 U/L
- Alk Phos 88 U/L
- T. Bilirubin 1.8 mg/dL
- Albumin 2.8 g/dL
- SAAG 1.7 g/dL
- Ascites fluid protein <2 gm/dL
- HBV DNA PCR <10 IU/mL
- HBsAb non-reactive
- HBsAg reactive
- HBcAb reactive
- HBeAg non-reactive
- HBeAg reactive

All patients with a reactive hepatitis B surface antigen should undergo hepatitis delta virus (HDV) screening, especially patients with additional risk factors[6]

Risk factors include migration from endemic areas, hemodialysis patients, healthcare employees, and IV drug use[7,8]

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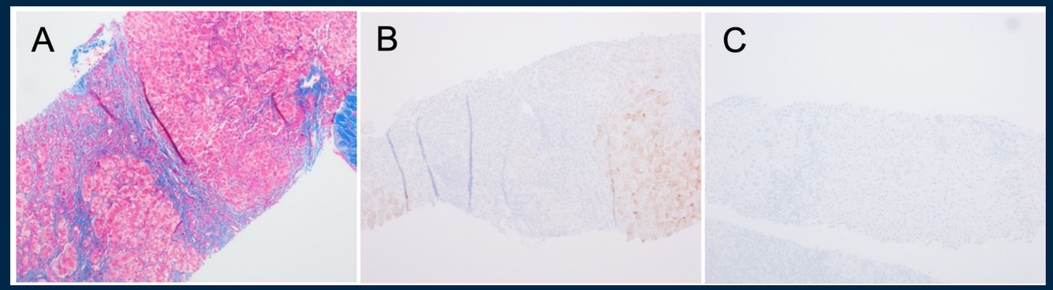

Image 1. (A) Background markedly active chronic hepatitis consistent with cirrhosis confirmed with trichrome stain. (B) Immunohistochemical stains demonstrate patchy staining with HBsAg and (C) negative for HBcAg. This pattern of immunohistochemical staining represents an inactive carrier state.[3]

CASE CONTINUED

- Ascitic fluid studies prompted a liver biopsy (image 1)
- Patient had **positive HDV antibody**, confirming decompensated cirrhosis due to HDV superinfection
- Drains were removed and patient was discharged on oral diuretics and entecavir
- Diuretic up-titration is ongoing with plans to enroll in a trial in the future pending clinical status

DISCUSSION

- **70-80% of chronic HBV patients with HDV superinfection develop cirrhosis or hepatocellular carcinoma within 5-10 years[4,5]**
- Likely the cause of cirrhosis in our patient, as cirrhosis in a 29-year-old would not be expected with HBV infection alone
- **All patients with a reactive hepatitis B surface antigen should undergo hepatitis delta virus (HDV) screening, especially migrants from endemic areas, hemodialysis patients, healthcare employees, and history of IV drug use[6-8]**
- Early recognition of at-risk individuals can aid in faster diagnosis and earlier treatment[9]
- Total HDV antibodies should be obtained for screening, with diagnosis confirmation by serum RT-PCR
- Therapeutics only available for compensated patients (pegylated interferon alpha in the U.S. and buleviritide in Europe)[10-11]

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