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Case report

Cholestatic Acute Hepatitis as an Unusual Manifestation of Syphilis in an Immunocompetent Patient: A Case Report

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Abstract

Acute hepatitis is among the most underdiagnosed clinical presentations of syphilis. Its incidence is higher in individuals living with human immunodeficiency virus (HIV) and less frequently reported in immunocompetent patients. Diagnosis should be suspected in the presence of risk factors and typical clinical manifestations of the infection. Timely treatment is crucial for disease control and the prevention of complications. We report the case of a young immunocompetent adult who developed cholestatic acute hepatitis as a manifestation of secondary syphilis.

Keywords

Hepatitis, syphilis.

INTRODUCTION

Hepatitis is a condition characterized by an inflammatory process that can be caused by infections, drug toxicity, autoimmune and metabolic diseases, and various genetic defects. The most common etiologies of acute hepatitis are alcohol and hepatotropic viruses; however, other, much less common infections, such as syphilis, can cause acute hepatitis due to their capacity for multi-organ involvement[1]. Syphilitic hepatitis is a rarely diagnosed entity with an incidence ranging from 0.25% to 3%[2,3]; however, it can reach up to 41% in patients coinfected with the human immunodeficiency virus (HIV)[4]. It is characterized by a cholestatic pattern with a predominant elevation of alkaline phosphatase and a mild increase in bilirubin and transaminases[5].

CASE PRESENTATION

A 23-year-old male patient presented to the emergency department with a one-month history of generalized, intermittent, colicky abdominal pain, associated with the appearance of a non-pruritic maculopapular rash on the upper limbs, thorax, and palmoplantar areas. His medical history revealed no relevant pathologies or previous transfusions; he denied the use of inhaled, injectable, or oral psychoactive substances; no use of hepatotoxic substances or travel

in the last three months was found; however, he reported risky sexual activity (unprotected sexual intercourse with more than two partners in the last year). Physical examination revealed a generalized maculopapular rash on the upper limbs, thorax, and palmoplantar areas, associated with conjunctival and mucocutaneous jaundice.

Diagnostic tests showed altered liver function tests, with the R factor demonstrating a predominant cholestatic pattern, along with aspartate aminotransferase (AST): 207 UI/L, alanine aminotransferase (ALT): 358 UI/L, γ-glutamyl transferase (GGT): 540 UI/L, alkaline phosphatase (ALP): 1328 UI/L, total bilirubin: 2.3 mg/dL and direct bilirubin: 2.06. The complete blood count, coagulation tests, and the rest of the basic biochemistry were normal. Imaging tests were ordered to rule out causes of biliary obstruction. An abdominal ultrasound showed mild hepatomegaly without other findings, and a magnetic resonance cholangiopancreatography corroborated the ultrasound findings, showing no evidence of intra- or extrahepatic bile duct dilation or stones, with lymph nodes near the porta hepatis at the retroperitoneal level. Serology for hepatotropic viruses (immunoglobulin M [IgM] antibodies for hepatitis A virus, surface antigen for hepatitis B, antibodies for hepatitis C, antibodies against the surface antigen of the hepatitis B virus) and other possible viral etiologies (IgM antibodies against cytomegalovirus, IgM against Epstein-Barr virus, and fourth-generation human immunodeficiency virus [HIV] enzyme-linked immunosorbent assay [ELISA]), an autoimmunity panel (antinuclear antibodies, antimitochondrial antibodies, and anti-smooth muscle antibodies), iron profile, and ceruloplasmin were all negative. Additionally, a rapid plasma reagin (RPR) test was reactive at 1:64 dilutions, and serum total antibodies for treponema (FTA-ABS) were positive.

The diagnosis of acute syphilitic hepatitis was made based on positive syphilitic serology and elevated liver enzymes, after ruling out other causes, including viral, autoimmune, deposition, toxic, or pharmacological etiologies. Treatment was initiated with benzathine penicillin G 2,400,000 units intramuscularly in a single dose, which led to subsequent normalization of liver function tests and a decrease in non-treponemal syphilis serology (RPR) titers at the three-month follow-up.

DISCUSSION

Acute hepatitis is one of the possible clinical manifestations of syphilis and can often be underdiagnosed and underreported[6]. It has been described more frequently in patients coinfected with HIV, and is less frequent and unusual in immunocompetent patients, like the one in our case[4,7]. It occurs more often in the early stages of infection and is detected mainly in the primary and secondary phases (88%), followed by the latent phase (7%) and the tertiary phase (6%)[7]. Its development occurs after the hematogenous dissemination of the spirochete, which allows it to reach different organs, including the liver, generating an inflammatory response in the hepatocytes and bile ducts[6-8]. In the secondary syphilis phase, the involvement is predominantly cholestatic and often coincides with fever, a typical palmoplantar rash, and even nephrotic syndrome[9,10].

Diagnostic criteria were proposed in 2004 and consist of altered liver enzymes, positive serological tests for *Treponema pallidum*, exclusion of other causes of liver disease, and normalization of liver enzymes after appropriate antibiotic treatment[8]. Relevant entities for the differential diagnosis of the cholestatic pattern include choledocholithiasis, malignant biliary duct obstruction, hepatotoxicity, primary biliary cholangitis, sclerosing cholangitis, infiltrative diseases, and infections that can lead to cholestasis. Liver biopsy is not essential for diagnosis, but if performed, the described histological findings include inflammatory infiltration of the bile duct, hepatic granulomas, periportal necrosis, and endotheliitis, which are non-pathognomonic findings, except for the detection of *T. pallidum* with dark-field microscopy in the liver parenchyma[11,12].

Although our case illustrates a typical presentation and clinical response, fulminant liver failure has been described[13]. The treatment for acute secondary syphilitic hepatitis is benzathine penicillin G 2,400,000 units intramuscularly in a single dose, and the outcome is excellent in most patients, who show improvement in clinical symptoms and liver biochemistry within weeks[14].

CONCLUSIONS

Syphilitic hepatitis is an underdiagnosed entity that can affect both immunocompromised and immunocompetent patients. It usually presents with mild and non-specific clinical manifestations, and altered liver profile and syphilis serology are key for diagnosis. Treatment with penicillin is effective and can prevent serious complications such as acute liver failure.

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