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Case Report (Open Access)

A RARE ATYPICAL HEPATOBILIARY PRESENTATION OF EPSTEIN BARR VIRUS: A CASE REPORT

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ABSTRACT
Primary Epstein Barr Virus infection (EBV) causes infectious mononucleosis which is self-limiting. Hepatitis with mild transient elevations in aminotransferases, mild jaundice is reported in about 5% cases. (Jerome *et al.,* 2023). Only a few cases of EBV-induced cholestasis have been reported, with or without associated features of Infectious mononucleosis. However, Hepatobiliary involvement presenting as clinical jaundice, acute acalculous cholecystitis and choledocholithiasis without hepatitis is rare. The current case report describes atypical hepatobiliary presentation of EBV successfully treated with conservative measures.

INTRODUCTION
Epstein-Barr virus (EBV) is a common herpesvirus with usually asymptomatic primary infection, occurring between 10 and 30 years old in developed countries. Increasing age seems to enhance the likelihood of symptomatic infection (Cohen, 2000). Classic presentation is infectious mononucleosis (IM) which includes fever, tonsillopharyngitis and lymphadenopathies. (Drebber *et al.,* 2006)
EBV can hypothetically affect any organ, with hematologic and liver abnormalities occurring in a large number of patients. Up to 80-90% of the patients have transaminases elevation, which is frequently mild, asymptomatic and self-limited, however, severe hepatitis and liver failure have been described especially in immunosuppressed patients (Kofetediris *et al.,* 2011) Significant cholestasis and jaundice are rare with an estimated incidence below 5%.(Noor *et al.,* 2018).

Keywords: *Ebstein-barr virus, Hepatobiliary, jaundice, acute acalculous cholecystitis, choldecholithiasis, hepatitis*

CASE
A 56-year-old male was admitted to our hospital with a 8 day history of fever, vomiting, abdominal pain, reduced appetite.No significant past history. No history of ethanol intake or smoking. No comorbidities. On examination patient was febrile, icterus, throat congested ,vitals stable, tenderness localized in the right hypochondrium , positive Murphy sign with hepato-splenomegaly.
Initial laboratory tests revealed Hemoglobin 10.8 g/dl, Total leukocyte count 6783 cells/mm3 with monocytosis (12%), lymphocytopenia (5.7%) with Normocytic Normochromic red blood cells, no anisopoikilocytosis. Liver Function Test revealed Total bilirubin 47.09 mg/dl Direct/Indirect fraction 23.49 / 23.60 mg/dl, Enzymes AST/ALT/ALKP/GGT normal. HIV, HBsAg, HCV, Hepatitis A and Hepatitis E Virus non-reactive. Workup for Hemolysis revealed low LDH (Lactate dehydrogenase) ,Reticulocyte proliferative index 2.3, Coombs negative, G6pd assay, Hemoglobin electrophoresis, Haptoglobin ,Osmotic-fragility test , Fibrinogen, Anti-Nuclear Antibody, Autoimmune workup were all normal. Epstein-Barr virus assay revealed anti-EBVEA (Early Antigen) IgG 2+, Anti-EBVCA (Capsid Antibody) IgG 2+, EBVNA (Nuclear antigen) Antibody Negative suggestive of Acute EBV infection. Cytomegalovirus and Herpes Simplex virus workup negative. Ultrasonography of abdomen and pelvis findings confirmed by Magnetic Resonance CholangioPancreaticography (MRCP) showed hepatosplenomegaly, acute acalculous cholecystitis (5.4cm thickening), choledocholithiasis (dilated CBD with filling defect). Liver Function

Tests (LFT) at day 8 of admission revealed Total bilirubin of 14 mg/dl with Direct/Indirect fraction 6/8 mg/dl. Patient was managed conservatively. LFT after 8 weeks normalized.Patient remained asymptomatic on follow-up.

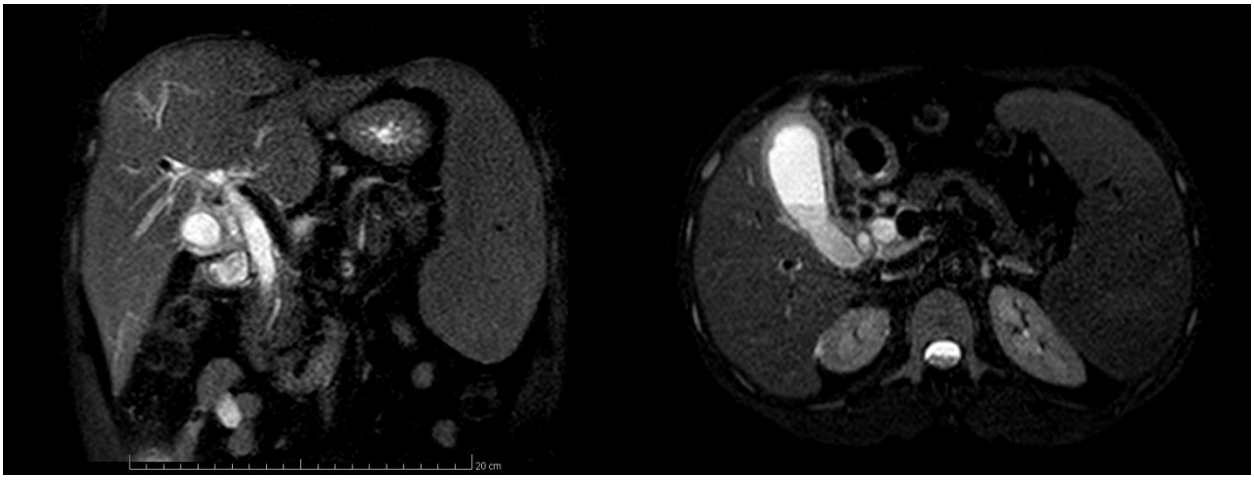

Figure MRCP showing hepatomegaly with acute acalculous cholecystitis with dilatation of kf common bile duct suggestive of cholelithiasis

DISCUSSION

Epstein-Barr Virus (EBV/ HHV-4) is a member of herpesviridae family (Cohen *et al.,* 2000). Jaundice is a rare presentation of EBV primary infection. Investigation of an obstructive jaundice is mainly based on abdominal imaging.

The pathogenesis of cholestasis in the setting of EBV primary infection is not completely understood and several mechanisms have been proposed. It is thought that EBV infection leads to cytokine increase with inflammation and disruption of canalicular function or to direct damage of hepatic cells by autoantibody-mediated oxidative damage (Shaukath *et al.*, 2005). Once suspected, a detailed medical history and physical examination should be performed, and serologic markers should be measured (Hinedi *et al.,* 2003).

Transaminitis is relatively common in acute EBV infection occurring up to 80% of clinical presentation however jaundice is rare and incidence is about 5% (Jerome *et al.,* 2023). The diagnosis of Epstein Barr virus infection was confirmed by serology. Acute cholecystitis and choledocholithiasis was confirmed radiologically by ultrasonography of abdomen and MRCP. Markers of severe involvement, such as hyperammonemia, prolonged prothrombin time, severe transaminitis was not seen in our patient. Hemolytic workup and other infectious panel were negative. In the review of various articles, very few have reported hepatobiliary presentation of EBV virus.

CONCLUSION

Information on Hepatobiliary manifestations of EBV is limited. Very few articles reported EBV presenting with jaundice and absence of hepatitis. This case highlights a Rare atypical complication of EBV which poses diagnostic challenge, to be considered as differential for predominant indirect mixed pattern hyperbilirubinemia without hepatitis. Progression to liver failure has been described and a careful assessment should be made to prevent that.

LIST OF ABBREVIATIONS

EBV - EPSTEIN BARR VIRUS
HHV - HUMAN HERPES VIRUS

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