Cytomegalovirus Hepatitis in an Immunocompetent Adult

CASE

A 41-year-old male presented with fever and body aches for 1 week. There was no history of comorbidities. Biochemical investigations at admission were following: haemoglobin 14.4 g/dl, total leucocyte counts 8960/cmm (71.5% lymphocytes, 20.9% neutrophils, 6.1% monocytes), platelet count 237,000/cmm, bilirubin 1.6 mg/dl, albumin 4.4 g/dl, aspartate transaminase 424 IU/L, alanine transaminase 747 IU/L, alkaline phosphatase 353 IU/L, blood and urine cultures were sterile. Following work up was negative: malaria, dengue and scrub typhus. Peripheral smear did not reveal abnormal cells. Smooth muscle autoantibody and antinuclear autoantibody were negative. Computed tomography chest and abdomen revealed hepatosplenomegaly. Evaluation was negative for following viral markers: IgM anti HAV, IgM anti HEV, HBsAg, anti HCV, EBV DNA and HIV. Cytomegalovirus (CMV) DNA was positive (2250 IU/ml). A liver biopsy was done which showed mixed portal inflammation and CMV inclusions (Figure 1); CMV immunohistochemistry was positive. A decision to treat CMV infection (against observation only) was taken as untreated CMV infection can lead to severe morbidity in some cases. He was started on intravenous ganciclovir therapy followed by oral valganciclovir for 1 month. His fever improved after 2 days of treatment; liver function tests (LFTs) improved gradually. CMV viral load was not repeated after improvement.

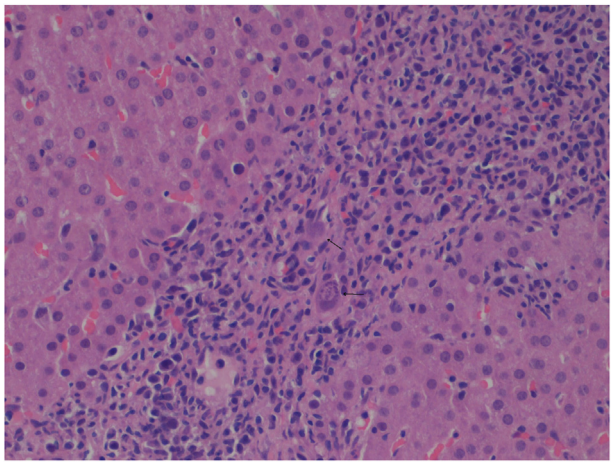

Figure 1 Mixed portal inflammation, CMV inclusions are marked by arrows (H & E stain, 40 × 10 magnification).

DISCUSSION

CMV is a ubiquitous double-stranded DNA virus that infects 50–100% of humans across various populations. It is the most common viral infection in recipients of liver transplantation and reactivation is more common than primary infection.[1] The virus remains latent in lymphoid and myeloid cells after primary infection; these sites of latency become reservoirs for reactivation during periods of decreased immunity (immunosuppression) or during critical illness.[1,2]

The transplanted liver allograft is also susceptible to develop CMV hepatitis, and this often manifests with symptoms that may be clinically indistinguishable from acute rejection.[3] A high index of suspicion is required as immunohistochemistry is better to make a diagnosis than the demonstration of inclusion bodies by routine staining, but immunohistochemistry may be false negative due to focal nature of positive cells. A histological image of disseminated focal hepatitis should lead to suspicion of CMV.[4]

CMV causing febrile illness and hepatitis in immunocompetent individuals is very rare. In a systematic review of 26 studies, Cunha *et al.* analysed 44 patients with CMV hepatitis in immunocompetent hosts. The common presentations were fever (77%) or malaise (29%), abdominal pain (23%) and jaundice (23%).[5] Rafailidis *et al.* demonstrated that the involvement of gastrointestinal tract and central nervous system were more common than haematological abnormalities, uveitis and pneumonitis.[6] Hepatitis is an uncommon presentation of CMV.[7] Clinical profile of the disease depends on virus specific cell mediated immunity.[8] Steroid use, recent blood transfusion and sepsis or critical illness are risk factors for CMV disease in immunocompetent patients. However, it should be noted that none of these were present in the index case.[9,10] The case highlights importance of looking for CMV hepatitis in immunocompetent patients when typical viral markers are negative and in the absence of tropical infections causing febrile illness and transaminitis.

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CONFLICTS OF INTEREST

None.

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