Liver Involvement in a Patient with Cytomegalovirus-associated Hemophagocytic Lymphohistiocytosis

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A 72-year-old woman presented with fever and profound liver dysfunction, with a serum total bilirubin level of 8.2 mg/dL, an alanine aminotransferase level of 639 IU/L, an alkaline phosphatase level of 1,175 IU/L, a lactate dehydrogenase level of 1,419 IU/L and a ferritin level of >16,500 ng/mL. A liver biopsy specimen revealed diffuse proliferation of Kupffer cells and CD8+ cytotoxic T-lymphocytes (CTLs) (Picture 1, 2). Meanwhile, bone marrow aspiration demonstrated infiltration of CD68+ histiocytes exhibiting phagocytosis (Picture 3, 4). Cytomegalovirus (CMV) was detected

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on immunohistochemical staining, and an 8-fold elevation of the IgG anti-CMV antibody titer was identified over the subsequent four weeks, with negative IgM anti-CMV antibodies. A diagnosis of CMV-associated hemophagocytic lymphohistiocytosis (HLH) was thus confirmed (1). A complete recovery was achieved following the administration of ganciclovir. The remarkable proliferation of Kupffer cells and CTLs with a minimal amount of hepatocellular necrosis and no bile duct destruction, as well as the scarcity of CMV staining, indicated that the patient’s liver injury had been mediated by HLH-related immunological hyperstimulation (2). In contrast, cases of CMV hepatitis typically exhibit sinusoidal mononuclear infiltrate, increased hepatocellular mitosis, bile duct epithelial damage and the presence of nuclear inclusion bodies.

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References