Georgian Scientists
ქართველი მეცნიერები
Vol. 8 Issue 4(1), 2026
https://doi.org/10.52340/gs.2026.08.04(1).65



A RARE COMPLICATION OF EPSTEIN-BARR VIRUS: CLINICAL CASE DISCUSSION

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Introduction

Epstein–Barr virus (EBV) infection is usually mild to moderate in severity and is characterized by fever, lymphadenopathy, and hepatosplenomegaly. However, in rare cases, it may lead to various severe complications. One such complication is macrophage activation syndrome (MAS), a life-threatening condition that requires early diagnosis and aggressive immunosuppressive therapy. EBV-associated MAS is particularly important in children and adolescents, as its clinical presentation may include acute liver injury, pancytopenia, and polyserositis, posing significant diagnostic challenges.

Case Presentation

A 14-year-old boy initially presented with fever and sore throat. One week later, his condition deteriorated, prompting admission to a hospital. Investigations confirmed EBV infection, with positive EBV viral capsid antigen (VCA) IgM antibodies. Following intravenous administration of dexamethasone and fluid therapy, the patient's condition stabilized temporarily. Four days later, he developed jaundice of the skin and mucous membranes, persistent spiking fever, and severe generalized weakness. On day 11 of the illness, he developed signs of acute liver failure, including grade I hepatic encephalopathy, manifested by disorientation, slowed thinking, and impaired concentration. Severe hyponatremia and polydipsia were also observed, with fluid intake reaching up to 6 liters per day. The patient was admitted to the pediatric intensive care unit. On physical examination and imaging, polyserositis was identified, with fluid accumulation in the pleural and pericardial cavities and the pelvis. Hepatosplenomegaly was also present. Laboratory investigations revealed pancytopenia, anemia, and markedly elevated liver function tests. Viral hepatitis and leptospirosis were excluded. Repeat testing demonstrated a markedly elevated EBV VCA IgM level (>160). On day 15 of the illness, the patient developed an extensive maculopapular rash involving the abdomen and back, which subsequently spread to the extremities. Petechiae were also noted on the lower extremities. Based on the clinical presentation and laboratory findings, the condition was assessed as macrophage activation syndrome (MAS) associated with EBV infection.

Pulse therapy with intravenous methylprednisolone (Solu-Medrol) at a dose of 1,000 mg daily was administered for three consecutive days, followed by a gradual dose reduction until completion of the treatment course. Concomitant antiviral therapy and hepatoprotective treatment were also provided. The patient's clinical condition improved significantly following treatment.

Conclusion

This case highlights a rare but life-threatening complication of EBV infection: macrophage activation syndrome (MAS), which may present with acute liver failure, pancytopenia, and polyserositis. In patients with severe or atypical disease progression, early suspicion of MAS is essential. Timely diagnosis and appropriate treatment may substantially improve clinical outcomes.

Keywords: Epstein–Barr virus, Pulse therapy, antiviral therapy, pediatric patient, intravenous methylprednisolone.