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SHORT COMMUNICATION

A rare case of acute pancreatitis and life-threatening hemolytic anemia associated with Epstein—Barr virus infection in a young healthy adult

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Summary Epstein—Barr virus (EBV) is a common infection that affects 95% of adults worldwide at some point during life. It is usually asymptomatic or causes a self-limiting clinical syndrome known as infectious mononucleosis. It rarely causes complications. Here, we present a case of a healthy 21-year-old female college student who suffered from severe pancreatitis and life-threatening autoimmune hemolytic anemia in association with EBV infection, and we also discuss the common presentation of EBV infection and the diagnosis and treatment of simple and complicated EBV infection.

Background

EBV infection is common and affects more than 95% of adults worldwide at some point during life. The clinical syndrome associated with EBV is known as infectious mononucleosis and commonly presents with fever, pharyngitis and lymphadenopathy [1]. EBV infection rarely causes infectious

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mononucleosis if the primary infection is acquired in childhood. However, more than 30% of adolescents and adults with primary EBV infection develop infectious mononucleosis [2], which is characterized initially by sore-throat-like symptoms that are often followed by palatal petechiae, transaminitis, thrombocytopenia, splenomegaly, and hepatomegaly [1,2]. It usually resolves over a period of weeks or months with no sequelae; however, it can occasionally be complicated by a wide variety of neurologic, hematologic, hepatic, respiratory, and psychological complications [3]. Infectious mononucleosis commonly occurs in children, young adults and persons who live in densely populated buildings, such as dorms [2]. Immunocompromised patients have a high risk of developing infectious mononucleosis. EBV carriers shed virus particles from their salivary glands throughout life, but the rate of shedding is highest during the first year following primary infection [2]. EBV spreads via bodily fluids, most commonly through direct contact with saliva. Although intimate sexual contact is most commonly associated with EBV infection in young adults, it can be transmitted through casual contact, such as a handshake; sharing towels, toothbrushes, food or utensils; and general proximity, with a carrier or infected individual.

Case report

A 21-year-old female college student with a history of migraine presented with complaints of malaise, fever, epigastric pain radiating to the back, nausea, vomiting and sore throat that had been present for three days prior to admission. The patient denied prior exposure to hazardous chemicals, unexpected weight loss, hemorrhagic or thrombotic events, visual disturbance, neurological symptoms, skin rash, high risk sexual behavior and intravenous drug use. She admitted to occasional drinking; however, her last drink was 10 days prior to admission. The patient reported regular menstrual periods lasting from 2 to 3 days without excessive bleeding. One of the patient's siblings reported symptoms consistent with upper respiratory tract infection two weeks prior to the patient's admission. The patient denied intimate contact with any companion in her recent past. Her initial physical examination revealed no toxicity, female appearance, temperature of 99 °F, blood pressure of 110/65 mmHg, a mildly injected pharynx, small bilateral shoddy non-tender cervical lymph nodes, and abdominal tenderness in the right upper quadrant and epigastrium.

Laboratory data revealed a total white blood cell count of 7.9 cells/μL (70% neutrophils, 7% atypical lymphocytes), hemoglobin of 3.8 g/dl, platelet count of 157 k/μL, aspartate aminotransferase of 98 U/l, alanine aminotransferase of 82 U/l, total bilirubin of 2.4 mg/dl, and lipase of 4301 U/l. Computerized tomography of the abdomen revealed findings consistent with acute pancreatitis, namely pancreatic edema, peripancreatic stranding, periportal lucency with mild pericholecystic edema and mild splenomegaly.

The disease included in the differential diagnosis of anemia were intravascular hemolysis, microangiopathic hemolytic anemia due to disseminated intravascular coagulation (DIC), anemia cause by acute and chronic blood loss resulting from peptic ulcers and possible menorrhagia. Although the patient did not report a history of excessive menstrual blood loss, menorrhagia was included in the differential diagnoses due her age. Acute and chronic blood loss and DIC were ruled out based on the laboratory studies and the patient's history and physical examination. The laboratory studies revealed evidence of acute intravascular hemolysis. The peripheral blood smear demonstrated mild thrombocytopenia marked by anemia with anisocytosis and reticulocytosis. The serological studies (Table 1) revealed acute EBV infection, which could be associated with multi-system involvement in this patient.

The patient's acute autoimmune hemolytic anemia (AIHA) was treated with 1 mg/kg prednisone pulse therapy for five days, and the dose was then tapered over the following two weeks. She also required blood transfusions during the initial phase of hospitalization. The pulse steroid therapy halted the hemolysis, as indicated by stabilization of hemoglobin, increased haptoglobin and normalization of bilirubin by discharge on the 9th day of hospitalization. Her hemoglobin was 9.2 g/dl on day 7 and 9.4 g/dl on day 9 of hospitalization. At the three week outpatient follow-up appointment, her hemoglobin was 10.2 g/dl. Pancreatitis was also successfully treated with conservative management. As her abdominal symptoms completely resolved and her lipase level gradually decreased over the period of hospitalization, radiological confirmation of pancreatic inflammation resolution was deemed unnecessary. The patient made a full recovery with no sequelae.

Discussion

In this case, the diagnosis of infectious mononucleosis was based on the patient's history and physical and laboratory findings. The patient was positive for EBV-IgM antibody and negative for