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17

EPSTEIN BARR VIRUS HEMORRHAGIC ENCEPHALITIS IN YOUNG MALE: CASE REPORT

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Abstract:

INTRODUCTION

EBV virus also known as human herpesvirus 4 (HHV-4), is a member of the herpes virus family with double stranded DNA virus and is found all over the world. EBV commonly causes Infectious Mononucleosis (“mono” or “glandular” fever), It spreads most commonly through body fluids, primarily saliva. Although rare, EBV may also can cause CNS involvement such as demyelinating disease, acute encephalitis, meningitis, meningo encephalitis, myelitis, polyradiculitis, and acute cerebral ataxia.

Here, we present a rare case of EBV Hemorrhagic encephalitis in a young male patient. **ASE REPORTA** 14-year-old male patient presented with complain of high grade fever, vomiting, headache for last 7 days followed by altered sensorium since 3 days. On general examination, body temperature 100 F with regular pulse rate of 80 bpm and BP of 120/80 mm of hg. On neurological examination- patient was drowsy and had a GCS score of 5/15 (E2 V1 M2). Bilateral pupil was semi dilated and reacting to light. On motor examination there was abnormal extension response to pain stimuli. Tone was increased with hyperreflexia bilateral planter were extensor.

DISCUSSIONEBV is double standard DNA virus belongs to herpes virus family, causes Infectious Mononucleuses. This is benign, self-limiting infection presenting with fever, pharyngitis, posterior cervical lymphadenopathy and hepatosplenomegaly. In approximately 1% of cases, a variety of CNS complications including CNS lymphoma, meningitis, encephalitis and acute disseminated encephalomyelitis (ADEM) may occur with EBV infection. MRI studies in EBV encephalitis ranges from entirely normal to diffuse edema and inflammation. examination will show lymphocytic pleocytosis, increased protein and normal glucose level. PCR can be useful to access the presence of EBV DNA in CSF, which was done in this case.

CONCLUSION Haemorrhagic Encephalitis can be a rare complication of EBV infection with early brain imaging and detailed CSF analysis can lead to early detection and treatment of EBV Hemorrhagic Encephalitis with favorable outcome.

Keywords: EPSTEIN BARR, VIRUS, HEMORRHAGIC ENCEPHALITIS, MALE.

• INTRODUCTION

EBV virus also known as human herpesvirus 4 (HHV-4), is a member of the herpes virus family with double stranded DNA virus and is found all over the world.

EBV commonly causes Infectious Mononucleosis (“mono” or “glandular” fever), It spreads most commonly through body fluids, primarily saliva. It is also associated with various non-malignant, pre-malignant and malignant lympho-proliferative disease such as- infectious

mononucleosis, hemo-phagocytic lymphohistiocytosis, burkitt's lymphoma, and hodgkin's lymphoma respectively and non-lymphoid malignancy such as gastric cancer nasopharyngeal carcinoma. Although rare, EBV may also can cause CNS involvement such as demyelinating disease, acute encephalitis, meningitis, meningo encephalitis, myelitis, polyradiculitis, and acute cerebral ataxia.

EBV encephalitis patient may present with fever, headache, stiff neck and altered mental status. The diagnosis of EBV encephalitis is made by demonstrating EBV antibody in blood. CSF analysis suggestive of lymphocytic pleocytosis with high protein and CSF Polymerase chain reaction (PCR) positive for EBV. Cranial imaging showing hyper intensities and diffuse edematous changes. EBV encephalitis extremely rarely presents with intra parenchymal hemorrhage.

Here, we present a rare case of EBV Hemorrhagic encephalitis in a young male patient.

- Case report

A 14-year-old male patient presented with complain of high grade fever, vomiting, headache for last 7 days followed by altered sensorium since 3 days. No significant past history. Family history was not significant for any medical illness.

On general examination, body temperature 100 F with regular pulse rate of 80 bpm and BP of 120/80 mm of hg. On neurological examination- patient was drowsy and had a GCS score of 5/15 (E2 V1 M2). Bilateral pupil were semi dilated and reacting to light. On motor examination there was abnormal extension response to pain stimuli. Tone was increased with hyperreflexia bilateral planter were extensor.

Routine blood investigation like Complete blood count, renal function test, Liver function test, Serum electrolytes were within normal limits.

MRI Brain revealed areas of hyper intensities in bilateral para sagittal frontal lobe on FLAIR suggestive of Intra parenchymal hemorrhage (acute phase on right side and late subacute phase on left side). Small areas of hemorrhage also noted in bilateral temporal lobe. Diffuse cortical and sub cortical edematous changes seen in cerebral and cerebellar hemisphere.

CSF analysis revealed 30 cells per ml(95% lymphocytes), protein 80.6 mg/dl, sugar 66.89 mg/dl. H&E stained smear shows few inflammatory cells consisting of pre dominantly lymphocytes along with very few neutrophils and the background also shows few RBCs. CSF polymerase chain reaction (PCR) was positive for EBV.

The patient was treated with Intravenous Acyclovir (10 mg/kg 8 hourly for 21 days), Intravenous Dexamethasone (8 mg/ day for 5 days). At the time of discharge he was conscious and cooperative.

Follow up after 2 months, patient's neurological examination was normal. Repeat MRI done at 2 months revealed reduction in signal intensities.

- **DISCUSSION**

EBV is double standard DNA virus belongs to herpes virus family, causes Infectious Mononucleoses. This is benign, self-limiting infection presenting with fever, pharyngitis, posterior cervical lymphadenopathy and hepatosplenomegaly.

In approximately 1% of cases, a variety of CNS complications including CNS lymphoma, meningitis, encephalitis and acute disseminated encephalomyelitis (ADEM) may occur with EBV infection. Encephalitis is an inflammation of brain parenchyma, which is rare complication of hemorrhagic EBV infection. This may occur due to direct viral invasion in to the CNS (Viral Encephalitis) or it may occur after a viral illness due to a immune reaction (Post infectious encephalitis or ADEM).

MRI studies in EBV encephalitis ranges from entirely normal to diffuse edema and inflammation. Most of the cases in literature reports signal changes in cerebral cortex, sub cortical area and deep gray matter nuclei. EBV antibodies can be demonstrated in blood. CSF examination will show lymphocytic pleocytosis, increased protein and normal glucose level. PCR can be useful to access the presence of EBV DNA in CSF, which was done in this case.

Similar case of hemorrhagic encephalitis associated with EBV infection was published by Satoru Takeuchi, in January 2010, the patient was 20-year-old male with 1-week history of fever, headache and confusion similar to our case. MRI study revealed increased signal in right temporal lobe and progressed to hemorrhagic changes and diffuse cerebral and cerebellar edema on CT Scan done on second day.

- **CONCLUSION**

Hemorrhagic Encephalitis can be a rare complication of EBV infection with early brain imaging and detailed CSF analysis can lead to early detection and treatment of EBV Hemorrhagic Encephalitis with favorable outcome.

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