

Case Report

Postpartum herpes encephalitis that apply with status epilepticus: case report

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Abstract: Fever, headache and altered mental status are known as the most common symptoms of Herpes simplex virus encephalitis (HSVE). Patients rarely can admission to hospital only with focal or generalized epilepsy. Early diagnosis and treatment are important in the prognosis of the disease. HSVE can occur at the second or the third trimester of pregnancy but there is a limited number of case studies on in postpartum period in literature. This report is presented with the aim of calling attention to differential diagnosis of HSVE in patients with only generalized epilepsy in postpartum period without other symptoms in the last period of pregnancy.

Keywords: Herpes simplex virus encephalitis, status epilepticus, pregnancy, postpartum period

Introduction

Herpes simplex virus encephalitis (HSVE) is the most frequently seen form of viral sporadic encephalitis. The annual incidence of encephalitis is 1/250.000-500.000, and the lack of diagnosis and management makes the mortality rate 70% [1, 2]. The clinical characteristics of HSVE are fever, headache and altered mental status. Focal neurological deficits and generalized seizures may also occur [2]. Today the gold standard for diagnosing the disease is the detection of HSV DNA with polymerase chain reaction in the cerebrospinal fluid (CSF) [3]. On cranial magnetic resonance imaging (MRI), contrast enhanced lesions in the temporal and inferior frontal lobes are typical of encephalitis [4]. In this paper, a postpartum case brought to the emergency service with generalized seizure only -without fever or headaches, which are also the characteristics of HSVE- is presented with literature.

Case

A twenty-two-year-old female patient who gave birth by Cesarean section in a private hospital a day before the application was brought to the

emergency service with seizure and closure of consciousness. In the anamnesis, the patient reported one-week weakness but no other known chronic disease history or complaints. The patient was presented to the emergency service with sudden loss of consciousness and status epilepticus, and the blood pressure, pulse rate and body temperature readings were 130/60 mmhg, 110 bmp and 37°C respectively. In the physical examination, the systemic findings were normal apart from the loss of consciousness. The neurological examination revealed a closure of consciousness, nuchal rigidity and positive Brudzinski and bilateral Babinski signs. There were no lesions in her body, mouth and genital area. The laboratory analysis showed that apart from the white blood cell: 13.000/mm³ and the C-reactive protein (CRP): 4.96 mg/dl (N.0-0.5), the liver enzymes, serum electrolyte values and platelet number were within normal limits. In the differential diagnosis of the symptoms, the expected eclampsia, hypocalcemia and venous thrombosis were not diagnosed. The epileptic seizures were controlled with diazepam and phenytoin. MRI showed a large lesion in the right temporal lobe extending to the hippocampus and insular

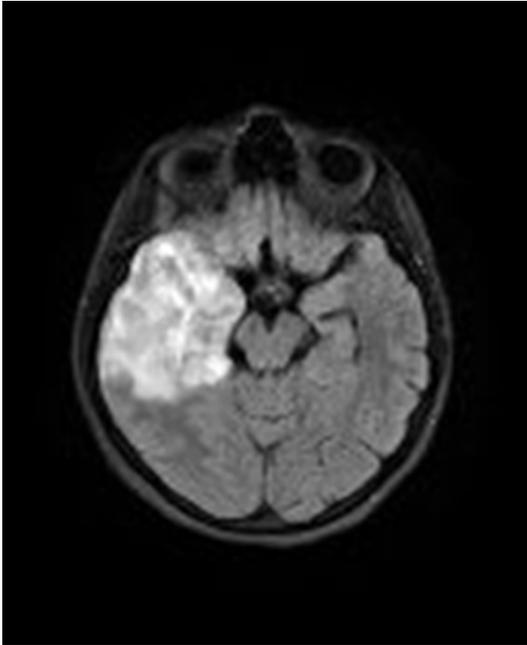


Figure 1. MRI shows a large lesion in the right temporal lobe extending to the hippocampus and insular cortex with hyperintense signal intensity on axial FLAIR and T1-weighted images respectively. High signal intensity on T1W images was related with the haemorrhage.

cortex with hyperintense signal intensity on axial FLAIR and T1-weighted images respectively. High signal intensity on T1W images was related with the haemorrhage (**Figure 1**). The patient was thought to have encephalitis in pre-diagnosis due to headache, seizure and cranial imaging findings. Thus, lumbar puncture was planned. The CSF cell count was carried out with Thoma lame and lymphocyte and erythrocyte counts were $120/\text{mm}^3$ and $50/\text{mm}^3$ respectively, and the biochemical analysis revealed that glucose was 72 mg/dl (simultaneous blood sugar was 98 mg/dl) and protein was 500 mg/dl. No microorganisms were seen in gram stain and no reproduction occurred in bacterial cultures. The patient pre-diagnosed with encephalitis and hospitalized as a result of the CSF and cranial MR findings was given acyclovir 750 mg three times daily IV and levetiracetam 1000 mg once daily as antiepileptic treatment. The electroencephalography (EEG) showed slow wave activities in temporal and parietal lobes which were compatible with encephalitis. HSV Type 1 was found positive in CSF with PCR. On the third day of acyclovir treatment the patient regained consciousness and no epileptic sei-

zures were observed. After the 21-day-long treatment the patient was discharged with a normal neurological examination apart from a left hemiparesis. No complications or sequelae developed in the patient or her baby in the subsequent checkups.

Discussion

Herpes simplex virus is widely seen in the world and the only natural source of the virus is human. In 90% of the HSVE cases HSV Type 1 is the factor. In adults the disease occurs with the activation of HSV Type 1 found latent in neurons. HSV typically reaches the central nervous system along the olfactory pathways. HSV encephalitis is an infection which commonly develops with focal edema, necrosis and hemorrhage in temporal and frontal lobes [2]. The triad of fever, headache and altered personality are the most frequently seen first symptoms in encephalitis clinical examination. In some cases, the clinical table involves neurological findings such as motor weakness, confusion, aphasia, stupor, coma and focal or seldom generalized seizure [2, 5]. In case of a clinical doubt in HSVE diagnosis, CSF analysis is recommended with PCR and cranial MR [3, 6]. Cranial MR is the most sensitive imaging method and provides a supporting role in the diagnosis of characteristic frontotemporal lobe involvement in patients with encephalitis [2, 3, 6]. The gold standard for diagnosing herpes encephalitis is the detection of HSV type 1 in CSF with PCR. In literature there are cases with negative PCR at the onset of the disease which later becomes positive [7].

HSVE is an infection affecting the central nervous system of every age group and both sex [2]. Due to susceptibility to viral infections in pregnancy and postpartum period, herpes encephalitis must be considered in the differential diagnosis. Though inexplicable, physiological immunosuppression during pregnancy and weak natural-killer cell cytotoxicity in late pregnancy are indicated as the factors for HSV Type 1 infections [8]. There are 17 cases of herpes encephalitis during pregnancy in literature [9-12]. In these cases, encephalitis occurred mostly in the late second or the early third trimester of pregnancy. Herpes encephalitis in pregnancy may result in premature birth, fetal

Postpartum herpes encephalitis and status epilepticus

growth restriction and fetal loss which threaten the health of the mother and the baby [8, 10, 13].

There is a limited number of case studies on HSVE in postpartum period in literature. These studies highlight the possibility of confusing the complaints with the symptoms of many other diseases and thus, the necessity for encephalitis diagnosis [14, 15]. Due to different clinical findings, HSVE may misleadingly appear with the symptoms of noninfectious diseases such as epilepsy and cortical vein thrombosis. The literature involves a case misdiagnosed with cortical vein thrombosis instead of herpes encephalitis in postpartum period [16]. The patients diagnosed with encephalitis in postpartum period mostly had symptoms like fever, headache and altered personality and some cases had seizure and hemiparesis [15]. In our case, on the second day of postpartum period the symptoms of status epilepticus were encountered without a clinical history typical of encephalitis. Moreover, eclampsia, cerebral venous thrombosis, hematoma and vascular diseases were eliminated in diagnosis. As a result of the temporal area involvement seen on cranial MR which was implemented with the possibility of encephalitis, acyclovir treatment was started. Acyclovir treatment is recommended for 14-21 days intravenous with a daily dose of 30 mg/kg [17]. Early treatment is really important in HSVE prognosis. The studies show that as the time between the onset of the symptoms and the treatment is prolonged (>4 days), the morbidity and mortality rates increase [17]. In our case the patient regained consciousness on the third day of treatment with acyclovir and the epileptic seizures were controlled. After the 21-day-long treatment the patient was discharged without any complications or sequelae apart from a left hemiparesis.

In conclusion, this case is presented with the aim of considering encephalitis diagnosis in patients with closure of consciousness and seizure and raising awareness about the symptoms apart from the classic triad in postpartum period and contributing to the literature due to its rarity.

Disclosure of conflict of interest

None.

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Postpartum herpes encephalitis and status epilepticus

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