

# Herpes encephalitis with atypical localization presented through status epilepticus

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## ABSTRACT

Herpes virus is the most common cause of sporadic encephalitis. It usually manifests itself as fever, blurring of consciousness and epilepsy clinic. Mortality rate is quite high despite treatment. It is an infectious agent that radiologically seizes temporal lobe in a rate of 80% and is definitively diagnosed through positiveness of HSV-DNA in CSF. In this study, we have aimed at presenting a patient of ours, who, as a very rare case in literature, was accepted to anesthesiology intensive care unit from emergency service, due to status epilepticus, was diagnosed with parieto-occipital lobe involvement, and was finally discharged after having fully recovered.

**Key Words:** Encephalitis, herpes virus, status epilepticus

## Introduction

The most common cause of viral encephalitis is the Herpes Simplex Virus (HSV). HSV is latent in the mucosa, conjunctiva and in trigeminal nerve roots through entering the body from the damaged skin. It manifests placement in brain tissues and in cerebrospinal fluid (CSF) by showing retrograde spreading and reaching the brain, here causing what we call encephalitis. Fever, blurring of consciousness, severe headache are presented usually in high rates of protein in CSF. Although the incidence is observed at any age, it is most common between 5 and 30 years and the prevalence of the incidence increases over 50 years. In its diagnosis, brain biopsy used to be practiced in the past. As it was a very invasive method, the practice was abolished in while. Today, as the gold standard, the diagnosis is made by positive determination of HSV-DNA positiveness in the CSF sample, after analyzing via polymerase chain reaction (PCR).

## Case Report

60-year-old female patient was accepted to the emergency due to epileptic seizure. The patient was given general anesthesia and was intubated as the control of the seizures failed in spite of anti-epileptic treatment. The patient was taken to anesthesiology intensive care unit after brain

computed tomography (CT) scanning. There was no pathology in the brain CT. Pentobarbital infusion was applied to the patient. The patient's blood pressure was 120/68mmHg, radial pulse was 90/minute, body temperature was 36.8°C. In patient's laboratory analysis, the number of leukocytes was 13.700/mm<sup>3</sup> (5,200–12400/mm<sup>3</sup>), hemoglobin value was 10.2 g/dl (12-18 g/dl), 30.6% hematocrit value was (37–52%), and C-reactive protein value was 4mg/dl (0.1–0.8 mg/dl). Platelet count and biochemical parameters were normal. The patient underwent a lumbar puncture. In the sample taken here, CSF protein was 50mg/dl. Against an incident of meningitis, ceftriaxone treatment was applied (2g twice daily). On the same day the patient received cranial MRI scanning. Here, involvement was observed in the patient's occipital (Figure 1) and parieto-occipital area (Figure 2). The patient received 30mg/kg/day of acyclovir treatment in 3 doses. The next day the patient was awakened. No seizure of attack was observed. The antibiotic treatment was stopped. The acyclovir treatment was continued. After 21 days of treatment, the patient was discharged after complete recovery.

## Discussion

While HSV encephalitis develops in children and in adults due to primary infection, in later years, it develops as a result of spreading of the latent

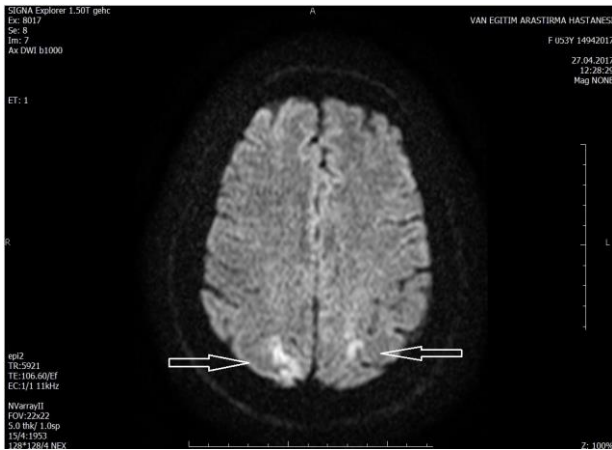


Fig. 1. MRI brain.

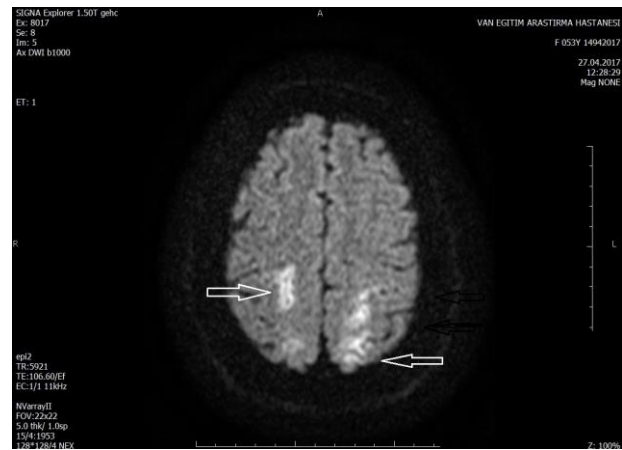


Fig. 2. MRI brain showing parieto-occipital area.

virus in peripheral nerves in a retrograde way. The clinical course has a few days of prodromal period of fever and headache. Then it can be followed with epileptic seizures, personality changes, and even hemiplegia and coma. The cause of this condition have not been fully explained. In its atypical presentations, it can show itself with intracerebral hematoma. The explanation for this mechanism is that the vasculitis developed in the brain due to HSV causes ruptures of small vessels in the brain, and causes hematoma by increasing the intracranial pressure (1,2).

In the early phase, Brain CT does not provide any findings. In our case as well, no pathology was found in the early cranial CT. Brain MRI however, makes diagnosis easier by providing early symptoms. Even though HSV has more involvement in temporal lobe, it must be remembered that, it can have involvement in other lobes as well. In our case parieto-occipital lobe involvement was presented (3).

The gold standard for diagnosis is PCR analysis. HSV-DNA in CSF can be detected with PCR, 24 hours after the onset of symptoms and can be detected until a week after the start of the treatment (4). But as PCR is not applied in our hospital, we decided to start HSV encephalitis treatment after suspecting the patient's MRI and the clinical condition of the patient.

The treatment of HSV encephalitis is applied as 30mg/kg/day acyclovir doses divided into three. While the success rate with treatment is 90% in early treatment, mortality rate due to late treatment is over

70%. The possible sequelae may be irreversible (5). In our case the patient was discharged after full recovery thanks to early diagnosis and treatment.

As a result, after practicing imaging methods, HSV encephalitis must be suspected in patients who come to the hospital with fever and epileptic seizures. In imaging, usually there might be unilateral temporal lobe involvement. However, it must be remembered that, there might be involvement in the parietal and occipital lobes in very rare cases like our patient.

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