

A case of acute impaired consciousness with high fever

Postgraduate Clinical Training Center

Kyoko IGAWA, Yuta FUKAI, Shoji HEMMI, Yoshihide SUNADA

Department of Neurology

SUMMARY

A 77-year-old woman exhibiting acute impaired consciousness with high fever is described in this case report. This article details the process of identifying and treating a suspected case of herpes encephalitis based on symptoms and examinations.

BACKGROUND

Herpes encephalitis is the most common cause of sporadic fatal encephalitis. Even with early administration of therapy following onset of the disease, nearly two-thirds of survivors will experience significant neurologic deficits. This condition is often characterized by rapid onset of fever, headache, seizures, focal neurologic signs, and impaired consciousness. Empiric therapy with acyclovir should be initiated as soon as the diagnosis is determined. It is important to identify suspected cases of herpes encephalitis using a process of differential diagnosis.

CASE PRESENTATION

The patient is a 77-year-old woman who was referred to our hospital by ambulance for acute impaired consciousness. She had been in excellent health and was supporting herself. A week before admission, she exhibited red spots on both eyelids. The night before admission, her son noticed she had been acting unusually and spoke using inconsistent answers and questions. She often repeated herself. On the day of admission, she went to a hospital to see her friend and nobody could communicate with her. It was suspected she had experienced a stroke

and was referred to the hospital by ambulance. Vital signs shown by the woman included BT 38.8°C, BP 173/133 mmHg, PR 88 /min (reg.), RR 28 /min, and SpO₂ 96%, while examination of the skin showed her face was a reddish hue. Other systems were normal. She was disoriented and could not give relevant answers to simple questions concerning her age or birth date. She appeared in an excited state, talked incoherently, and was restless and talkative. Brainstem reflexes were all normal and there were no symptoms of increased intracranial pressure such as headache or nausea. Increased reflexes were seen in all limbs, and Babinski and Chaddock signs were positive. There were no meningeal signs. Diffusion-weighted images showed hypersignal of the left temporal lobe and insular cortex. FLAIR images showed the same findings (Fig. 1). An electroencephalogram showed periodic lateralized epileptiform discharges (PLEDs) in the affected region (Fig. 2). Examination of cerebrospinal fluid (CSF) showed lymphocytic pleocytosis. A high glucose level was consistent with viral encephalitis. Antibody titers of HSV and VZV in the CSF were all negative. However, herpes simplex virus DNA was detected in the CSF by a polymerase chain reaction assay. The above results supported a diagnosis of Herpes simplex encephalitis.

TREATMENT

On the day of admission, treatment was soon started using 750 mg/day of acyclovir. But her conscious level decreased gradually on the second day. We then increased the acyclovir dosage and

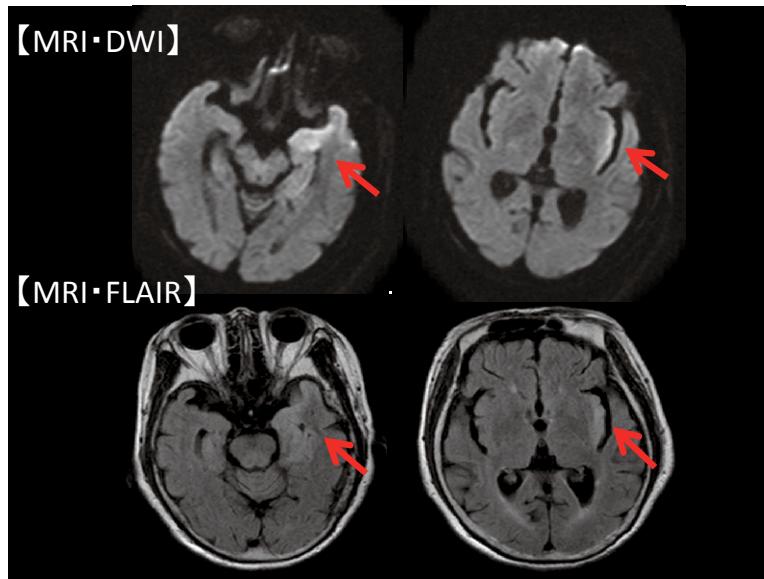


Fig. 1 Magnetic resonance images (MRI) of the brain. Diffusion-weighted images showing hypersignal of the left temporal lobe and insular cortex. FLAIR images show the same findings.

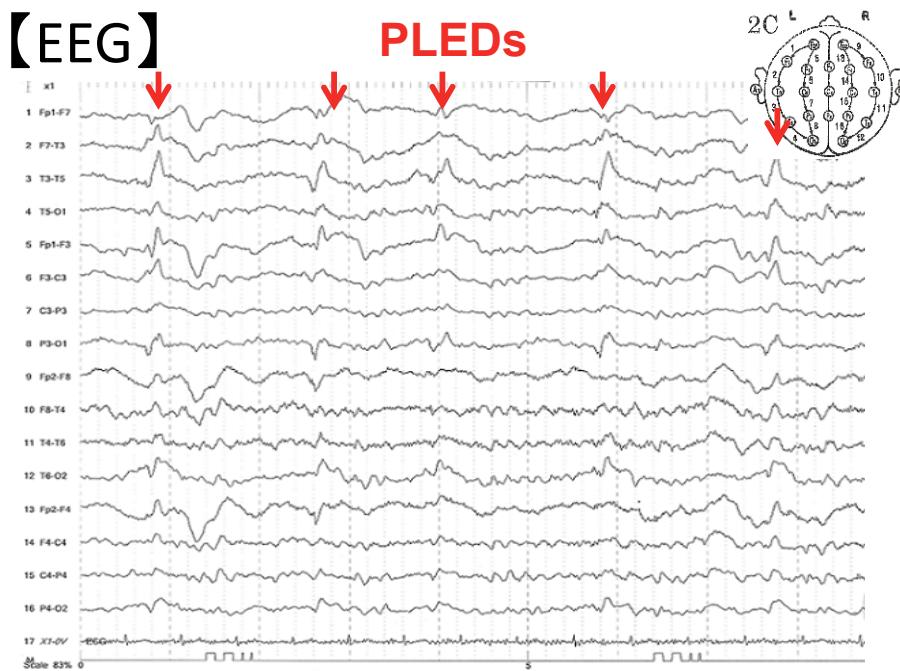


Fig. 2 Electroencephalogram showing periodic lateralized epileptiform discharges (PLEDs) in the affected region, namely, the left temporal lobe area.

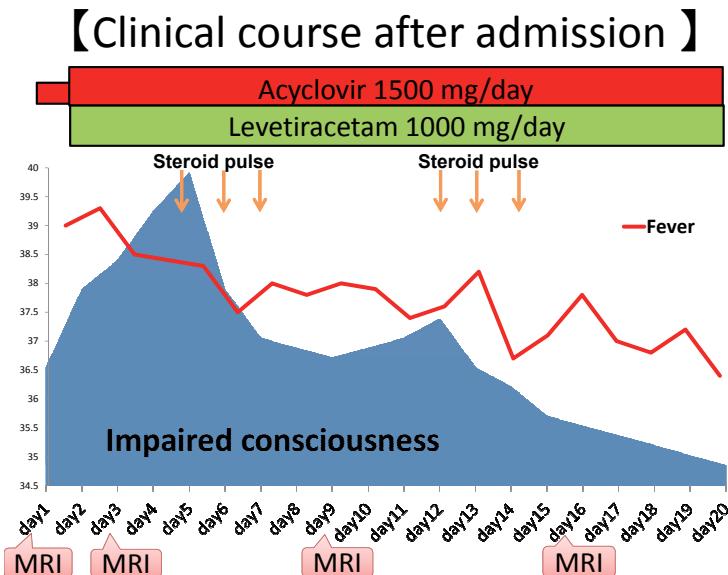


Fig. 3 Clinical course after admission.

On the day of admission, we started treatment using 750 mg/day of acyclovir. But on the second day, the patient's conscious level decreased gradually. We then increased the acyclovir dosage and started levetiracetam treatment because we thought her condition was related to nonconvulsive status epilepticus (NCSE), high fever, or progression of encephalitis. The patient's conscious level on the 5th hospital day was very critical. We thought her condition was related to encephalitis. We then used steroid pulse therapy with acyclovir. The steroid pulse treatment was dramatically effective and her conscious level improved. After 3 weeks of acyclovir administration and a second steroid pulse treatment, her consciousness level improved gradually. We performed MRI examinations and assessed the level of cerebral edema.

started levetiracetam treatment because we thought her condition was related to nonconvulsive status epilepticus (NCSE), high fever, or progression of encephalitis. The patient's conscious level on the 5th hospital day was very critical. We thought her condition was related to encephalitis. We then used steroid pulse therapy with acyclovir. The steroid pulse treatment was dramatically effective and her conscious level improved (Fig. 3).

OUTCOME

After 3 weeks of acyclovir administration and a second steroid pulse treatment, her consciousness level improved gradually. We performed MRI examinations and assessed the level of cerebral

edema. On day 3, the hypersignal of the left temporal lobe and insular cortex worsened and edema had progressed. After steroid pulse treatment, the level of cerebral edema improved. In addition, PLETs disappeared 3 weeks after acyclovir administration and a second steroid pulse treatment.

LEARNING POINTS

We encountered a case of typical herpes encephalitis. It is important to remember that signs of rapid psychiatric and encephalitis symptoms might suggest herpes encephalitis. In such cases, acyclovir administration should be started as soon as possible. Our case study indicates that rapid treatment is the most important factor.