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Herpes simplex encephalitis in pregnancy

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INTRODUCTION

Herpes simplex encephalitis (HSE) is the most common cause of acute and sporadic viral encephalitis, usually due to the relapse of Herpes simplex (HSV) type 1 infection. It usually presents itself with headache, fever, impaired consciousness, and new onset of seizures [1, 2]. The diagnosis of HSE is mainly based on PCR detection of HSV DNA in cerebrospinal fluid (CSF), but magnetic resonance imaging (MRI) findings have also been found useful in course of differential diagnosis [2].

Treatment with acyclovir *i.v.* should be administered based on the clinical presentation, even before obtaining confirmation of microbial presence, as initiating treatment early increases patient's chances of recovery. Without treatment, mortality reaches up to 70% and even when treated HSE is fatal in 20–30% of patients [3]. More than half of the survivors of HSE experience long-term neurological complications.

CASE PRESENTATION

A 27-year-old woman at 32 + 3 weeks gestation (gravida 1, para 1) presented to the obstetrics department with onset of fever and meningeal signs. She was conscious, but with qualitative disorders of consciousness, auto- and allopsychic disorientation and short-term memory impairment. The day before admission she had experienced three generalized tonic-clonic seizures, nausea, and vomiting. The diagnosis of HSE was based on PCR confirmation of HSV type 1 presence in CSF. Additional MRI (Fig. 1) and electroencephalography (EEG) (Fig. 2) changes were also found. In line with consultations of neurologists and infectious diseases specialists, the patient was administered paracetamol *i.v.*, acyclovir *i.v.*, lamotrigine *p.o.* (changed for levetiracetam *p.o.* in course of hospitalization), dexamethazon *i.v.*, and enoxaparin *s.c.* After two days of treatment, the fever ceased, and the patient regained auto- and allopsychic orientation.

State of the fetus has been strictly monitored — apart from periodic tachycardia and signs of growth restriction no abnormalities have been found and there were no signs of possible premature birth. The patient was discharged at her own request after 25 days of hospitalization, with viable pregnancy,

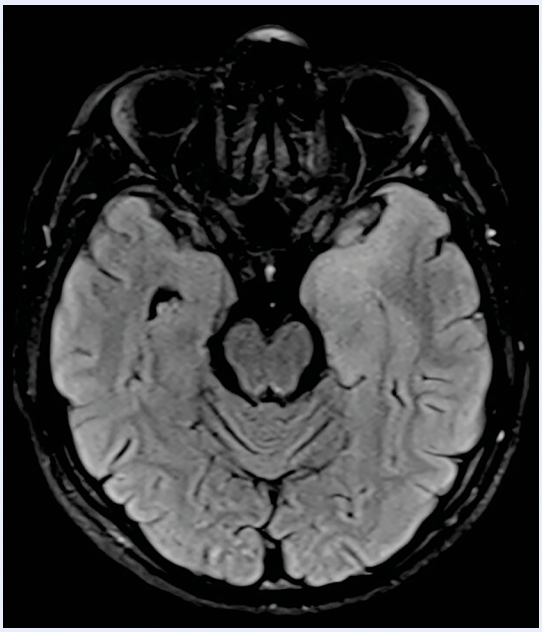

Figure 1. MRI, FLAIR sequence showing hyperintense signal and oedema of the left temporal lobe structures

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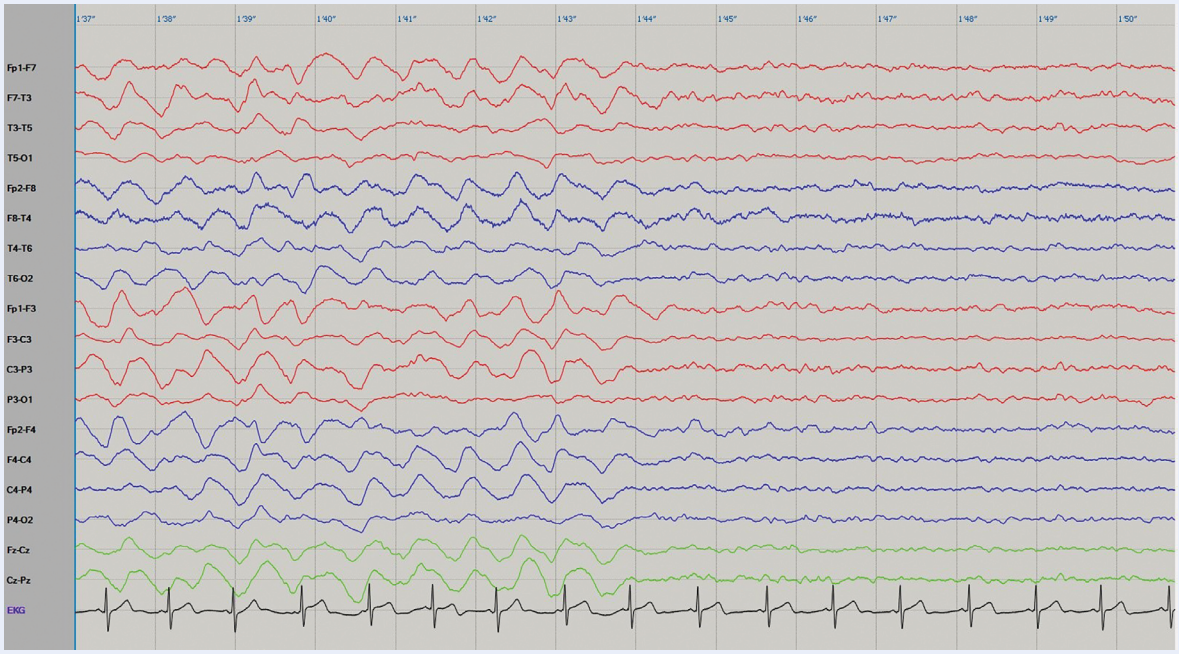

Figure 2. EEG. Frontal intermittent rhythmic delta activity (FIRDA) and mild background slowing

no recurrent seizures and residual bilateral positive Sterling, Jacobsohn, Hoffmann, Babinski and Chaddock signs. In 2-month follow-up no seizures reappeared.

A baby boy was delivered at 37 + 3 weeks' gestation via cesarean section due to the risk of acute perinatal asphyxia and was assessed as small for gestational age (SGA) (birth weight = 2280 g). His CSF tested positive for HSV type 1 antibodies but was negative for HSV DNA. He developed no signs of possible HSV infection.

DISCUSSION

HSE in pregnant patients is an extremely rare finding. It is usually diagnosed during late second and early third trimester, possibly due to the altered immunological response resulting in higher susceptibility to viral infections, which can lead to fetal growth retardation or premature birth. Differential diagnosis should include *e.g.*, eclampsia, cerebral venous thrombosis and metabolic imbalances [1, 4]. Early acyclovir administration is crucial for increasing patient's chances of recovery and its use in pregnancy has been proven to be safe and not associated with an increased rate of birth defects [1, 4]. In case of onset of seizures, anti-epileptic drugs with the highest safety profile for fetus (*e.g.*, levetiracetam and lamotrigine) should be administered in lowest effective doses [1].

Neonatal herpes infections are uncommon and mainly (85% of the cases) acquired during vaginal delivery due to the maternal HSV type 2 infection and presence of herpetic lesions in the maternal genital tract. In utero and postpartum infections are even more sporadic [4].

Article information and declarations

Conflict of interest

All authors declare no conflict of interest.

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