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Late-onset Epilepsy with Hyponatremia

Hiponatremi ile Giden Geç Başlangıçlı Epilepsi Olgusu

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Dear editor,

"Autoimmune encephalitis" refers to a group of subacute-onset diseases that may progress with memory impairment, changes in the state of consciousness, movement disorders, psychosis, autonomic disorders, and epileptic seizures. Paraneoplastic and immunological causes have been indicated in etiology (1). A rare cause of autoimmune encephalitis is anti-leucine-rich glioma inactivated 1 antibodies. It causes autoimmune limbic encephalitis (ALE) with temporal lobe seizures and hyponatremia (2). Furthermore, ALE is more common in men, and the age of onset is typically between 61 and 64 years (3).

A 74-year female patient was brought to the emergency room after having an epileptic seizure at home. From the history provided by her family, it was clear that she had behavioral arrest, perseveration, and clonic seizures in the right hand. Blood tests showed a sodium value of 104 mmol/l (normally 136-145 mmol/l). Levetiracetam (3.000 mg) was given intravenously as a loading therapy, followed by supplemental treatment of 1.000 mg daily. In addition, the patient was treated with intravenous hypertonic saline for hyponatremia.

The patient's cranial magnetic resonance imaging (MRI) scan showed an increase in the T2A signal and volume at the left hippocampus and temporal lobe (Figure 1a, b). When the MRI scans of patients with ALE were examined, a hyperintense appearance, often bilateral, in T2A and flair sequences in the mesial temporal lobe or hippocampus, extending to the amygdala, striatum, and insula, were observed (3).

The patient's electroencephalogram showed sparse left temporal theta paroxysms (Figure 2a, b). Although there was no specific electroencephalography finding in the patients with ALE, interictal epileptiform discharges were observed. Continuous slow activity and frontal intermittent rhythmic delta activity are frequently seen in electroencephalography recordings of encephalopathy patients (1,3).

No significant findings resulted from the patient's cerebrospinal fluid examination. After the exclusion of an infectious etiology, the paraneoplastic auto-antibody panel (which includes antibodies for amphiphysin, anti-collapsing response mediator protein 5, paraneoplastic antigen Ma2, anti-neuronal nuclear antibody type 2, anti-purkinje cell antibody, anti-neuronal nuclear antibody type 1, recoverin, anti-glial nuclear antibody, titin, Zic4, anti-glutamic acid decarboxylase 65 and anti-delta/notch like epidermal growth factor-related receptor) was studied, and the result was negative. In the autoimmune encephalitis panel, anti-leucine-rich glioma inactivated 1was positive. The cancer screening tests were negative; it is known that only 11% of patients have a primary malignancy (4).

The occurrence of seizures with hyponatremia creates the misconception that these seizures develop symptomatically and secondary to hyponatremia. For this reason, many patients with

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This case was presented as an undisputed e-poster presentation at the 1st National Clinical Neurophysiology EEG-EMG Virtual Congress in 2020.

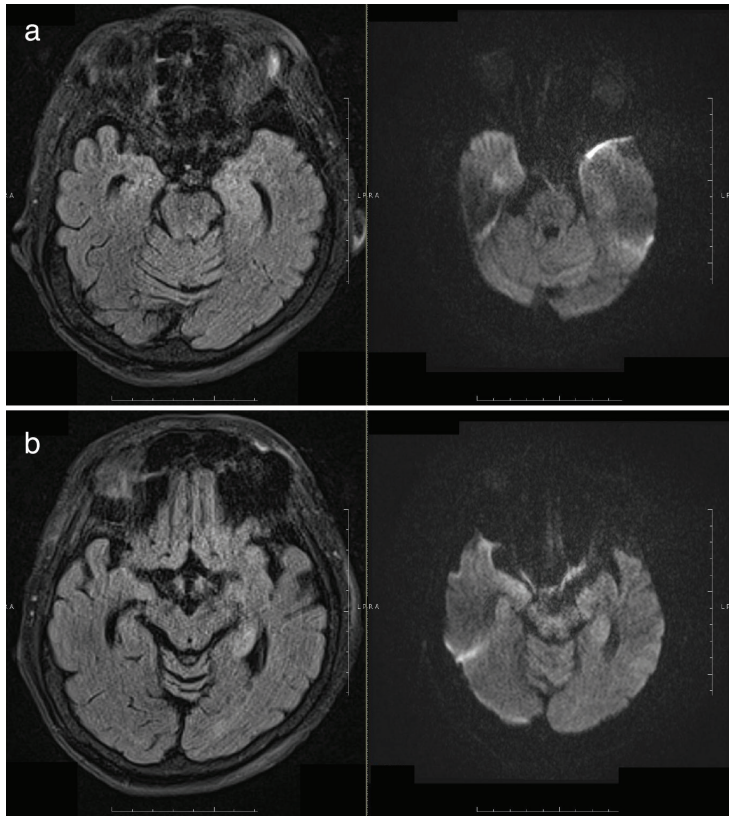

Figure 1. a, b) Cranial magnetic resonance imaging showing an increase in the T2A signal and an increase in volume at the left hippocampus and temporal lobe

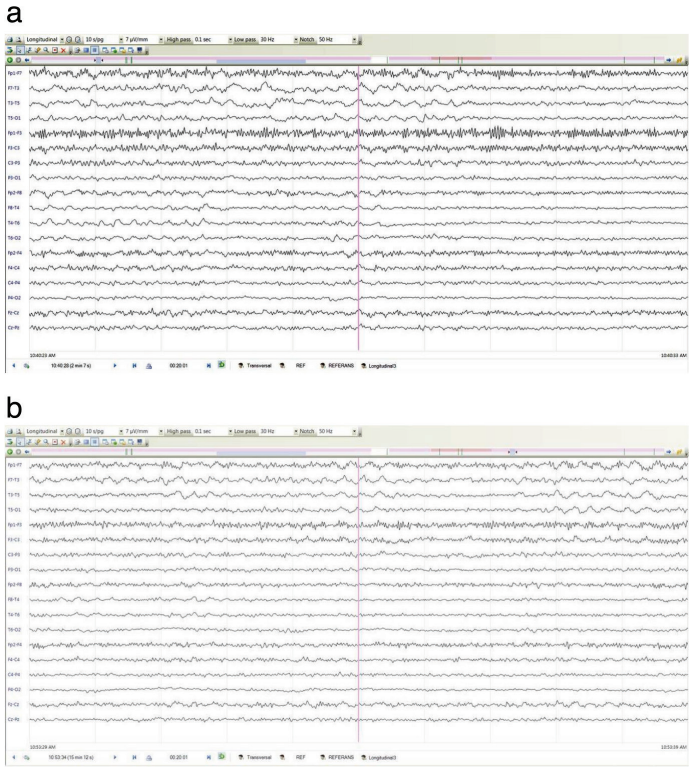

Figure 2. a, b) Sparse left temporal theta paroxysms in the electroencephalogram

ALE can be misdiagnosed; consequently, they may only receive symptomatic seizure and hyponatremia treatments. Without treatment for the autoimmune disease, objective improvement will not be observed in these patients.

Intravenous immunoglobulin, plasmapheresis, or intravenous pulse steroids are the preferred treatments (3). This patient was given intravenous immunoglobulintherapy for five days at a dose of 0.4 g/kg/day as an immune regulatory therapy, based on her diagnosis. With improved consciousness and no observed seizures, the patient was discharged with an oral steroid and supplemental 1.000 mg/day of levetiracetam. No epileptic seizures were reportedin the patient's follow-up.

Ethics

Informed Consent: Written consent was obtained.
Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: M.B.Ç., F.K., S.B., G.K., Data Collection or Processing: M.B.Ç., F.K., S.B., G.K., Analysis or Interpretation: M.B.Ç., F.K., S.B., G.K., Literature Search: M.B.Ç., F.K., S.B., G.K., Writing: M.B.Ç., F.K., S.B., G.K.

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