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Case Report

Acute psychosis during the postictal period in a patient with idiopathic generalized epilepsy: Postictal psychosis or aggravation of schizophrenia? A case report and review of the literature

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ABSTRACT

Postictal psychoses are common comorbid conditions of temporal lobe epilepsy and are reported to be characterized by affective changes. However, postictal psychoses are rare among patients with idiopathic generalized epilepsy, and the causal relationship between postictal psychoses and idiopathic generalized epilepsy is unknown. Here, we report the case of a man who had idiopathic generalized epilepsy and experienced 4 episodes of schizophrenia-like interictal psychosis before the age of 41 years. At the age of 56 years, he experienced a generalized tonic-clonic seizure for the first time in 15 years and developed psychotic symptoms on the next day. Notably, in addition to the schizophrenia-like symptoms, the patient experienced mania-like symptoms such as elated mood, grandiose delusions, agitation, and pressured speech during the last psychotic episode in the postictal period. It was suspected that postictal neuronal processes and a predisposition to endogenous psychosis both contributed to the psychopathology of this episode.

1. Introduction

Although the association between epilepsy and psychosis has been noted since the mid-nineteenth century, the role of seizures in the pathogenesis of psychoses in patients with epilepsy and whether epileptic psychosis and endogenous psychosis, such as schizophrenia, are the same are unknown [1–3]. Psychoses, comorbid with epilepsy, are classified according to the temporal relationship between seizure and psychosis and according to the type of epilepsy. Many studies have focused on the heterogeneity of epileptic psychoses [4–7]. Postictal psychosis is a type of epileptic psychosis that presents within a week of a seizure or a cluster of seizures and is known to be associated with temporal lobe epilepsy (TLE); however, this condition is rare among patients with idiopathic generalized epilepsy (IGE) [4,5,8–11]. Previous studies have documented that affective changes are frequently observed during postictal psychoses [10–12], and a case–control study indicated that postictal psychoses have a greater number of mania-like symptoms rather than schizophrenia-like symptoms, whereas interictal psychoses have a greater number of schizophrenia-like symptoms [4]. Our case report describes the case of a patient who had IGE and experienced 4 episodes of schizophrenia-like interictal psychosis before the age of 41 years. He did not experience any seizures or psychotic episodes from the age of 41 years to 56 years. At the age of 56 years, he experienced a generalized tonic-clonic seizure, which was followed by acute psychosis during the postictal stage; the psychosis was characterized by both schizophrenia-like and mania-like symptoms. In light of these findings, we have reviewed the current literature on epilepsy and postictal psychoses.

2. Case report

Informed consent was obtained from the patient and his family for this case report, and details that might disclose the identity of the patient have been omitted. The patient was a right-handed 56-year-old man with a history of febrile seizures; his first generalized convulsion occurred at 7 years of age. Although phenobarbital was administered subsequently, he experienced generalized tonic-clonic seizures not accompanied by aura a few times a year. He was a good student in high school, and he majored in science from one of the most prestigious universities in Japan. In his early twenties, he gradually became

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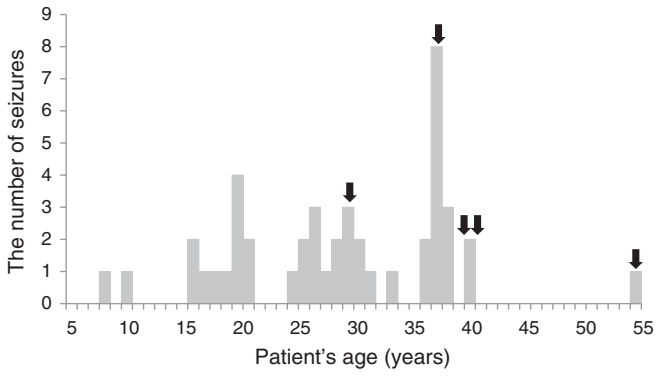

Fig. 1. Seizure frequency and psychotic episodes. Black arrows designate the episodes of psychosis.

suspicious that his seizures were the result of an assault by someone. After graduating from university, he became a high school teacher at the age of 26. At the age of 30 years, he experienced financial issues. While he was concerned with the dispute, his suspiciousness developed into a persecutory delusion that he had been attacked with high-frequency waves by an "offender;" consequently, he was hospitalized for 3 weeks at 31 years of age. The seizure frequencies are illustrated in Fig. 1.

After this first psychotic episode, he returned to work as a high school teacher and continued teaching until 38 years of age when a psychotic episode characterized by persecutory delusions, auditory hallucinations, including hearing the commanding voice of the "offender," and disorganized behavior occurred. He was unwilling to take antiepileptics. When the frequency of seizures reached as many as 8 per year, he was referred to an epilepsy center in Japan. Electroencephalogram (EEG) showed a very rare synchronized symmetrical bilateral diffuse spike-and-wave during the sleeping state (Fig. 2). His epilepsy was diagnosed as IGE on the basis of the clinical semiology of seizures and EEG findings. Subsequently, 400 mg/day of valproate and 4 mg/day of haloperidol were administered, which greatly reduced the frequency of seizures and resolved the psychosis. He experienced acute schizophrenia-like psychoses, characterized by delusion and hallucination, at the ages of 40 and 41; each episode remitted within 1 month without hospitalization. All these psychotic episodes occurred at >1-month interval from the nearest past seizures.

After the fourth psychotic episode, his seizures remitted and psychosis was not observed. He stopped working as a regular teacher at the age of 47 years and helped his family on their farm later; he did not marry. He has a strong family history of psychiatric illness among his first-degree relatives; his younger brother has epilepsy, acute transient psychosis, and mild retardation; his father was diagnosed with depression and committed suicide.

At the age of 56 years, he once attended to his mother overnight when she was sick. The next morning, he experienced a generalized tonic-clonic seizure for the first time in 15 years. On the next day, he began complaining about various somatic discomforts, including pain in his penis. He visited several physicians and surgeons, but no objective abnormalities were detected. Five days after the seizure, he began to hear the voice of the "offender," who directed him to "make emergency calls to police." His family witnessed his conversations with the voices. Because increasing the dosage of antipsychotics was ineffective, he was involuntarily hospitalized 21 days after the seizure. On admission, the patient was markedly elated, agitated, and talkative. Persecutory delusion, grandiose delusion, and conversations with voices were observed. He refused psychiatric examination and began shouting, for example, "I am the president of X University" and "I can receive air wave because the receiver has been implanted in my brain." He also complained that his penis was made painful by the "offender." Neurological examinations, laboratory data, computed tomography (CT), and magnetic resonance imaging (MRI) of the head showed no abnormality. EEG taken on admission showed 11 Hz, 50–100 μV, well-organized bi-occipital dominant α rhythm at rest with no paroxysmal discharge.

Treatment with intravenous haloperidol was initiated. By the third week of hospitalization, elated mood, agitation, pressured speech, and grandiose delusion had remitted; therefore, intravenous haloperidol was gradually replaced with oral haloperidol (~36 mg/day) and levomepromazine (~125 mg/day). By the seventh week of hospitalization, the auditory hallucinations and persecutory delusions had almost resolved. However, avolition and psychomotor inhibition became prominent, because of which the dosage of antipsychotics was changed to 4.5 mg/day of haloperidol and 125 mg/day of chlorpromazine. The patient was discharged 115 days after the admission. At the time of discharge, he had no current hallucinations or delusions, although he lacked insight that the voices he previously heard were hallucinations.

The Young Mania Rating Scale (YMRS) [13] and Positive and Negative Syndrome Scale (PANSS) [14] were evaluated weekly during the hospitalization. Fig. 3 illustrates the changes in YMRS scores and the positive and negative scales of PANSS. EEGs were performed repeatedly, but paroxysmal discharge was undetected. The results of the Wechsler Adult Intelligence Scale — Revised (WAIS-R) indicated borderline intelligence with significant decrease in performance intelligence quotient (IQ) relative to verbal IQ (full scale IQ, 80; verbal IQ, 92; performance IQ, 69).

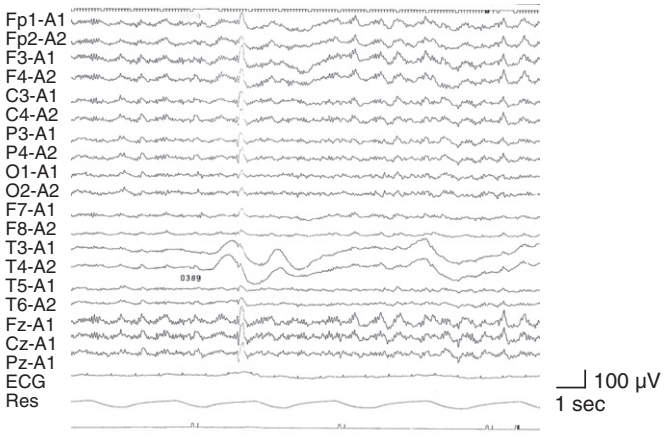

Fig. 2. An electroencephalogram taken at 39 years of age. Bilateral diffuse spike-and-wave was recorded.

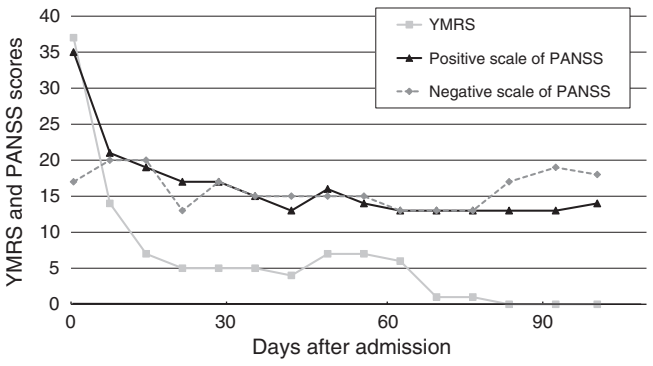

Fig. 3. Young Mania Rating Scale (YMRS) scores and positive and negative scale scores of Positive and Negative Syndrome Scale (PANSS) during hospitalization.