

Acute Psychosis in Post-Seizure Epilepsy Patient: A Case of Post-ictal Psychosis (PIP)

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Abstract

Postictal psychosis (PIP) is a type of peri-ictal psychosis. PIP was defined as a psychotic episode that begins less than one week after the epileptic seizure, especially the focal seizure group with disturbance of consciousness with or without evolution to generalized tonic-clonic seizures (GTC). In patients with epilepsy, complex factors play a role in the neuropsychiatric effects of epilepsy. The concept of epileptic psychosis implies that epilepsy presupposes a specific psychotic disorder, which would not exist in the absence of epilepsy. This case report describes the clinical features of PIP, characterized by persecutory delusions, visual and auditory hallucinations, and sleep disturbances in a male patient with uncontrolled long-standing epilepsy with a history of non-adherence to antiepileptic medication. The patient was then treated with risperidone 0.5 mg twice a day and lorazepam 1 mg once a day at night. The patient is also educated to take his antiepileptic drugs regularly.

Keywords: psychosis, epilepsy, post-ictal psychosis.

Introduction

In patients with epilepsy, there is an increased incidence of psychiatric morbidity, with an increase in the rate of affective disorders of approximately 25-74%, anxiety disorders of 10-25% and psychosis of 2-7%. A meta-analysis study found that the pooled event rate of suicidal ideation in epilepsy patients was 23.2%. Psychiatric morbidity is closely related to seizure attacks and is called peri-ictal (pre-ictal, ictal and postictal). The occurrence of neuropsychiatric disorders in epilepsy patients is influenced by several factors, such as the epileptogenic focus, onset, duration, pattern of seizures, frequency, medication, and psychosocial factors [1] - [4].

The concept of epileptic psychosis implies that epilepsy presupposes a specific psychotic disorder, which would not exist in the absence of epilepsy. However, epileptic psychosis is not recognized as a separate entity in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), in which epileptic psychosis is classified under the heading "Psychotic disorders due to other medical conditions" with the characterization "epilepsy" in the mental disorder code. Epilepsy is a disorder in which the patient tends to have recurrent unprovoked seizures. Psychotic disorders are classified according to the chronology of onset in relation to the seizures in three main frameworks: (1) ictal psychosis, in which the psychotic symptoms are an expression of epileptic seizure itself; (2) postictal psychosis, in which the patient returns to normal functioning; (3) interictal psychosis, which is more common than ictal psychosis, in which the psychotic symptoms are associated with the presence of epilepsy (active or in remission) but without a chronological relationship to the seizure [5] - [8].

According to the Logsdail and Toone diagnostic criteria, PIP was defined as a psychotic episode that begins less than one week after the epileptic seizure, especially the focal seizure group with disturbance of consciousness with or without evolution to generalized tonic-clonic seizures (GTC). PIP classically appears after about ten years of active epilepsy. PIP occurs in individual episodes of psychosis after a lucid interval of 8 hours to 3 days after a seizure or a group of seizures. The clinical presentations frequently observed in PIP include delusions, such as religious or somatic delusions, visual or auditory hallucinations, and mood disturbances. Logsdail and Toone define a PIP duration ranging from 15 hours to two months. In general, PIP lasts less than one week and rarely more than two weeks, with an average duration of 70 hours [9], [10].

Case Report

A 36-year-old man was brought to the emergency room by his wife because, according to his wife, for the last three days, the patient stated that he felt that his neighbour wanted to kill him because of his mother's unpaid debt. The patient claims to have seen his deceased mother and heard voices calling his name. The patient also complained of difficulty falling asleep, so the patient seemed restless. The symptoms of psychosis that he experienced arose after the patient experienced four episodes of seizure attacks in the last five days. A single seizure episode lasts for about 1-2 minutes, with a bilateral tonic-clonic seizure pattern. The patient's wife admitted seeing the patient's face twitch before falling and then having a generalized seizure. In the fourth seizure episode, according to his wife, the patient appeared confused for about 30 minutes postictal and improved after that. Twenty-four hours after the fourth seizure episode, the patient started screaming because the patient claimed to have seen his deceased mother. The patient is known to have been diagnosed with epilepsy since the patient was 15 years old; the patient has been treated with carbamazepine and lamotrigine. However, these two drugs are not routinely consumed, so epilepsy is not controlled. The patient denied any history of previous trauma. History of substance abuse was denied. The patient had previously undergone magnetic resonance imaging (MRI) examination, showing bilateral partial atrophy of the parietooccipital lobes, relatively smaller left hippocampus than right, and no other pathological lesions on MRI.

On physical examination, blood pressure, heart rate and respiratory rate were found within normal limits. The patient's electrolyte values, blood sugar levels, toxicology screening, and complete blood count were within normal limits on laboratory examination. The patient was then referred to the Psychiatry department and was treated with risperidone 0.5 mg twice a day and lorazepam 1 mg once a day at night. The patient is also educated to take medication for epilepsy regularly and return to the psychiatrist to control his psychotic symptoms further.

Discussion

Various risk factors have been associated with epilepsy-related psychosis, such as temporal lobe epilepsy (TLE), a family history of psychosis or affective disorder, early onset epileptic seizures, history of status epilepticus, and uncontrolled epilepsy. In this case, the patient's wife admitted seeing the patient's face twitch before falling and having a generalized seizure. Temporal lobe epilepsy usually presents with seizure activity originating in the medial or lateral temporal lobes. Symptoms of temporal lobe epilepsy may include (1) focal conscious seizures, which include specific sensory symptoms, autonomic manifestations, somatosensory events, cognitive disturbances, and emotional symptoms; (2) seizures focal disturbances of consciousness, which may progress to loss of consciousness; during this development, the patient may exhibit a fixed gaze, dilated pupils, and automatisms such as unilateral facial-oral muscles or dystonic limb postures may appear; (3) focal seizures, which may extend to involve both hemispheres and often manifest as bilateral tonic-clonic seizures. In individuals with suspected TLE, an EEG should be performed to help localize the epileptic focus, which was not done in this case. Hence, a definite diagnosis of TLE is challenging, but the pattern of seizures reported by the patient's family is consistent with TLE. The patient's wife refused the EEG examination due to the relatively expensive cost of the examination, as the patient did not have health insurance. Uncontrolled epilepsy was also found in cases, which is also a risk factor for epilepsy-related psychosis [10] -[12].

In this patient, persecutory delusions, visual hallucinations, auditory hallucinations, and sleep disturbances were found. Symptoms occur after a symptomfree period of approximately 24 hours after a cluster of focal seizures with secondary generalization. Psychosis is a psychiatric disorder that often overlaps significantly with neurological disorders. There are various medical conditions and substance use that can cause psychotic symptoms. Duration, life stressors, precipitating factors, and age of onset are essential in helping to differentiate primary psychotic disorder from secondary psychosis [7], [13]. In this case, based on the history and clinical presentation, the patient was diagnosed with PIP. Based on the literature, PIP is usually characterized by brief delusional episodes with hallucinations that occur after a lucid interval following a group of focal seizures. Logsdail and Toone proposed the following PIP criteria: (1) episodes of confusion or psychosis, which can occur immediately after the seizure or within a week after a period of normal mental state; (2) episodes lasting 24 hours to three months; (3) a mental state which includes (a) blurred consciousness, disorientation, or delusions (b) delusions, hallucinations in clear consciousness (c) a mixture of (a) and (b); (4) the mental abnormality is not secondary to other causes such as the use of antiepileptic drugs, alcohol use, and trauma [14].

In previous studies, the relationship between bilateral EEG abnormalities and psychosis in patients with seizures has been identified. Generally, PIP shows increased epileptiform discharges and slow waves on the EEG. However, these changes were not found in all cases of PIP [15].

The MRI features of the patient in this case report were partial atrophy of the bilateral parietooccipital lobes, the left hippocampus was relatively smaller than the right, and there were no other pathological lesions on MRI. Previous brain morphometric studies reported findings in epilepsy with psychosis, such as bilateral grey and white matter reduction, changes in cortical thickness, reduced grey matter in the left parietal lobe, and no psychotic effects that can significantly cause changes in brain morphology [16].

To date, there are no universally accepted treatment protocols for the management of epilepsy. Monotherapy is preferred whenever possible. Treatment choice depends on the type of seizure and the clinician's preference. In chronic epilepsy, initial monotherapy for generalized (tonic-clonic) seizures includes valproic acid, lamotrigine, levetiracetam, zonisamide, and topiramate. Patients who do not respond to monotherapy can be given alternative monotherapy, or therapy can be started in combination with a second drug. Add-on therapy for epilepsy with generalized seizures is usually another first-line drug (e.g., valproate, lamotrigine, levetiracetam) or

zonisamide [17], [18]. The therapy for epilepsy in this patient was in accordance with the literature, in which the patient had been given carbamazepine and lamotrigine.

Treatment for postictal psychosis includes benzodiazepines, low-dose antipsychotic drugs, or both [19]. In this case report, the patient received risperidone and lorazepam. Based on the literature, atypical antipsychotics may be the treatment of choice because of the low tendency of interactions with other drugs, low risk of seizures, and minimal motor side effects, and it is advisable to start from a small dose that can be increased slowly [20], [21]. Antipsychotic drugs, both first-generation and second-generation, can reduce the seizure threshold, increasing the likelihood of seizure induction. Chlorpromazine and drugs selective for mesolimbic dopamine receptors, such as clozapine, olanzapine, and quetiapine, have been linked to seizure provocation. Clozapine appears to produce more seizures at therapeutic levels than standard antipsychotic medications. Clozapine inhibits dopamine D4 receptors in the brain and mesolimbic structure, resulting in increased epileptogenicity, as hypothesized by the close relationship of seizure threshold with mesolimbic structure [22] – [24]. Treatment with benzodiazepines is frequently used for postictal psychosis among clinicians, although there are currently no clear management guidelines. In one study, lower cerebrospinal fluid levels of γ -aminobutyric acid (GABA) were found in first-episode psychotic patients, which may reflect widespread GABAergic neurotransmission reduction in the brain [20], [21], [25].

Postictal psychosis is usually self-limited. It is reported that 95% of episodes of posit-ictal psychosis resolve within one month. The mean duration of postictal psychosis was 1 to 63 days, with an average of 10 days. Treatment with antipsychotic drugs is associated with shortened episodes [26], [27]. In the case report, there was no previous history of psychosis either in the patient or in the family. Family history of psychosis, previous history of interictal psychosis, and impaired intellectual functioning have been associated with a longer episode duration [27].

Conclusion

This case report describes the clinical features of PIP, characterized by persecutory delusions, visual and auditory hallucinations, and sleep disturbances in a male patient with uncontrolled long-standing epilepsy with a history of non-adherence to antiepileptic medication. The patient was then treated with risperidone 0.5 mg twice a day and lorazepam 1 mg once a day at night. The patient is also educated to take medication for epilepsy regularly and return to the psychiatrist to control his psychotic symptoms further.

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