

Panic Disorder with Agoraphobia in a Patient with Post-Trauma Epilepsy: a Case Report

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Abstract —. Epilepsy is a significant health problem in society. Epilepsy prominently affects a person's quality of life, including social and psychological aspects, with the community's negative attitude and stigmatization also contributing to the decline of quality of life. Psychiatric comorbidities such as anxiety and mood disorders are found to be the most common comorbidities in epilepsy. We reported a 31-year-old male with anxiety, palpitations, headache, and nausea. These complaints were often felt by the patient in a crowded place and his wife did not accompany him. These complaints have been felt by the patient since his father died in 2014. He also had a history of seizures after an accident in 2008, although the seizures had been decreased to 3 to 4 times a month. The patient always worried that the seizure would recur. Examinations showed severe anxiety and moderate depression. EEG showed functional disturbances with epileptogenic potential. CT scan showed gliosis and temporal bone defect. The patient was diagnosed with post-trauma epilepsy and agoraphobia. The patient was treated with antiseizure, sleeping pills, antidepressants, cognitive behavioral therapy, psychotherapy, relaxation therapy, and family psychoeducation. 1 week after treatment, the headache was significantly reduced, and the patient reported sleeping better. This report showed the importance of assessing and treating psychiatric comorbidities in patients with epilepsy to improve their quality of life.

Keywords — panic disorder, agoraphobia, phobia, epilepsy, post-trauma epilepsy

How to cite: Fitiriani FN, Putra GFA, Syulthoni ZB. Panic Disorder with Agoraphobia in a Patient with Post-Trauma Epilepsy: a Case Report. Journal of Medicine and Health Technology. 2024.

Manuscript received 18 April 2024; revised 27 April 2024; accepted 29 April 2024. Date of publication 30 May 2024.
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INTRODUCTION

Epilepsy is a prominent health problem in society, because the problems are not only medical but also social and economic which befall sufferers and their families. In everyday life, epilepsy is a stigma for society. They tend to stay away from people with epilepsy. For ordinary people, epilepsy is considered an infectious disease (through foam coming out of the mouth), a hereditary disease, scary and embarrassing [1]. Epilepsy can occur in men and women, regardless of age and race. The number of epilepsy sufferers covers 1 - 2% of the population. In general, it is clear that the incidence of epilepsy shows a bimodal pattern, the peak incidence is in children and the elderly [2].

It is known that epilepsy is a complex disease. Patients with predisposition for seizures are also accompanied by various cognitive and social consequences. Depression and anxiety are some of the psychiatric symptoms that often underdiagnosed and undertreated, despite causing significant, negative effect on quality of life [3]. Previous study showed that psychiatric symptoms such as anxiety and mood disorders are the most common comorbidities in epilepsy [4]. Stigmatization and negative attitudes toward epilepsy are a vicious circle leading to worsening prognosis of epilepsy and difficulties in social reintegration of the patient with epilepsy [5]. Therefore, increasing the awareness of psychiatric problems in patients with epilepsy is needed. In this paper, we report a post trauma epilepsy patient with panic disorder and agoraphobia.

CASE ILLUSTRATION

A 31-year-old adult male patient presented with complaints of anxiety and chest palpitations. He is a neuropsychiatric patient with post-traumatic epilepsy. Currently, the patient experiences frequent feelings of anxiety and a pounding chest. He

often feels anxious everytime he exposed to very bright light, loud noise, or when he was in a crowded place alone since 2014. He experiences shortness of breath, perspiration, palpitation, and dizziness when they are anxious then his body becomes stiff and then he has seizures.

The patient said he started to have these feelings in 2014 after the patient's father died. The patient often feels worried since his father died. According to the patient, the only person who understands the patient's illness is his father. The patient is worried that the seizure will recur and that there is no one to help. The patient seemed to remember the incident when the patient had an accident in 2008. During this illness, the patient's father looked after him and took the control patient to the hospital. If there is a seizure, the patient's father has been caring for him. After the father died, the patient then married. The patient feels calmer as long as his wife is there, but sometimes feelings of anxiety still arise. The patient said that if he was not with his wife, feelings of worry and anxiety appeared more often. According to the patient, his seizure pattern changed. Previously, when the patient was about to have a seizure, what they felt was headache and nausea. After that the patient's body becomes stiff and the patient convulses. However, since 2014, the patient feels that if he is about to have a seizure, the patient becomes anxious. The patient feels tight, the chest is pounding, a feeling of worry appears, and the hands become cold and wet. After that the patient's hands and feet became stiff and the patient had seizures. Sometimes according to the patient, if there is a wife beside the patient who calms the patient when he feels anxious, the patient does not have a seizure.

The patient is feeling hopeless due to the lack of progress and the anxiety he is experiencing. The patient's seizures have indeed decreased a lot around 3-4 times in a month. The patient feels anxiety almost every day, becoming afraid to carry out activities without his wife's accompaniment. The patient is a stubborn person, has a strong will, and does not have many friends so the patient rarely tells other people about his problems. According to the patient, his wife is a good person, but sometimes he feels disappointed with his wife because she pays more attention to her pet and still cannot be as attentive as the patient's father. The patient feels that even though he has a wife, sometimes he often appears anxious when he is in a crowded place.

This patient was treated jointly by neurology and psychiatry colleagues because there were changes in behavior (anxiety) experienced by the patient after the patient's father died. The patient has a previous history of seizures due to an accident that occurred in 2008. The patient has been seeking treatment with a psychologist or psychiatrist since 2014. The patient suffers from post-traumatic epilepsy with a current differential diagnosis of panic disorder with symptoms of agoraphobia and moderate depression with somatic symptoms. The stages of management that have been carried out are: 1) After a psychiatric history taking, a manual psychometric examination of mood and anxiety was carried out using the Hamilton Anxiety Rating Scale, which obtained a score of 35 (Severe Anxiety) and the Hamilton Depression Rating Scale (HDRS) and obtained a score of 21 (moderate depression, HDRS score of 18-24). The patient received Sertraline therapy 1x50 mg in the morning and Clobazam 2x10 mg orally in the evening; 2) An examination was carried out by a neurology colleague with complaints of seizures since 6 years. Currently, there are still seizures but with a different pattern. The pattern has changed since 2014 with frequent feelings of anxiety. Obtained awareness results GCS 4/5, motor 5/5, sensory within normal limits. Electroencephalogram (EEG) results in 2013 showed functional disturbances in the left temporal region which could have epileptogenic potential. The CT-Scan results showed gliosis in the right frontotemporal cortex, right temporal bone defect, and no Intracerebral hemorrhage (ICH) was visible. The patient was diagnosed with post-traumatic epilepsy. Then the patient received 500mg-500mg-1000mg divalproex sodium therapy; 3) A vital sign examination was carried out with a body weight of 92 kg, blood pressure 140/92 mmHg, pulse 100x/minute regular strong, RR 22x/minute, no febrile, no anemia, no jaundice, cyanosis or dyspnea. Isochoric round pupils with +/- light reflex. There was slight ptosis on the right eyelid. The thorax is within normal limits. The abdomen is supple, bowel sounds are normal, peristaltic is normal, splenic and liver is not palpable, extremities are within normal limits; 4) The patient was given Cognitive Behavioral Therapy psychotherapy, relaxation therapy, and support in the form of

ventilation/catharsis, but on several occasions, the patient seemed to have difficulty expressing what he was feeling. Being given suggestions and persuasion only appears passive. Reassurance, the patient tries to be reassured of his ability that with regular and cooperative treatment he will be able to overcome what he is facing, the patient agrees but appears passive; 5) Family psychoeducation is given to uncles as family members who accompany them to participate in monitoring the progress of treatment and side effects, monitoring and distancing patients from possible acts of self-harm and reporting if there are suicidal ideas, improving communication, monitoring increases in seizure intensity, keeping seizure records, and facilitate communication for further exploration of other possible trigger factors during the treatment period.

The results we observed were from physical aspects, psychological aspects, social aspects, and liaison aspects. After colleagues at the Hospital provided the patient with sleeping pills previously, the patient experienced a reduction in complaints. With the addition of analgesics and multivitamins from neurology and antidepressants from psychiatry, which literature proves to be closely comorbid with tension-type headaches (TTH), it is hoped that the complaints will significantly decrease. In less than 1 week of treatment, the patient felt the headache had reduced somewhat and was able to sleep better than the previous days. From psychological aspects, the psychotherapeutic interview is carried out more for reassurance considering that the patient is in the process of a relatively severe illness with the aim of alleviating the symptoms and forming a therapeutic bond. Establishing communication with the patient's wife as the closest person to the patient at this time to explore the causes that trigger this patient's illness by psycho-educating the family about the importance of finding the etiology of the disease and obtaining complaints of headaches from the patient as an onset of the course of the disease. The healthcare team conducts family psychoeducation to motivate patients to continue their treatment process effectively. Communicate with neurology colleagues that the patient's panic disorder with agoraphobia and depression are closely related to epilepsy, which can be comorbid and/or overlapping (as a form of aura of seizures) so that a holistic examination and treatment are needed. Communicate medication given by psychiatry to avoid overlapping treatments.

DISCUSSION

Epilepsy is a disease that is often found in children. Some of the factors that cause this are head trauma, brain tumors, brain inflammation, a history of pregnancy problems and febrile seizures. Approximately 0.5 – 12% of recurrent febrile seizures are a predisposing factor for epilepsy in the future [6]. Diagnosing epilepsy is mainly obtained from a good history. Further investigations are useful for assessing functional and structural disorders in the brain [7]. The anamnesis first determines whether an epileptic seizure is present or not. Then determine the type of seizure and epileptic syndrome based on the International League Against Epilepsy (ILAE) classification [8].

In clinical practice, auto- and alloanamnesis from parents or eyewitnesses should include pre-ictal, ictal, and post-ictal [8]. Pre-ictal is a physical and psychological condition that indicates that a seizure will occur, such as changes in behavior, feelings of hunger, sweating, hypothermia, drowsiness, sensitivity, etc. Then they were also asked about their last memory before the attack, to determine how long the amnesia had occurred before the attack. Neurological symptoms may indicate a focal location [9]. In the ictal phase, ask whether there is an aura or any symptoms felt at the start of the seizure. And what is the pattern/form of seizures, starting from eye deviation, head movements, body movements, vocalizations, automaticity, movements in one or both arms and legs, tonic/clonic seizures, incontinence, biting of the tongue, paleness, sweating, etc. It is also asked whether there is more than one seizure pattern and whether there is a change in the pattern from the previous seizure, as well as the patient's activities when the seizure occurs, for example during sleep, while awake, playing, etc. As well as how long the seizure lasts [10]. In the post-ictal phase, does the patient immediately become conscious, confused, have headaches, restlessness, and Todd's paresis. Trigger factors: fatigue, hormones, psychological stress, and alcohol. Previous history of epilepsy: Age of

onset, seizure duration, seizure frequency, longest interval between seizures, and awareness between seizures. Previous epilepsy therapy and response to previous anti-epileptic drugs (AEDs). It is necessary to ask about the type and dose of AEDs, compliance, and the combination of AEDs. Current illness, history of psychiatric or systemic neurological diseases that may be causes or comorbidities. Family history of epilepsy and other related diseases. History of pregnancy, birth and growth and development. History of head trauma, stroke, Central Nervous System (CNS) infection, etc. [10]. There are several movements or conditions that resemble epileptic seizures, such as fainting (syncope), conversion reactions, panic, and movement disorder [7,10].

Table 1. Differential Diagnosis of Epileptic Seizures [7]

Normal phenomena (déjà vu, hypnic jerks)
Behavioral phenomena
Syncope (cardiac and vasovagal)
Panic attacks
Transient ischemic phenomena
Spasm
Migraine
Transient global amnesia
Narcolepsy
Sleep phenomena (sleep paralysis, periodic limb movement in sleep, parasomnia, sleep apnea)
Provoked seizure (traumatic, metabolic)

Differentiating between syncope, seizure, and pseudoseizure depends on the history of the patient and witnesses.

Table 2. Differential Diagnosis of Epileptic Seizures [10]

Epileptic Seizure	Syncope	Non-epileptic attack disorder	Cardiac arrhythmias	Panic attack or hyperventilation
Past Medical History				
History of head trauma, alcohol, drug dependence, prolonged febrile seizures, meningitis, encephalitis, stroke	Using antihypertensive drugs, antidepressants (especially tricyclics)	Sexual and physical dependence	Congenital heart disease	Anxiety
Risk Factor				
Family history (+)	-	Woman (3:1)	-	-
Precipitating Factors				
Sleep deprivation Alcohol withdrawal photic stimulation	change of position medical procedures standing for a long time neck movement	Stress Social distress	Physical exercise	Social situations
Clinical Characteristics leading up to the attack				
Stereotypic, paroxysmal (seconds), may be accompanied by aura	Lightheadedness Visual symptoms dark, blurred vision	not typical	palpitation	Fear Unrealistic feeling Difficult to breathe Tingling

Currently, there has been increased clinical and research attention to the complications of epilepsy, neurobehavioral comorbidities in epilepsy have a long history and are very tiring for sufferers. Cognitive impairment, emotional-behavioral status, and social functioning, which variably lead to psychosocial complications of epilepsy, have been studied empirically since the early 20th century when people with epilepsy were often excluded from society. Epileptologists then presented more images

illustrating the effects of epilepsy on patients living in the community, and patients with epilepsy continued to focus their attention on seeking help from national commissions, public health agencies, national, and international health organizations. Although it is undeniably a potentially very serious complication of epilepsy, the etiology and management of the neurobehavioral disorder – or the history of the disease – needs to be recognized [11]. There are several cases of personality, behavioral, and psychiatric disorders in patients with complex partial seizures. Data regarding the prevalence of this disorder is very limited and is only obtained from data on patients who come to teaching hospitals and other specialist neurology clinics to treat more difficult cases of epilepsy and its complications. In one study, about 1/3 of patients had a history of major depressive illness, and about the same number had symptoms of an anxiety disorder; Symptoms of psychosis were found in 10% of these patients. The same picture was also reported by Blumer and friends. It must be emphasized that increasing psychiatric morbidity does not reflect the prevalence of the entire epilepsy population [12].

Psychiatric disorders have long been the focus of attention in centers treating class 3 epilepsy. Studies in populations using contemporary diagnostic criteria, such as the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) and the International Classification of Diseases, are essential in establishing their magnitude. Tellez-Zenteno and friends studied the mental health status of 36,984 people who participated in the Canadian Community Health Survey. The World Mental Health Composite International Diagnostic Interview was used to obtain 12-month and lifetime scores in patients with DSM-IV Axis I disorders. Lifetime prevalence of participants with epilepsy and the control population is shown in Table 1. Patients with epilepsy were more likely to report lifetime anxiety disorders and suicidal thoughts and lifetime major depression was significantly higher than that of other individuals [13].

Table 3. Lifetime Prevalence in Participants with Epilepsy and Control Populations [13]

	Control	Epilepsy
Major depressive disorder	10,7 (10,2–11,2)	17,4 (10,0–24,9)
Mood disorder	13,2 (12,7–13,7)	24,4 (16,0–32,8)
Anxiety disorder	11,2 (10,8–11,7)	22,8 (14,8–30,9)
Mood disorder, anxiety disorder, or dysthymia	19,6 (19,0–20,2)	34,2 (25,0–43,3)
Panic disorder or agoraphobia	3,6 (3,3–3,9)	6,6 (2,9–10,3)
Suicidal ideation	13,3 (12,8–13,8)	25,0 (17,4–32,5)
Any mental health disorder	20,7 (19,5–20,7)	35,5 (25,9–44,0)

Figures quoted as prevalence (95% CI). Patients without epilepsy (n=36 727); patients with epilepsy (n=253).

The mechanisms that link epilepsy and behavioral disorders are as follows. general neuropathology, genetic predisposition, developmental disorders, ictal and subictal neurophysiological effects, inhibition or hypometabolism in the epileptic focus area, secondary epileptogenesis, changes in receptor sensitivity, independent, primary psychiatric illness, complications of drug use and surgery, complications of the psychosocial burden of epilepsy. Schmitz and colleagues found that the interaction of multiple biological and psychosocial factors causes the risk of progression to schizophreniform psychosis or major depression in patients with epilepsy and concluded that behavioral disorders in epilepsy have multiple risk factors and a multifactorial etiology [14–16].

The DSM-5 states that panic is defined as a sudden, repeated episode of acute fear or discomfort with both somatic and cognitive symptoms. Excessive anxiety or worry about being in places (such as crowds, enclosed areas) where one might not be able to flee or receive treatment in the event that overpowering or embarrassing symptoms, such as panic attacks, develop, is the feature of agoraphobia [17]. In general, the first line of management for anxiety disorders, including agoraphobia with or without

panic symptoms, is psychotherapy. Psychotherapies that can be given are Cognitive Behavioural Therapy (CBT) and Psychodynamic Therapy. The second line of management is pharmacotherapy. Psychopharmacology includes antidepressants including SSRIs, SNRIs, tricyclic antidepressants, calcium modulators, and azapirone as the first line. If there is no improvement with the antidepressant group, another antidepressant can be considered. However, if there is still no improvement, it is replaced or combined with antipsychotics or benzodiazepines. Other therapeutic modalities that can be used are exercise, internet-based psychological intervention, or patient self-help and family support groups [18].

Depression is a mental status or chronic mental disorder characterized by feelings of excessive sadness, loneliness, hopelessness, low self-esteem, and self-blame. Signs that accompany depression are psychomotor retardation, withdrawal from social environments, and vegetative status, such as loss of appetite and insomnia [14,15]. Interictal depression is a frequent case, occurring in 25-55% of patients. Furthermore, suicide cases in epilepsy patients were 5 times higher than in the control group. Interictal depression has both biological mechanisms (family history of depression, structural lesions, and antiepileptic drugs) and psychosocial-reactive mechanisms. The burden suffered by depressed patients is very heavy. In one study of patients with epilepsy who were refractory to antiepileptic drug therapy, depression played a major role in causing poor quality of life, and excessive and severe seizure frequency. Depression is commonly undiagnosed, and largely untreated in this population (only 17% are on antidepressant medication). In 2 separate studies, the use of tricyclic antidepressants or SSRIs by patients with epilepsy more often reduced seizure frequency rather than causing exacerbations. If warranted, in prospective studies, these findings may secondarily improve sleep cycles and mood, with these factors being associated with reduced seizure frequency [14,15]. Selective serotonin-reuptake inhibitors (SSRIs) and related drugs (such as venlafaxine and nefazodone) are the first choice for treatment in most depressed patients. However, the benefits and safety of specific SSRIs have not been proven. Drug interactions are more frequent with fluoxetine, fluvoxamine, and paroxetine than with escitalopram, citalopram, or sertraline [13].

An ongoing study examines the prevalence of social, psychological, and quality of life complications of epilepsy. This research involved the 2003 California Health Survey, the 2002 National Health Survey, and the Center for Disease Control Behavioral Risk Surveillance. Across various studies, in non-selected samples, epilepsy patients consistently reported higher unemployment rates, lower income (<\$25K), and lower education levels compared with people without epilepsy. Furthermore, those patients with active epilepsy (eg, seizures in the last 3 months) more often report experiencing mental and physical disorders and more limited activity [11].

Social phobia can also be related to epilepsy. Patients with epilepsy are prone to sudden, uncontrollable seizures, leading to their feeling stigmatized in the community [19]. A vicious circle of fear of uncontrollable seizures, negative interpretation of others' attitude, feeling stigmatized, and social phobia lead to a behavioral problem that needs to be managed in addition to epilepsy itself [20]. A previous study showed that there are significant and positive correlations between depression, anxiety, and stigma scale of epilepsy. This study showed that behavioral disorders such as social phobia and agoraphobia are underdiagnosed and not adequately treated in patients with epilepsy, leading to difficulty in reintegration into society [21].

Another type of phobia that is rarely mentioned in relation to epilepsy is a type of specific phobia, seizure phobia. Seizure phobia, social phobia, and agoraphobia are recognized by the ILAE as specific interictal anxiety disorders related to epilepsy. A previous study with 69 patients with epilepsy showed a 27.5% prevalence of seizure phobia. Significant associations include female gender, past major depressive episode, and past post-traumatic stress disorder. This finding confirmed the importance of psychiatric intervention in addition to neurologic epilepsy management to increase the quality of life and ease the reintegration of patients with epilepsy into society [22]. We encourage future studies to implement psychiatric assessment and intervention in epilepsy management and study its effect on the quality of life.

CONCLUSION

The patient was diagnosed with post-traumatic epilepsy and panic disorder with agoraphobia and a moderate depressive episode with somatic symptoms. The patient has received psychotherapy in the form of CBT, supportive psychotherapy, family psychoeducation, administering psychopharmaceuticals, and communicating with neurological colleagues about the patient's psychological condition and therapy plan. Psychiatric disorders are comorbidities that often appear in epilepsy patients. Therefore, by conducting interventions and collaborating with neurology colleagues, communicating well with patients and their families according to therapeutic relationships and the patient's disease trajectory, it is hoped that we can prevent or minimize the occurrence of more severe psychiatric disorders and/or recurrent illness in the present and future.

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