

Diagnostic challenge in neuropsychiatry: two case reports

Case Report

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Abstract: Background: Temporal lobe epilepsy straddles the borderland between psychiatry and neurology. Since this condition may involve gross disorders of thought, emotion, and sensory disturbances in the absence of tonic clonic seizures, psychiatrists may often fail to recognize the epileptic origin of the disorder. Our objective was to portray two case reports to increase recognition of common psychiatric symptoms and syndromes manifested in epilepsy. Method: Descriptive analysis of two females, suffering from derealization - depersonalization syndrome, hallucinations, and delusions. Results: Both patients were being treated for decades for depression and schizophrenia; however no positive treatment results resulted. A cooperative team of psychiatrists and neurologists of the Kaunas Medical Academy revealed epileptic roots of these cases, which resulted in treatment changes from antipsychotics to mood stabilizers. This new treatment showed long-acting positive outpatient outcomes. Conclusion: Contemporary medical science could show improved outcomes not only by fragmenting into smaller specialized pieces, but also associating into bigger units, especially in the case of psychiatry. However, more exhaustive research should be provided to confirm such necessity.

Keywords: *Epilepsy • Hallucinations • Delusions • Psychosis • Antipsychotics*

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1. Introduction

Hallucinatory experiences have fascinated humans since ancient times. Although such experiences have long been known to be inducible by psychotropic agents, to occur during spiritual exercises, or to exist in association with various diseases, knowledge of the hallucinatory symptoms of epilepsy and their relationship to neuro-physiological cerebral processes has taken a long time to emerge [1]. This knowledge has developed in line with the increasing knowledge about the brain itself, ranging from the nature of neuronal activity to localization of brain functions [2].

Neurologically, the association of epileptic seizures with certain experiences with sensory, psychic, or emotional content was mentioned in the works of Pritchard, Esquirol, Griesinger, Herpin, Morel, Falret, and Gowers between 1820 and 1900 [3–5]. Furthermore, in those patients who exhibit mental symptoms the latter can be classified into prodromal, ictal, postictal, and interictal

disorders [6]. It was only in the mid-twentieth century that the concept of the interictal schizophrenia-like psychoses of epilepsy crystallized [7]. Elaborate mental states that include hallucinatory and illusionary experiences as part of epilepsy symptomatology came to sustained attention with the descriptions given by John Hughlings Jackson on the ‘dreamy state,’ ‘intellectual aura,’ and ‘uncinate fits’ between 1880 and 1900 [8,9]. While the ‘dreamy state’ can occur in isolation, it is often accompanied by fear and a peculiar form of abdominal discomfort associated with loss of contact with surroundings, and automatisms involving the mouth and gastrointestinal tract (licking, lip-smacking, grunting, and other sounds [10,11]. Intriguing descriptions and conceptual evolution followed in the writings of Critchton-Brown (‘dreamy mental states’), Kinnier Wilson (‘psychic variant’), Levin, Gibbs (‘psychomotor seizures’), Lennox [1,12–14]. Epileptic hallucinations entered modern neuro-physiologically based brain science with the work of Wilder Penfield. During these experiments the

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patients experienced what Penfield referred to as 'experiential illusions.' These illusions involved an alteration, sometimes subtle, of the person's relationship to his or her environment, as well as emotional response to it. In contrast to psychotic persons, Penfield's patients remained fully aware that their altered interpretation was an illusion. This is an important distinction from schizophrenia and other psychotic states [15].

Temporal lobe epilepsy (TLE) straddles the borderland between psychiatry and neurology. Since the condition may involve gross disorders of thought, emotions, and sensory disturbances, patients with TLE frequently come to the attention of psychiatrists. Since symptoms may occur in the absence of tonic clonic seizures, physicians may often fail to recognize the epileptic origin of the disorder. Indeed, misdiagnosis and failures of diagnosis are common in TLE. Fortunately, the illness is marked by certain 'signature' symptoms that can aid in its identification [16].

The aim of our paper was to portray two case reports for better recognition of common psychiatric symptoms and syndromes manifested in epilepsy.

2. Material and Methods

We provide descriptive analysis of two females 70 and 41 years old, wrong diagnosed with schizophrenia and depression, and suffering from derealization – depersonalization, hallucinations, and delusions. Both cases provide examples of psychosis-like symptoms, which are exceedingly rare in schizophrenia and depression in younger ages. However, non-exhaustive anamnesis and avoidance of timely seeking for psychiatric examination was followed by wrong incorrect diagnosis and treatment.

3. Results

Case One: A 70-years-old female patient R.V., currently living in the city, right-handed, practicing Catholic, was being treated for the fifth time in a psychiatric hospital. At the time of admission to the Department of Psychiatry of Medical Academy of Lithuanian University of Health Sciences (MA of LUHS), she was fully conscious and oriented. The patient experienced high anxiety, fear, low mood, disturbed sleep, tearfulness, a deteriorating memory, a tight-band type headache, burning in the stomach and intestines. For the last fifteen years she has heard voices, which are described as coming from outside the room, and sees hallucinations such as 'small angels surrounding her'. Regarding the voices and

angels the patient is aware: she understands that they are not real, it doesn't cause her emotional distress.

Her mother's pregnancy and delivery was normal, and her psychomotor development proceeded timely. The patient did not mention any head traumas or any prevalence of psychiatric diseases between family members. She stated that already as the child in Siberia (where patient was deported with her family 60 years ago) she could already hear something 'like whistle, like a humming (auditory hallucinations),' accompanied by a feeling that something was wrong around her, that things are familiar and strange at the same time, distant, brighter, and more colorful, world is more beautiful than it really is, people are good, funny, full of joy, everything illuminates the goodness (derealization – depersonalization). As a child she never presented herself to the psychiatrist to avoid being put into the madhouse for life.

After she returned home in to Lithuania and married, her husband insisted her to visit local psychiatrist. Since the 1970s she has been receiving treatment in local psychiatric hospitals, and has been diagnosed with major depressive disorder with psychotic symptoms. The treatments included different types of antidepressants, antipsychotics, benzodiazepines, and combinations thereof. During the treatment the patient's emotional condition occasionally improved; however, hallucinations and derealization – depersonalization changed very little. Nevertheless, she stated positive qualitative changes in her wellbeing and asked to be discharged from the hospital. However, at home she stopped taking the medications regularly.

Since the patient started to hear combined auditory and visual hallucinations, her husband constantly recommended that she go to the University Hospital for consultation. The family negotiation took approximately 10 years and during this long period, the quality of life of the patient was seriously affected. During treatment in Psychiatric Department of MA of LUHS, the patient underwent exhaustive neurological examinations (EEG, MRI, SPECT), and TLE was diagnosed. Treatment with antipsychotics and antidepressant was completed. The assigned treatment with carbamazepine within in two weeks eliminated auditory and visual hallucinations, derealization – depersonalization syndrome, and improved the patient's emotional state. Two and a half years after discharge from the hospital we systematically monitored and consulted the patient. Blood concentration carbamazepine was monitored monthly. The patient was encouraged to use medicines systematically and to report all emerging adverse symptoms. During outpatient treatment the patient's condition was stable and no new symptoms of active psychopathology emerged. However, the patient died in auto accident.

Case Two. A 41-year-old female patient V.B., currently living in a rural area, right-handed, not a practicing Catholic, was being treated for the twelfth time in a rural psychiatric hospital. At the time of admission to the Psychiatric Department of MA of LUHS she was fully conscious and oriented, complaining about bad temper, anxiety, inability to concentrate, maintain attention, fatigue, little desire for work, lack of strength, impaired memory, senses of strange stomach feeling, headache, decreased libido and loss of orgasm. The patient says that she can 'predict the future,' 'knows, what the trees talk,' 'she is merged with nature into one (delusions).' Often she hears the 'voices' that tells her what to do: 'prepare food to eat, go to the store, turn on the TV set, and clean the house (auditory hallucinations).' The patient is aware of the auditory hallucinations: she realizes that they are not real, but the voices make her feel uncomfortable, she becomes irritable, angry, starts to lose her temper (there were instances where she broke dishes and raised her voice at family members). Voices made her feel frustration and dysphoria. For many years she has seen ghosts of the dead people (visual hallucinations). She can recognize all the ghosts and knew them before they have died. The patient describes ghosts as not real, 'transparent.' They often follow her and scare her. When she cannot get rid of ghosts, she starts to consume alcohol in large amounts, and then the ghosts disappear.

The patient recalled no psychiatric illness having been diagnosed in her family. She claimed no complications in her mother's pregnancy and childbirth. No head traumas in childhood, adolescence and adulthood were mentioned. Symptoms of active psychopathology occurred 31 years ago for the first time. She had to stand guard of honor of classmate's mother's dead body in the school hall. However, one of the dead body's arms was not well fixed; it fell from the chest and touched the girl. The girl was very frightened and fell down 'as if she lost consciousness.' After this incident an episode of anterograde amnesia occurred. Later she began to see the dead women in her home, garden, or standing at the grocery store. At the same time she started to experience anxiety, fear, bad moods, nausea, headaches, memory problems, and extreme tiredness. Eventually she started to hear 'what the trees say,' 'began to feel that sometimes she merge with nature,' or 'can predict the future.' Her mother and grandmother asked her not to tell anyone about it, threatened her that if anyone becomes aware of it, she will be taken away from her parents and put into a psychiatric hospital. Eventually the number of ghosts started to grow, possibly because her mother and grandmother, despite her fear of dead, very often took her to funerals.

Her first consultation with a rural psychiatrist occurred accidentally: after the birth of the first kid she was diagnosed with postpartum depression. For the next four times during admission to another local hospital, general anxiety disorder was diagnosed. The patient hid complaints regarding 'ghosts', 'strange voices', and feeling of unreality. Treatment with antidepressants and tranquilizers was provided. During hospitalization her emotional condition improved; however, symptoms of active psychopathology did not change. Ten years later the patient stopped hiding that she heard voices, saw ghosts, and felt fusion with nature; she was diagnosed with schizophrenia and treated with different types of antipsychotics. After prolonged hospitalizations her emotional condition usually improved, but active psychopathology decreased only slightly. As a rule, one month after hospitalizations she usually stopped taking any medicines, arguing that 'it doesn't help me.' The family members as the last chance decided to appeal to Psychiatric Department of MA of LUHS.

During this treatment, the patient underwent exhaustive neurological and psychiatric examination (EEG, video EEG, SPECT, MRI); because her left temporal lobe revealed changes characteristic of focal epilepsy, treatment with antipsychotics and antidepressants was stopped and treatment with valproic acid was initiated. During the treatment, visual and auditory hallucinations, delusions, symptoms of derealization, tension, anxiety, headaches, gastrointestinal tract discomfort, fatigue, weakness, in three weeks became less frequent and then disappeared; she reported improved mood, attention, concentration and memory, and libido. After discharge from the hospital the patient was systematically observed in an outpatient setting for 2 years (she later moved to the U.S.); blood valproate levels had been systematically checked. For the entire two years, the patient's condition has remained stable; she evaluated her quality of life as significantly improved, began to develop plans for the future and started to realize them.

4. Discussion

No psychiatric symptoms are unique to epilepsy. Migraine sufferers regularly experience illusions of sound, sight, taste, and smell [17]. True hallucinations may occur in complex partial seizures, especially the classic olfactory or gustatory hallucination seen with uncinate fits [18]. Still, epileptic experiences remain among the most fascinating phenomena in neurology [19].

In epileptology, a clear-cut separation of hallucinatory, illusionary, and delusional phenomena is not easily achieved [20]. These symptoms can be mixed up in a

particular complex sensation reported by a given patient. However, when a patient is able to report a stereotyped, specific subjective symptom, whether designated a 'feeling,' 'sensation,' 'perception,' or 'experience,' from his or her seizures, it is classified as an ictal symptom. [21]. An aura does not precede the seizure, as frequently described by patients or physicians; it is an integral part of the seizure symptom sequence and relates to the very early phase of localized epileptic discharge within the brain [20].

Every aura in itself is a partial seizure, a true ictal event [2]. Clinically, specific aura symptoms seem closest to the presumed cortical seizure onset zone and are very valuable information, especially when presenting as elementary or complex hallucinations [22,23]. Mauguiere discusses in detail the pathophysiological mechanisms underlying hallucinatory, illusionary, and delusional experiences in epilepsy [20]. In most instances, the emotion experienced as part of the seizure is a disturbing one variously described as dread or a feeling of impending doom; in others, the emotion may be experienced as pleasant or euphoric, as Dostoyevsky described [24].

When interviewing suspected TLE patients, the exhaustive anamnesis examination is highly important. Often the patients are aware of their lapses, and almost all of them experience some form of memory disturbance, even if nothing more than a vague inability to grasp things with sufficient precision. Other rare presentations include anorexia nervosa [25], multiple personality [26] or compulsive water drinking [27]. Spitting and embarrassment have been described as the aura of a complex partial seizure [28,29]. The clinician should inquire as to a family history of migraine, since migraine is overrepresented in families with TLE and can mimic the majority of TLE symptoms [30]. Tactful inquiry may result in anecdotal reports of sexual disturbances in some patients with TLE. During the seizures, the patients may also experience genital sensations, even feelings of sexual excitement evoked by the epileptic discharges [31].

The two cases we describe demonstrate the importance of communication between neurologists and psychiatrists and the importance of patients' and their families' education. For more than two decades, patients were being treated symptomatically without a positive effect to active psychopathology (antidepressants, antipsychotics, anxiolytics), and were not sufficiently monitored during outpatient treatment, leading to irregular use of medicines. The patients were not suspected of TLE onset. This made a significant impact on the patient's working capacity, social, domestic life, and family life and overall quality of life.

Both of the above-described cases demonstrate how easy it is to make a mistake in the diagnosis and treatment of neuro-psychiatric patients; however, after the detection of the etiology and the treatment according to the etiology was commenced, epilepsy-related psychiatric symptoms that for many years did not respond to antipsychotics, disappeared.

TLE also may be responsible for chronic rather than just acute psychoses. While any of the symptoms of schizophrenia may be encountered, paranoid traits are the most common. TLE patients can be distinguished from schizophrenic patients by the maintenance, when not acutely ill, of warm affect and good rapport. In addition to the history, EEG can aid the diagnosis of complex partial seizure disorder. However, since such diagnosis remains a clinical one, it should be noted that several negative EEGs do not rule out the diagnosis of TLE in a given patient [32–34]. Other diagnostic aids include MRI, single photon emission computed tomography (SPECT) and positron emission tomography (PET). Interictal SPECT of cerebral blood flow is not nearly as helpful as ictal SPECT. Even more sensitive, although not generally available, is PET imaging of interictal cerebral metabolism, which permits greater spatial resolution and versatility. Only MRI can image the structural changes associated with the underlying epileptic process. Quantitative evidence of hippocampal volume loss is correlated with seizure onset in medial temporal structures [35–37].

Total management of TLE by a psychiatrist is also not without problems. Although temporal lobe epileptic patients are particularly intriguing to psychiatrists because of the nature of the symptoms, these 'psychic' seizures can generalize at any time into psychomotor status or grand mal attacks. What's more, neither the timing nor the seriousness of grand mal episodes can be predicted: the initial generalized seizure sometimes occurs many years after the first manifestations of the illness and may culminate in status epilepticus and death. For these reasons, a physician should undertake the treatment of TLE patients only if he or she has sufficient training and experience in the overall management of epilepsy. When this isn't the case, close collaboration between the psychiatrist and neurologist offers the best venue for successful management of this fascinating 'bridge' between neurology and psychiatry.

Conclusions: Contemporary medical science could show improved outcomes not only by fragmenting into smaller specialized pieces, but also associating into bigger units, especially in the case of psychiatry. However, more exhaustive research should be provided to confirm such necessity.

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Declaration of Interest

Authors of these case reports declare no interest with any pharmaceutical, private or public enterprises.

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