CASE REPORT

Severe depression as the sole symptom of affective focal status epilepticus

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SUMMARY

Depression as well as fear, joy and anger have been described as the semiological features of focal epileptic seizures. When emotions present as the sole symptoms of epileptic seizures, they may easily be misdiagnosed as a psychiatric disorder. We describe a patient with affective focal status epilepticus, secondary to limbic encephalitis, in which depression was the only clinical manifestation. Through EEG correlates the epileptic nature of depression could be proven. Furthermore, we discuss the association between epilepsy and depression, as well as the link between ictal depression and suicidal rates.

BACKGROUND

It is well established that emotions such as fear and depression are associated with epileptic seizures.¹ They may occur as manifestations of the epileptic process itself and as a response to it. However, rare cases of ictal depression as the main manifestation are described.^{2–4} We here present a patient with an affective focal status epilepticus (AFSE) secondary to limbic encephalitis (LE), for whom severe depression was the only clinical manifestation.

CASE PRESENTATION

This patient was brought to our emergency department by his spouse, who was alarmed by his verbal statements of suicidal intentions. The spouse noticed a sudden change of behaviour over the preceding 2–3 days, in which persistent depressed mood, loss of interest, fatigue, poor concentration and self-blame dominated the patient's expressions.

His medical history was remarkable for recent short-term memory impairment and recurrent episodes of vertigo. An MRI of the brain performed 3 months prior to admission revealed an incidental aneurysm of the right internal carotid artery and was otherwise normal. Four weeks prior to admission he experienced his first generalised tonic-clonic seizure, which prompted clinical neurological and psychiatric evaluation, repeat MRI of the brain, examination of the cerebrospinal fluid and EEG. The EEG showed interictal epileptiform discharges. All other diagnostic tests did not reveal any abnormal findings. Levetiracetam (750 mg twice daily) was administered.

On clinical examination in the emergency room he appeared depressed and confirmed having suicidal thoughts, but without any concrete implementation plans. The neurological examination was otherwise normal. A psychiatric evaluation revealed

the diagnosis of a severe depressive episode. Routine laboratory data and ECG were normal.

INVESTIGATIONS

The EEG performed in the emergency setting showed a left temporal EEG status pattern (figure 1).

DIFFERENTIAL DIAGNOSIS

- Major depressive episode
- Status epilepticus

TREATMENT

With the intravenous application of 2 mg lorazepam and 1000 mg levetiracetam, the patient's mood improved rapidly and he was then surprised to having had suicidal ideation.

OUTCOME AND FOLLOW-UP

Repeat EEG performed next day showed mild left temporal slowing but no more epileptiform discharges. The repeated psychiatric examination did not reveal any signs or symptoms of depression. Brain MRI (fluid attenuation inversion recovery and T2-weighted sequences) demonstrated bilateral hyperintense signal in the hippocampal areas. A fluorodeoxyglucose positron emission tomography of the brain revealed left mesial temporal hypermetabolism. Repeat cerebrospinal fluid examination did not reveal any abnormal findings. Additional laboratory examinations revealed antibodies against leucine-rich, glioma inactivated 1 protein. For treatment of the LE a glucocorticoid treatment with methylprednisolone was initiated. The patient remained asymptomatic for the last 24 months.

DISCUSSION

Although rare, ictal depression defined as “the clinical expression of a simple partial seizure in which the symptoms of depression consist of its sole (or predominant) semiology”⁵ has been described as a semiological feature of focal epileptic seizures. However, more often depression represents an interictal comorbidity associated with epilepsy.⁵ In addition patients with epilepsy were found to have an almost twofold higher risk of committing suicide, which increased almost 32-fold in the presence of comorbid mood disorder.⁶ Most research in this context focused on epidemiology and pathophysiological relationships between depression and epilepsy.^{5 6} Depression occurs frequently in patients with a long history of drug-resistant epilepsy.⁶

In a study on ictal emotions on 2000 epilepsy patients, 100 reported having emotional symptoms

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Figure 1 Bipolar longitudinal EEG recording including anterior temporal electrodes (FT9 and FT10) showing a left temporal EEG seizure pattern (max. at electrode FT9), which waxed and waned over the period of the EEG and at times spread to the right temporal region.

during seizures and of these only 21 had symptoms of depression.³ When emotions present as the sole symptoms of epileptic seizures, they may easily be misdiagnosed as a psychiatric disorder. Among affective symptoms associated with epileptic seizures, fear has been more frequently reported than depressed mood.^{2–4} There are few case reports with an affective status epilepticus consisting of fear.⁷ Despite the fairly large number of patients with LE being reported with psychiatric abnormalities, in a systematic review of the literature only 5 of 50 patients with definite LE had depression.⁸

Depression in that case could occur as a psychiatric disorder, a symptom of LE or even as a side effect of the antiepileptic treatment. The sudden onset of the depressive episode in our patient was a clinical feature, which is unusual for depression due to psychiatric disorders, LE or as a side effect of levetiracetam. The psychiatric symptoms ceased despite continued levetiracetam treatment at an even higher dose which makes it extremely unlikely that the severe depression was caused by levetiracetam. Moreover, antiepileptic medication caused a cessation of the status epilepticus with consecutive, almost immediate, relief of symptoms in our patient, even before specific treatment for LE was initiated. However, clinical improvement on intravenous administration of a benzodiazepine alone or in

combination with levetiracetam cannot be considered sufficient for the diagnosis of an epileptic nature, as this may also occur in the context of a typical depressive episode. In our patient the ictal EEG proved the epileptic nature of depression. This highlights the importance of EEG to identify the epileptic nature and to distinguish epileptic processes from other psychiatric differential diagnoses.

In conclusion, ictal depression as the sole manifestation of an affective status epilepticus should be considered in the diagnostic evaluation of selected patients with depression. Considering the association between epilepsy and depression, the question arises how much does ictal depression contribute to suicidal rates among patients with epilepsy?

Contributors KD is the primary author of the manuscript and he was involved in the treatment of the patient. TP was involved in the treatment of the patient and revision of the manuscript and SN was involved in the treatment of the patient, revision of the manuscript and supervision of work.

Competing interests None.

Patient consent Obtained.

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Learning points

- ▶ Ictal depression as the sole manifestation of an affective status epilepticus should be considered in the diagnostic evaluation of selected patients with depression.
- ▶ EEG is an important diagnostic tool.
- ▶ Considering the association between epilepsy and depression, the question arises how much does ictal depression contribute to suicidal rates among patients with epilepsy?

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