Neuropsychiatric implications of non-convulsive epileptic status: how neuropathology explains psychiatric clinic presentation - about a clinical case

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INTRODUCTION

• Psychosis associated with Epilepsy is one of the presentation forms of Temporal and Frontal Lobe Epilepsy (TFLE) and non-convulsive Status Epilepticus (NCSE) is defined as a seizure-free epileptic persistent condition, lasting more than 30 minutes, associated with continuous or quasi-continuous epileptiform discharges in the EEG and is frequently misdiagnosed.
• Although both conditions, require immediate diagnosis and intervention, the clinical features of NCSE are subtle and non-specific and therefore are not usually diagnosed and confused with behavioral or psychiatric disorders. The etiology, diagnosis, treatment, and prognosis remain controversial.
• The objective of this paper is to clarify the clinical and therapeutic characteristics of Psychosis associated with Epilepsy and NCSE, with a view to a greater and better recognition and approach of these pathologies, with reference to a clinical case.

CLINICAL CASE

IDENTIFICATION
• Male, 56 years-old, single, working as a mechanical. He had no significant medical-cirurgical events, except, what was described as a “depressive episode” ten years before, but neither the patient nor his family could accurately describe it and there were no follow-up records.

CURRENT DISEASE PRESENTATION
• He was hospitalized due to a one month period with persecutory delusions, auditory hallucinations, thought diffusion, passivity phenomena and total insomnia. He had been self-medicated with diazepam 40mg per day due to the insomnia, with no response, and had no insight for the remaining clinical presentation.
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• He described this one-month period as “a dream...but it does not happen during sleep, it’s awake...where things that I can’t control happen and my body does things that shouldn’t do”.

EVOLUTION
• His psychotic symptoms improved with paliperidone 9mg, but the insomnia remained despite the therapeutic adjustments.
• One month after his admission he began to present periods of confusion, consciousness floating, temporal and spatial disorientation, disperse attention, behavioral disorganization at night and ataxia, that didn’t improve despite therapeutic adjustment. He had no changes in the neurologic status, cerebral NMR and on liquor analysis. Psychiatric medication was ceased.
• He realized an electroencephalogram (EEG) and presented slowing down of the base activity and had practically continued epileptic activity in the temporal and frontal lobes. With the addition of valproic acid (VPA) 750mg per day the epileptic activity ceased and his status improved one month later. Paliperidone was reintroduced due to residual delusional activity, even though the anti-epileptic was in therapeutic levels. The control EEG showed no epileptic activity but he presented a sequelae encephalopathy trace.
• Four months later his admission the patient was discharged, medicated with paliperidone and VPA, and was completely organized, with no psychotic symptomatology.
• After 4 months of ambulatory treatment, the patient abandoned his medication and returned to present psychotic symptoms, with persecutory delusions, passivity phenomena and insomnia. He was admitted one more time and, the VPA and paliperidone were reintroduced, with remission of his symptoms and discharged after 1 month of treatment.

SYNDROME REVIEW

TFLE
• Epilepsy-associated psychoses is divided in peri-ictal / acute seizures, with a close temporal relationship to epileptic seizures and interictal / chronic seizures, which are characterized by isolated psychotic episodes not related to seizures.
• Since interictal symptoms are not related to any “convulsive side effects,” psychiatric manifestations are very similar to the phenomenological manifestations of Schizophrenia, which is why chronic interictal psychosis is also referred to as Schizophrenia-like Epilepsy Psychosis.
• Several abnormalities throughout the brain have been described in Temporal Lobe Epilepsy and Schizophrenia, with a number of studies reporting structural abnormalities and genetic mutations presented in both pathologies.
• The most accepted theory is that both Psychosis and Epilepsy are the consequence of underlying physiological dysfunction. In some patients this may be Epilepsy, whereas in others, symptomatology is congruent with Schizophrenia, and a third group may suffer from both. This theory goes to meet the specter of a "continuum of Psychosis.

NCSE
• NCSE accounts for approximately 28% of status epilepticus and persists in 14% of patients following control of generalized epilepsy.
• The EEG is necessary to make a definitive diagnosis, but this can be made difficult due to the low accessibility to the examination, especially to the scarcely monitoring EEG availability, the poor adhesion of the patient and the interpretation of the results.
• The NCSE can have a variety of clinical presentations, such as confusion with a floating pattern that is difficult to distinguish from other causes of delirium, and is possible to have episodes of cognitive impairment interspersed with periods of almost normal functioning, such as a persistent confusional state or as in coma.
• A clinical and / or EEG improvement after treatment makes the diagnosis of NCSE more likely in making a diagnosis, specialized interpretation of the tracing is necessary, but ultimately, clinical evaluation, rather than exact criteria, is the diagnostic key. Any delay in treatment may decrease the likelihood of a NCSE reversal and therefore have a detrimental effect on recovery.

TREATMENT
• The relatively high prevalence of psychotic symptoms in patients with Epilepsy suggests the existence of pathogenic mechanisms common to both.
• However, few studies have addressed this issue and it remains a challenge to characterize neurobiological changes that contribute to the genesis or maintenance of Epilepsy-associated Psychosis, with clear need for further investigation to elucidate local and disseminated dysfunction of neuronal circuits that may be involved.
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CONCLUSIONS

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