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Major Depression in Temporal Lobe Epilepsy with Hippocampal Sclerosis: About A Case

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Abstract **Case Report**

Hippocampal sclerosis is one of the most common pathologies of medically incurable temporal lobe epilepsy. Its diagnosis can be evoked on the scanner and the MRI. Its medical treatment is generally insufficient with recourse to surgical treatment to improve the clinic and the prognosis of patients with epilepsy with hippocampal sclerosis. Significant hippocampal volume loss has also been seen in patients with chronic depression. The comorbidity between these two medical conditions justifies scientific research to better understand the role of the hippocampus in these two diseases. We report the case of a patient admitted to the psychiatric consultation for management of a behavioral disorder, pseudoepileptic conversive crisis, a cerebral MRI was performed urgently and the diagnosis of hippocampal sclerosis was made. Through this observation and a review of the literature, we discuss the characteristics of this rare condition, in particular the psychiatric comorbidity.

Keywords: Depression, Hippocampal sclerosis, diagnosis, cerebral MRI.

INTRODUCTION

The higher frequency of depression in patients with drug-resistant epilepsy reinforces the importance of studying the link between psychiatric illnesses and epilepsy [1]. On the one hand epilepsy has important implications on the quality of life of patients [2] and on the other hand these patients with drug-resistant epilepsy mainly present with mesial temporal lobe epilepsy with hippocampal sclerosis [3]. Although the hippocampus is classically associated with memory processing, it may be part of the pathological process in major depressive disorder because it is a highly plastic and stress-sensitive structure [4], With respect to the sectors hippocampal, moderate cellular apoptosis has been reported in post-mortem studies of patients with this psychiatric disorder [5].

Therefore, mesial temporal lobe epilepsy with hippocampal sclerosis may be a neurobiological model to describe the structures involved in the bidirectional relationship between epilepsy and depression [6]. However, there are few studies in the literature on histopathological findings in patients with the comorbidity of these medical conditions [7] . There is a lack of knowledge about the expected histopathological profile in this clinical setting. For example, it is not well established whether hippocampal neuronal loss occurs more extensively in patients with comorbid depression than in those with only mesial temporal lobe epilepsy with hippocampal sclerosis and whether a sector of the he hippocampus is more affected than the others.

We report a clinical case of a patient initially presenting with psychiatric symptoms before being diagnosed with hippocampal sclerosis.

The observation of the patient:

This is Mr. A. Y, 23 years old, single, childless, he lives with his parents. He would have obtained his baccalaureate easily and he would have started his higher education, currently he is in the first year of French law at the faculty legal, economic and social sciences - Rabat. According to his mother, Mr. A. Y, has no history of convulsive seizures, but he would have presented during his adolescence several conversive seizures during situations of stress or psychological trauma, in the form of lethargic attacks of

comatose look and quadriplegic paralysis, he would have been described by his parents as being a person in the permanent quest for attention, always in the dramatization and the theatricalism of events and situations as well as his disorder, his opinions, his emotions and his behaviors are easily influenced and changeable by attitudes of others, diagnosis of histrionic type personality disorder was retained at age 20.

Mr AY presented himself in psychiatric consultation at the Ar- Razi hospital , 07 months ago for the management of generalized convulsive crises of progressive installation, triggered or aggravated by frustrations and conflicts, associated with a mood sadness, feeling tired in the morning, loss of interest in daily activities and pleasure, feeling of worthlessness, self-guilt and failure with dark thoughts but without suicidal ideation, Mr AY, not surrendering only rarely in his studies as soon as he began to present these convulsive crises of a few seconds, tonic of the two upper and lower limbs, without biting of the tongue or loss of urine, the frequency of his crises is variable, between two to four seizures per day which may or may not be spaced out with an inter-critical interval, and which may or may not be daily, motivating his first consultation with a neurologist, who would have requested; after a neurological examination; a metabolic and endocrine blood test, a drug test in the urine, an electroencephalogram, a cerebral computed tomography (CT) scan, the results showing no particularity then Mr. A. Y always presents crises which are repeated in the same way further limiting in addition to his daily activities and his schooling, he no longer left his family home for fear of convulsing in public or in an empty place, his psychological state would have worsened more and more, motivating his neurologist to put him on two antiepileptics (sodium valproate and benzodiazepine) and to send him to the psychiatric consultation for care, then the patient would be put on an antidepressant (sertraline 50 mg) and a benzodiazepine, with a cessation of other treatments, psychoeducation of the patient and his family, on the disease, the complications and on the treatment, with an appointment of two weeks, the evolution would be marked by a e worsening of his clinical condition, the convulsive seizures would have worsened in comparison with the previous days, a reintroduction of antiepileptics by his neurology doctor was necessary, he would be put on sodiam valproate , carbamazepine and clobazam in high doses then the state of Mr. A. Y, had improved both neurologically and psychiatrically, the mood is improved, regression of ideas of guilt, incurability and self-esteem, would have started to go to his studies, the convulsive seizures would have diminished, they would have become 4 to 5 seizures per week, an MRI examination was requested objectifying a hypotrophy of the right hippocampus, which is the seat of punctiform zone in hypersignial T2, it is associated with moderate dilation temporal horn facing suggesting right hippocampal sclerosis.

DISCUSSION

In this clinical case a comorbidity between depression and temporal epilepsy with hippocampal sclerosis was found in parallel to this clinical case a study made by Nathália Stela *et al*., [8] show that comorbid depression was found in 34.5% of patients with mesial temporal lobe epilepsy with hippocampal sclerosis. Other results in the literature speak in the same direction, in which depression varies from 21.6 to 39.6% [1, 9].

Depression is common in populations with chronic epilepsy, with prevalence studies suggesting that as many as one in five people with epilepsy may experience clinical depression at some point in their life [10, 11]. However, the underlying pathology appears to be an important factor in the incidence of depression in different epilepsy populations. Key *et al*., [12] reported significant depression in 53% of extratemporal patients, versus 33% in a temporal lobe sample. External influences such as surgical versus medical treatment and stage of treatment (pre/postoperative) may also influence the incidence of depression over time [12].

Although hippocampal volumes and their clinical correlates have been widely studied in epilepsy and clinical depression populations, the effects of comorbidity on volume loss are unknown. Quiske *et al*., [13] examined the relationship between lateralization and precise localization of the epileptic focus (mesial versus neocortical) and depression in a large sample of patients with drug- resistant epilepsy. They found that depression was a good indicator of mesial temporal pathology, but not vice versa. The authors [14] conclude that a lesion of the mesial temporal structures can be a predisposing factor, or a factor increasing the vulnerability of affective disorders in temporal lobe epilepsy. It is therefore important to determine whether the presence of depression, a common comorbidity of epilepsy, is a potential confounder in the clinical decision-making process.

CONCLUSION

Partial epilepsy with hippocampal sclerosis can easily be confused with several psychiatric clinical pictures, which highlights the need for thorough screening, an understanding of symptoms and multidisciplinary management.

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