Case Report

A unique patient with epilepsy with cinematographic visual hallucinations

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A B S T R A C T
Purpose: The purpose of this case report is to document a patient with cinematographic hallucinations, with corresponding right temporal lobe seizures on electroencephalogram (EEG).

Results: The results showed that the patient’s EEG was normal. The patient subsequently reported hallucinations, which had been occurring for the last several months. During monitoring, no interictal EEG abnormalities were identified, but a total of 11 partial seizures were captured originating from the right posterior temporal area. They either were subclinical or corresponded with his visual hallucinations.

Conclusion: The present study demonstrates focal seizures of temporal lobe origin producing complex visual hallucinations without a corresponding lesion on MRI brain imaging.

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1. Introduction

In most recent studies, complex visual hallucinations are mainly localized to the temporal lobe, likely involving anteromedial limbic structures [1]. The majority of cases in the literature describing complex hallucinations in epilepsy involve patients with corresponding brain lesions on neuroimaging [1]. There is a paucity of literature describing cinematographic hallucinations, a subtype of complex hallucinations, specifically as an ictal phenomenon. Here, we describe a patient with cinematographic hallucinations, with corresponding right posterior temporal lobe seizures on video/electroencephalogram (EEG) and no identifiable structural cause.

2. Case presentation

A 65-year-old man presented to our clinic to be evaluated for epilepsy. At age 58, he began having generalized tonic–clonic seizures during sleep. At the time of our initial evaluation in early 2015, these seizures were well controlled on valproate.

However, he was concerned about new sensations of déjà vu and brief “buzzing” in his head that started three months previously and were occurring up to ten times daily. A three-Tesla brain magnetic resonance imaging (MRI) using our epilepsy protocol was obtained following the standard of care, and no structural abnormality was detected. However, we were unable to obtain histological proof since the patient did not undergo epilepsy surgery as a part of his clinical care. A routine outpatient EEG was normal, and consequently, he was admitted to the epilepsy monitoring unit for intensive evaluation. It was during this admission that he first reported visual hallucinations, which had been occurring for several months in conjunction with the strange sensations. He had hesitated to report these episodes sooner for fear his mental health may be questioned. He described cinematographic hallucinations consisting of seeing people in color but with interruptions, as if in frames in an old movie. During monitoring, no interictal EEG abnormalities were identified, but a total of 11 partial seizures were captured originating from the right posterior temporal area (Figs. 1, 2). They either were subclinical or corresponded with his visual hallucinations.

3. Discussion

When discussing visual epileptic auras, it is common to differentiate formed or complex from elementary hallucinations. Elementary or simple hallucinations such as flashing lights, scotomas, or geometric figures have been shown to localize most commonly to the occipital lobes and may present in the visual hemifield contralateral to the ictal onset [2]. Complex visual hallucinations arise from the temporal lobe, although the posterior parietal lobe has been implicated as well. While not conclusively shown, lesional studies have suggested that temporal lobe limbic structures, rather than neocortex, are the origin of complex hallucinations [1]. Formed ictal hallucinations have been described as black and white or color, and if they are figures or people, they are unlikely to be identifiable [2]. On occasion, some ictal hallucinations of
temporal lobe origin may involve visual distortions, such as metamorphopsia or micropsia, or may consist of visual memories [3]. Some patients have a combination of complex and simple hallucinations which are thought to result from the spread of epileptic activity. The descriptor “cinematographic” was first used in 1970 in the context of migraine aura to denote visual phenomena in which normal visual input is perceived as a “flickering series of stills”, somewhat like a film [4]. Bien et al. published a series of 20 patients with visual auras, of which only three experienced complex visual hallucinations, and all three had brain lesions on MRI [1]. In conclusion, we described a patients with nonlesional epilepsy with cinematographic visual hallucinations, which, based on clinical description and surface EEG recordings, most likely localized to the posterior temporal region with spread to the limbic system.

4. Conclusion

To the best of our knowledge, this is the first description of focal seizures of temporal lobe origin producing this specific type of complex visual hallucinations without a corresponding lesion on brain imaging. The patient continues to experience auras and will be further evaluated for surgical intervention.

Conflict of interest

The authors have no financial relationships to disclose with regard to this article.

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