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Echoes of the Present: Experiential and Autonomic Auras in Temporal Lobe Epilepsy

ABSTRACT

Experiential auras such as déjà vu and jamais vu are distinctive manifestations of temporal lobe epilepsy. We report a young adult presenting with recurrent episodes of altered familiarity perception associated with unilateral piloerection. This case highlights the neurobiological basis of novelty–familiarity circuits and their disruption in focal epilepsy, and underscores the diagnostic value of experiential and autonomic auras.

Key words: Temporal lobe epilepsy, Déjà vu, jamais vu

INTRODUCTION

Temporal lobe epilepsy (TLE) is commonly associated with experiential auras, including déjà vu ("already seen") and jamais vu ("never seen"). These phenomena arise from dysfunction of medial temporal lobe circuits involved in novelty and familiarity processing. Autonomic signs such as piloerection, though less common, provide additional localizing and lateralizing value. Recognition of these features is important for accurate diagnosis and for understanding the neurocognitive basis of epilepsy.[1]

CASE REPORT

A 28-year-old right-handed individual presented with recurrent episodes characterized by sudden, intense sensations of familiarity with objectively novel situations (déjà vu). These episodes were accompanied by unilateral piloerection on the right side of the body.

Each event lasted about 30–60 seconds, with preserved awareness and no motor manifestations. There were no identifiable triggers. Neurological examination between episodes was normal.

Magnetic resonance imaging showed features suggestive of right mesial temporal sclerosis. Electroencephalography demonstrated interictal epileptiform discharges localized to the right temporal region. There was no significant past medical history and no evidence of psychiatric illness.

DISCUSSION

Experiential auras such as déjà vu and jamais vu are characteristic of TLE and reflect dysfunction of medial temporal lobe circuits responsible for recognition and memory.

Déjà vu is defined as an inappropriate sense of familiarity with objectively new experiences. It is thought to result from abnormal synchronization between the parahippocampal region and hippocampus, producing a false signal of familiarity. Intracranial recordings in epilepsy surgery candidates have shown that parahippocampal discharges can generate such experiences, supporting a parahippocampal mechanism.[2]

Jamais vu represents the opposite phenomenon—unfamiliarity with familiar stimuli.[4] This may occur due to suppression of normal familiarity signals or disruption of attentional labeling, leading to failure of recognition. Both phenomena point to dysfunction of the same novelty–familiarity network.

This circuit involves the perirhinal and entorhinal cortices, hippocampus, and modulatory structures such as the ventral tegmental area. Disruption of this network in epilepsy leads to abnormal signals of recognition or novelty, manifesting as experiential auras.[3]

Autonomic features such as piloerection further support seizure localization. Piloerection is most often associated with temporal lobe seizures, and when unilateral, it may have lateralizing value. In this case, right-sided piloerection was concordant with right temporal EEG and MRI abnormalities.

Clinically, it is important to distinguish pathological déjà vu from the common non-pathological experience seen in healthy individuals. Pathological déjà vu is typically frequent, stereotyped, brief, and associated with other seizure features.[5] Careful history taking regarding experiential and autonomic auras can greatly improve diagnostic accuracy.

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CONCLUSION

This case illustrates the convergence of experiential and autonomic auras as markers of temporal lobe dysfunction. Déjà vu, jamais vu, and unilateral piloerection reflect disruption of novelty–familiarity circuits in the medial temporal lobe. Recognition of these phenomena not only aids seizure localization but also provides insight into the neurocognitive mechanisms underlying epilepsy.

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