Persistent déjà vu associated with temporal lobe epilepsy in an adolescent

Sinem Akgül[1], Nuray Öksüz-Kanbur[1], Güzide Turanlı[2]

Divisions of [1]Adolescent Medicine, and [2]Pediatric Neurology, Department of Pediatrics, Hacettepe University Faculty of Medicine, Ankara, Turkey. E-mail: sinemhusnu@yahoo.com

SUMMARY: Akgül S, Öksüz-Kanbur N, Turanlı G. Persistent déjà vu associated with temporal lobe epilepsy in an adolescent. Turk J Pediatr 2013; 55: 552-554.

The term déjà vu is used to refer to the feeling of having already witnessed or experienced a current situation, despite the exact circumstances of the prior encounter being unclear. Although the déjà vu experience may be a benign occurrence, it may also be one of the first warning signs of a neurological event such as temporal lobe epilepsy.

Symptoms of epilepsy may be difficult to recognize in children and adolescents, as not all seizures involve obvious convulsions. Sometimes symptoms are far more subtle, and these "hidden signs" may appear to fall within the range of normal childhood behavior, or in an adolescent, may be misinterpreted as psychological problems. We describe here an adolescent diagnosed with temporal lobe epilepsy who experienced persistent déjà vu at a young age. This case presents an interesting finding, as it shows that young adolescents are able to describe in detail an aura such as déjà vu that will allow physicians to identify the disorder much earlier.

Key words: déjà vu, temporal lobe epilepsy, adolescence.

The phrase “déjà vu” comes from the French term meaning “already seen” and is used to refer to the feeling of having already witnessed or experienced a current situation, despite the exact circumstances of the prior encounter being unclear and perhaps imagined[1].

Although déjà vu has been experienced by most people and is quite a common occurrence in the general population[2] , it is rare in children, and may be one of the first warning signs of a neurological event such as temporal lobe epilepsy (TLE) [3].

In adults, TLE is characterized by a well-described semiology that includes gastric auras, arrest of activity, automatisms, and altered consciousness, but in contrast, seizures in children have a much wider clinical spectrum depending on the age of the child[4]. Studies have shown that brain maturation significantly affects clinical seizure[5]. Auras in children are usually difficult to recognize as the symptoms are tricky for children to describe; thus, they are more commonly overlooked as compared to adults. This creates a challenge for physicians in effectively identifying and treating the disorder[6]. We describe here an adolescent diagnosed with TLE who experienced persistent déjà vu at a young age.

Case Report

A 13-year-old female patient presented with a three-month history of multiple déjà vu experiences. She stated feeling certain of having previously witnessed or experienced current situations, in her own words ‘this weird feeling that whatever happens to me in daily life, I feel that I have experienced it before’. This feeling caused anxiety in the patient followed by palpitations and a feeling of nausea, which subsequently subsided within a few minutes without the need of an intervention. The patient reported no concomitant headaches, language or memory difficulties, or visual deficits. Furthermore, the patient reported no other preceding insults such as head trauma, birth injury or infection. To identify psychosocial risk factors, the HEADSS (Home, Education/employment, peer group Activities, Drugs, Sexuality, and Suicide/depression)[7] evaluation was performed and revealed no

risk factors. Her neurological examination was unremarkable. She was right-handed. To identify any accompanying psychiatric symptoms, the Turkish version of the Brief Symptom Inventory (BSI)[8] was used, and was below the pathological cut-off.

As the strongest pathological association of déjà vu is with TLE, an electroencephalogram (EEG) was obtained, which showed bilateral epileptiform discharges during hyperventilation, but it was not interpreted as epileptic activity. The patient was admitted to our hospital for EEG video monitoring. On the second day of hospitalization, she stated that she was experiencing a weird feeling that was followed by the sensation that she had already had the same experience before, and she reported intense nausea. During this aura, she answered simple questions correctly, her neurologic examination was normal, and her pupillary light reflex was bilaterally positive.

The aura lasted 63 seconds. Simultaneous to the aura, the EEG monitoring showed semi-rhythmic theta and delta frequency activity from the right hemisphere anterior temporal lobe area (Fig. 1). Brain magnetic resonance imaging (MRI) with a 1.5 tesla MRI scan was performed to evaluate an organic temporal lesion, but was normal. The patient was started on carbamazepine treatment.

Cardiac evaluation due to her palpitations was also performed; electrocardiographic findings showed extraventricular systoles, but her 24-hour Holter monitoring and the cardiac effort test were normal.

She was re-evaluated two months after treatment was initiated, and stated that the number of attacks had progressively decreased, and she had been attack-free for the past month.

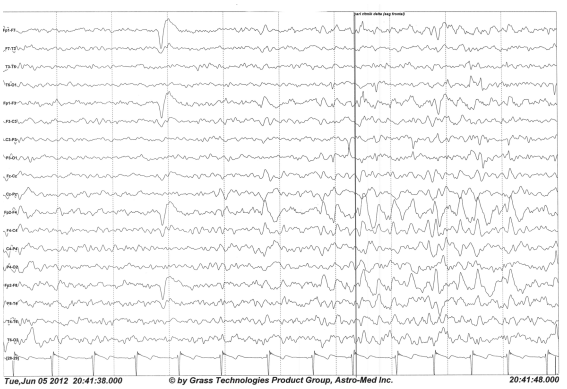

Fig. 1. EEG monitoring showing semi-rhythmic theta and delta frequency activity from the right hemisphere anterior temporal lobe area.

Discussion

Ictal déjà vu in patients with TLE ranges widely, from 23%-85%[9], and was first described by Hughlings-Jackson[10] in 1888, when he described the association between TLE, "mental diplopia" phenomena, and neuroanatomical malformations of the temporal lobe. The temporal lobe is the most frequent lobe involved in focal onset seizures. The most defining characteristic of TLE is its unique semiology, especially in adults and older children[4].

Older children may report a prodrome such as headache, irritability, and personality changes, which may even last up to a few days[6]. Auras are also more common in older children. The most commonly reported is an epigastric sensation, but other auras may be present, such as olfactory, gustatory, somatosensory, auditory, visual, and other visceral (oropharyngeal, abdominal, genital, and retrosternal) alterations.

The cause of déjà vu as an ictal manifestation in patients with epilepsy results from a discharge in the temporal cortex. Studies show déjà vu to be the most common psychiatric aura that is seen in patients with epilepsy[11].

The diagnosis of epilepsy should be made as early as possible to give a child the best chance for treatment success and also to decrease complications such as learning difficulties and social and behavioral problems. Symptoms of epilepsy may be difficult to recognize in children, as not all seizures involve obvious convulsions. As in this case, symptoms may be different to the expected seizure definition, thus making the diagnosis more challenging.

During adolescence, such seizures may be misinterpreted as psychological problems or as the child's being under the influence of drugs or alcohol. Such factors must of course be ruled out in the differential diagnosis. It is for this reason that the health care providers who evaluate such adolescents must be sure to take a detailed psychosocial history. Toward this end, HEADSS[7], a system for organizing the psychosocial history of a patient, has been developed and successfully used worldwide in

the field of adolescent health care. The patient's HEADSS evaluation revealed no psychosocial risk factors. The only stressor in her life seemed to be her school examinations.

One of the main reasons the patient applied to our hospital was due to the anxiety she experienced shortly after the déjà vu occurrences. We believe this may be due to the fact that the patient could not make sense of the cause of this sense of familiarity. We also considered the possibility that the anxiety may have been part of the aura, as emotional signs such as fear and anger may be a part of her epilepsy. To test this assumption and identify any psychological distress, the Turkish version of the BSI was used, which consists of 53 items covering five symptom dimensions as: "anxiety," "depression," "negative self concept," "somatization," and "hostility"[8]. The patient's results were below the pathological cut-off in all areas, indicating that her anxiety was in fact a symptom of her condition as a result of experiencing these auras (feelings of déjà vu) and not an independent symptom that needed psychological intervention.

Another important clinical presentation for children with TLE is autonomic changes such as cardiac and respiratory changes. The most commonly observed autonomic change in temporal lobe seizures in children is ictal tachycardia, which occurs in up to 98% of children with temporal lobe seizures[6,12]. Our patient also complained of palpitations as a part of her aura. Sudden palpitations that occur in children and adolescents must be evaluated carefully, and after cardiac evaluation, epilepsy should be considered in the differential diagnosis.

Several reports in the literature have emphasized the importance of the aura in the clinical diagnosis of TLE. We believe that this case presents an interesting finding, as it shows that young adolescents are able to describe in detail an aura such as déjà vu, which will allow physicians to identify the disorder much earlier and aid them in starting an effective treatment plan.

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