

Paryetal Lob Epilepsisi ve Kafa Travma Öyküsü Olan Migrenöz Başağrılı Dural Arteriyovenöz Malformasyonlu Olgu Sunumu

Dural Arteriovenous Malformation With Daily Migraine-Like Headache, Parietal Lobe Epilepsy and A History of Head Trauma

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Abstract

Epileptic seizures of parietal lobe origin are heterogeneous and mainly characterized by the presenting auras. We present the case of 14 years old girl had a history of severe head trauma 10 years ago. She had suffered from almost daily migraine-like headache for 4 years and suffered from complex partial seizures six times with intense fear and complex visual hallucinations for 3 months. She visited a local hospital for her symptoms 2 month ago. Her seizures were considered such as panic disorder or anxiety disorder but could not be definitely established or excluded. She had no neurological deficits. Brain magnetic resonance imaging revealed a right parietal dural arteriovenous malformation (DAVM). Routine electroencephalography showed paroxysmal spike waves in the central parietal regions. This is a case report in which a previous head trauma is strongly believed to be the cause of a DAVM with daily migraine-like headache and parietal lobe epilepsy.

Keywords: Arteriovenous malformation, epileptic seizures, migraine-like headache

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Özet

Paryetal lob orijinli epilepsilerde kaynak heterojendir ve klasik olarak auralarla başlamasıyla karakterizedir. Burada, on yıl önce şiddetli kafa travması geçirmiş on dört yaşında bir kız çocuğu olgusu sunuldu. Olgu, dört yıldan beri günlük migrenöz başağrıları ve üç aydır olan altı kez tekrarlayan kompleks görsel halüsinasyonlar ve yoğun korkuyla başlayan kompleks parsiyel nöbetlere sahipti. İki ay önce benzer şikayetlerle devlet hastanesine başvurmuştu. Nöbetleri başlangıçta panik bozukluk veya konversif olarak düşünülmüş fakat ileri tetkik yapılmamıştı. Başvurusundaki nörolojik muayenesi normaldi. Kranyal MRI' da sağ paryetal dural arteriyovenöz malformasyon (DAVM) mevcuttu. EEG incelemesinde santral paryetal bölgede paroksizmal diken dalgaları mevcuttu. Paryetal lob epilepsisi ve migrenöz başağrılı bu olguda, DAVM nedeninin muhtemelen geçirilmiş kafa travmasına bağlı olduğu düşünüldü.

Anahtar Kelimeler: Arteriovenous malformation, epileptic seizures, migraine-like headache

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Introduction

Epileptic seizures of parietal lobe origin are heterogeneous and mainly characterized by the presenting auras, although the most dramatic clinical manifestations may reflect spread, and overshadow the focal origin. Fear or

anxiety can form part of the epileptic critical symptom pattern. This means that differentially diagnosing this type of epilepsy is difficult, especially when confronted by what appears to be a panic attack. We report the case of a girl who having initially presented complex partial seizures was misdiagnosed with panic or anxiety disorder.

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Case

A 14-year-old, right-handed, girl, with a negative history of neuropsychiatric illness, was referred to our outpatient clinic two months after having begun to experience complex partial seizures. During these seizures, the patient experienced intense fear and complex visual hallucinations. These symptoms were accompanied by severe agitation. The episodes were paroxysmal and unprovoked, lasting about 5 minutes, which resolved completely and spontaneously. These attacks presented almost weekly. She visited neurology and psychiatry departments in a local hospital, and the results of electroencephalography (EEG) were normal. A diagnosis of panic or anxiety disorders was presumed and the patient was treated with psychopharmacological treatment. The therapy was terminated after a few weeks, because the symptoms did not respond to treatment. Two months after her first ictal event, the patient was admitted to our medical department for having suffered two attacks in a week, followed by amnesia, agitation and a long post-ictal period. Her interictal mental condition was normal, and there were no psychiatric or personality changes. She had no history of febrile convulsions or epilepsy. She had suffered from almost daily migraine-like headache with visual aura for 4 years and had a history of severe head trauma that had occurred 10 years earlier. Her neurological examination was normal. The patient's blood test showed normal findings, including the C-reactive protein level. Brain computed tomography had normal in May 2007 (Fig 2). An interictal EEG was performed during her admission and showed paroxysmal spike waves in the right central parietal regions in our department (Fig 1). Brain magnetic resonance imaging (MRI) revealed an enlargement of the subarachnoid space extending from approximately tentorium to parieto-occipital regions in the right hemisphere. Also, it showed an obliteration of gyri and hypointense signal on T1 and high signal intensity on T2-weighted images on the right parietal lobe. Dural arteriovenous malformations (DAVM) in the parietooccipital region and atrophy in parietal lobe were diagnosed (Fig 3). We used anticonvulsant (topiramate) in

order to control the seizure and daily migraine-like headache. Seizures control improved after treatment with anticonvulsant, but not changed her headache. We received written informed consent form from her parents. MR angiogram was insufficient for detection of arteriovenous malformation. As the patient was neurologically unstable, surgical treatment was advocated.

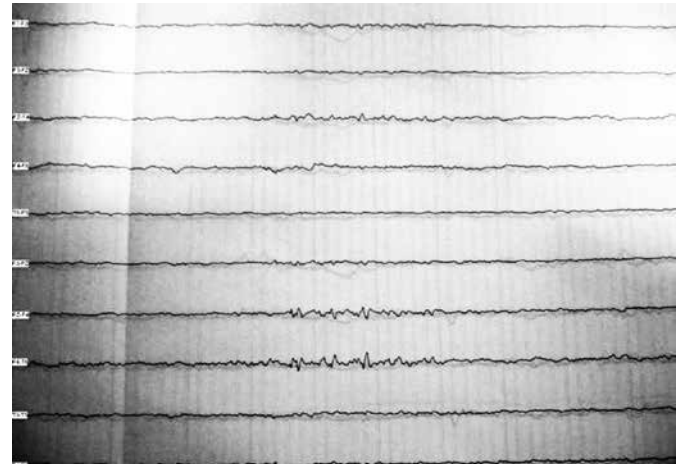


Figure 1



Figure 2

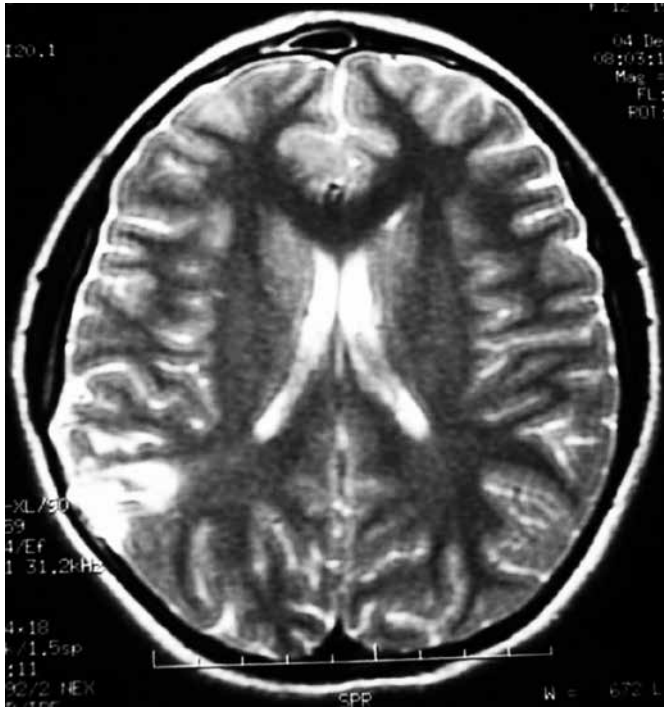


Figure 3

Discussion

The focal cerebral lesion provoking panic attacks as symptoms of epilepsy is usually localized in the right hemisphere, temporal lobe, or parietal lobe. The parietal lobe occupies a relatively smaller volume of the brain than the temporal or frontal lobe, and is very closely connected with the adjacent lobes.¹ The function of the parietal lobe is also more complex, which exacerbates the difficulty in understanding the symptoms of epilepsy of parietal lobe origin. The parietal lobe does not play a major role in the generation of typical focal seizure patterns. All seizures activities began in the parietal lobe harboring the lesions, and then spread immediately to the adjacent lobes in most seizures, where the clinical symptoms were produced. Therefore, the parietal lobe is a pure generator of seizures, whereas most clinical symptoms originate from adjacent lobes following seizure onset. Ictal spread to the frontal supplementary motor area or temporo-limbic areas were often observed.²

Retrospectively, the ictal events, initially considered symptoms of panic disorder, were reinterpreted as

complex partial seizures with affective symptoms in this case. Thus, a diagnosis of epilepsy was strongly suggested by the data available (event semiology, structural lesion, failure to respond to psychiatric medications). Usually, in fear attack of epileptic nature, the onset is paroxysmal, the duration is very brief (few seconds), the EEG can show specific features and the clinical manifestations are stereotyped. Cranial DAVMs are congenital or acquired niduses of arterial shunting within the dura mater. Although most are believed to be acquired, some probably are congenital lesions. There have been numerous reported cases of DAVMs becoming clinically evident after cranial cerebral trauma, and in these cases the lesion can be placed in one of three major posttraumatic categories:¹ those at the site of dural injury,³ those remote from the site of injury, and⁴ those posttraumatic DAVMs detected incidentally after traumatic injury⁵ Commonly the clinical manifestations of a DAVM with sinus venous drainage are cranial bruit, tinnitus, headaches, and visual disturbances. Focal CNS symptoms, such as seizures, transient ischemic attacks, and motor weakness, are indicative of cortical venous drainage.

Our case had suffered from almost daily migraine-like headache with visual aura for 4 years. Migraine-like headaches occurred in 0-30% of reported cases of intracranial AVM. Most of the lesions associated with these headaches lie in the parieto-occipital region of one cerebral hemisphere. The pathogenesis of headache is unclear, but larger nidus volume, tortuous change of feeding artery, and cortical drainage with reflux in the superior sagittal sinus are associated with higher incidence of headache. Frequent migraines or migraine-like headaches should be a factor when considering surgical treatment for DAVM.

This is a case report in which a previous head trauma is strongly believed to be the cause of a DAVM with daily migraine-like headache and parietal lobe epilepsy with intense fear and complex visual hallucinations. The right parietal lobe epilepsy should be considered as the differential diagnosis of complex partial seizures when patients frequently complain of fear or anxiety

Kaynaklar

1. Siegel AM, Williamson PD. Parietal Lobe Epilepsy. Adv Neurol 2000; 84, 189-199.
2. Caksen H, Unal O, Tombul T, Cesur Y, Abuhandan M. Dural arteriovenous malformation: a rare cause of epilepsy in childhood. Neurol India. 2001 Sep;49(3):308-10.
3. Byrne JV. Cerebrovascular malformations. Eur Radiol (2005) 15: 448–452
4. King WA. Dural Arteriovenous Malformations: Indications for Treatment and Surgery. Journal of Stroke and Cerebrovascular Diseases, 1997; 6(4): 292-294.
5. Mintzer S, Lopez F. Comorbidity of ictal fear and panic disorder. Epilepsy & Behavior 2002; 3(4):330-337.