

Palpitations caused by a Seizure with Autonomic Features

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خفقان بسبب نوبة صرع العصب اللاإرادي

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الملخص: خفقان القلب من الأعراض الشائعة في الممارسة الطبية، وتنتج عادة بسبب عدم انتظام ضربات القلب، وبعض المشاكل النفسية أو أسباب أخرى متنوعة، مثل فقر الدم أو خلل الغدد الصماء. نادرا ما تكون بسبب النوبات الصرعية العصبية اللاإرادية. ننشر في هذا التقرير حالة امرأة تبلغ خمسة وخمسين عاما جاءت إلى مستشفى جامعة السلطان قابوس بسلطنة عمان تشكو من نوبات متكررة من الخفقان. وشملت الأعراض المرتبطة بها ضيقاً في التنفس وتعرقاً، يليها الاحساس بالدوار. وفي فترة لاحقة، بدأت تشكو من أعراض أخرى مثل آلام في البطن ثم ترتفع إلى الصدر ويتبعها فقدان للوعي. وقد أشارت نتيجة تخطيط الدماغ إلى وجود زيادة في النشاط الكهربائي بالمخ (صرع)، وقد استجابت حالة المريضة إلى الأدوية المضادة للصرع، مما يشير بقوة إلى أن التشخيص هو صرع الفص الصدغي. لقد أظهر تخطيط القلب بين النوبات الصرعية نتائج طبيعية مما يؤكد أن حالة الخفقان كانت بسبب النوبات الصرعية العصبية اللاإرادية وبناء عليه ينبغي اعتبار الصرع ضمن أحد أسباب زيادة خفقان القلب وبصفة خاصة إذا حدثت أعراض الخفقان بصورة دورية.

مفتاح الكلمات: اضطراب ضربات القلب؛ الصرع؛ الفص الصدغي؛ نوبات؛ تقرير حالة؛ عمان.

ABSTRACT: Palpitations are a common symptom of presentation in medical practice. They are usually caused by cardiac arrhythmias, psychiatric problems or other miscellaneous causes, such as anaemia or endocrine causes. They are rarely due to autonomic seizures. We report a 55-year-old woman who presented at Sultan Qaboos University Hospital, Oman, with recurrent episodes of palpitations. Her associated symptoms included breathlessness and excessive sweating, followed by a sensation of dizziness. During subsequent episodes, she experienced symptoms of rising abdominal pain followed by a loss of consciousness. Positive electroencephalogram findings, as well as the response of the symptoms to antiepileptic drugs, were strongly suggestive of temporal lobe epilepsy as the possible diagnosis. The fact that the cardiac investigations, performed during an interictal period, were unremarkable also supports the hypothesis that the palpitations were linked to seizures. Epilepsy should be considered as a differential diagnosis of palpitations, especially if the palpitations are episodic.

Keywords: Arrhythmias, Cardiac; Epilepsy, Temporal Lobe; Seizures; Case Report; Oman.

PALPITATIONS ARE USUALLY CAUSED BY cardiac arrhythmias (43%), psychiatric problems (31%), no specific cause (16%) or miscellaneous causes (thyrotoxicosis, anemia, medications or caffeine [10%]).¹ Palpitations can also be related to neurological problems; they may result from seizures involving the autonomic system, such as complex partial seizures, generalised tonic-clonic seizures or simple partial seizures.² If these are associated with respiratory dysfunction, they may lead to sudden unexpected death in epilepsy (SUDEP).³

A case of a middle-aged woman presenting with episodes of palpitations, dizziness, breathlessness, increased sweating and presyncope is reported, in

which the diagnosis of temporal lobe epilepsy was initially missed.

Case Report

A 55-year-old housewife presented to the Family Medicine & Public Health Clinic of Sultan Qaboos University Hospital, having had recurrent episodes of palpitations over a period of one year. On further exploration of the history, she admitted that these symptoms were associated with breathlessness and increased sweating, followed by a sensation of dizziness and generalised weakness. During these episodes she had a sensation of presyncope, but experienced no loss of consciousness. She

experienced approximately 3 to 4 episodes per day, with each episode lasting a few minutes and unrelated to psychological effort or emotional stress. The patient had sought medical help at different hospitals without success. Her past medical, family and social history was unremarkable. She was a non-smoker and there was no family history of epilepsy.

On examination, her pulse and blood pressure were normal. Blood tests, including a complete blood count, erythrocyte sedimentation rate, electrolytes, glucose, renal and thyroid function tests were all normal. An electrocardiogram (ECG) showed normal sinus rhythm, and a Holter ECG did not reveal any cardiac arrhythmia. An electroencephalogram (EEG) was abnormal and showed features of temporal lobe epilepsy (TLE). The patient responded to carbamazepine therapy, which controlled her symptoms; she noticed that the symptoms recurred only upon stopping the medication.

One year later, the patient presented with episodic symptoms of rising abdominal pain, which started at the epigastric region, radiated upwards to the head and were followed by a loss of consciousness. They were also associated with the palpitations. Again, the patient commented that these symptoms also occurred only upon stopping the antiepileptic medication.

Discussion

The clinical features in this case, along with the positive EEG findings, as well as the response of the symptoms to antiepileptic drugs, were strongly suggestive of TLE as the possible diagnosis. The recurrence of the symptoms whenever the patient stopped the antiepileptic drugs, and their disappearance after resuming the medication, confirmed this diagnosis. The initial presentation of her TLE seemed typical of a simple partial seizure, which can include symptoms of strange or unpleasant sensations in the stomach, chest, or head; changes in heart rate or breathing; sweating, or goose bumps.⁴ The symptoms of rising abdominal pain which the patient experienced one year later, after stopping the medication, also confirms the diagnosis; this is a symptom known to be related to TLE, as has been observed for many decades.⁵ During this one-year period, the

patient experienced losses of consciousness, which indicates the progression of her seizures to complex partial seizures.⁶

It is difficult in this case to establish the exact link between the palpitations and the TLE seizures, because we have no data concerning the cardiac rhythm abnormality, or its relationship to the epileptic event, since the episodes occurred in an unmonitored environment. However, the unremarkable results of the cardiac investigations, which were performed during an interictal period, indicate that our patient's palpitations were most probably linked to the seizures.

It is reported that the ictal autonomic symptoms of complex partial seizures include a variety of symptoms which are related to cardiovascular, respiratory, gastrointestinal, cutaneous, papillary, urinary, genital, and sexual manifestations.⁷ Most of these symptoms manifested in our patient. Ictal tachycardia is the most common ECG finding, and accounts for 73–99% of seizures.⁸ There are additional reports of other types of arrhythmias related to epilepsy, such as ictal bradycardia,⁹ and atrial fibrillation.¹⁰

The mechanism behind these ictal autonomic symptoms is believed to be related to the involvement of the central autonomic network. They may accompany other ictal symptoms or may be the predominant seizure.¹¹ It is postulated that seizures originating from the right temporal lobe usually cause tachycardia when there is sympathetic overactivity, while the ones originating from the left side cause bradycardia due to the predominance of parasympathetic activity.¹²

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Conclusion

This report contributes the case of another subject to the recently growing literature on autonomic dysregulation during epileptic seizures. Although cardiac, endocrine and psychiatric disorders are the most common causes of palpitations, seizures should be considered as a possible cause, particularly if the seizures are episodic, and accompanied by

other autonomic symptoms, such as dizziness, sweating, breathlessness, and confusion.

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