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EPILEPTIC SEIZURE PRESENTED WITH STROKE LIKE EPISODES AND ECG CHANGES IN SUBACUTE STROKE PATIENT

Case Report

SUBAKUT İNME HASTASINDA İNME BENZERİ SEMPTOM VE EKG DEĞİŞİKLİKLERİ İLE PREZENTE OLAN EPİLEPTİK NÖBET

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ABSTRACT

Acute or chronic autonomous cardiac symptoms like, ictal syncope, changes of heart-rate, shortening of QT intervals and other various electrocardiographic changes often accompany epileptic seizures. Cardiac changes occurring during epileptic seizures may cause sudden unexpected death in epilepsy. Patients that have clinical presentations mimicking repetitive stroke and electrocardiogram findings similar to myocardial infarction, should be investigated for epileptic seizure in differential diagnosis.

In this case report, we emphasize the importance of the differential diagnosis of epileptic seizures for a patient that has electrocardiographic assessment of ST changes mimicking myocardial infarct hospitalized with an acute cerebrovascular event followed by unconsciousness and hemiplegia.

Key words: Cerebrovascular, ECG, Epileptic Seizure

ÖZET

Iktal senkop, kalp ritm bozukları, QT interval kısalması ve diğer EKG değişiklikleri gibi akut ve kronik otonomik kardiak semptomlar genellikle epileptik nöbetler ile beraber izlenir. Tekrarlayan inme ataklari ile presente olan ve EKG de MI benzeri değişiklikler olan hastalarin ayırıcı tanısında epileptik nöbet de düsünülmelidir.

Bu olgu sunumunda, akut serebrovaskuler olay sonrası bilinc değişiklikleri ve hemipleji tarifleyen, EKG de MI benzeri ST değişiklikleri olan hastanın ayırıcı tanısında epileptik nöbetin önemini vurguladık.

Anahtar kelimeler: Serebrovaskuler, EKG, Epileptik Nobet

CASE REPORT

A 47 year old male patient was admitted to the emergency department with acute unilateral weakness in the right arm and leg within the first 3 hours after the symptoms appeared. National Institute of Health Stroke Scale (NIHSS) of the patient was 6 and MRI diffusion sequences have demonstrated the acute

infarct. The patient was diagnosed with acute stroke and was retained for clinical follow-up. On the third day after admission, acute impairment of cognition, cold sweating, and the deviation of the eyes toward the patient's right was observed, although his blood glucose levels were within the normal range and he did not have any spasms or urinary incontinence. ECG revealed ST changes mimicking MI in d1, d2, v1, v2 and v3. The concurrent neurological examination confirmed hemiplegia of the right upper and lower limbs. No acute pathology was detected in the cranial computerize tomography (CT). The patient was admitted to the angiography laboratory with the pre-diagnosis of acute MI and repetitive acute ischemic cerebrovascular disease. No acute pathology was detected by cerebral or coronary angiography. The follow-up ECG revealed that the patient had returned to normal as well the neurologic examination returned to normal.

The possibility of acute MI and repetitive stroke were disregarded from the differential diagnosis and electroencephalography (EEG) was performed due to suspicion of Todd's paresis caused by the epileptic seizures. In the EEG, disorganization was detected in left frontal area and hyper synchrony was recorded. Antiepileptic treatment was started in the patient, and no more seizures were seen during the clinical follow-up after the antiepileptic treatment.

DISCUSSION

The anatomical and functional connections between the brain and heart have been well-established in both normal and pathological conditions. Cardiac arrhythmias and ST segment depression are known to occur in intracerebral conditions like subarachnoid hemorrhages and cerebrovascular events. Recently, the link between the brain and heart has become an important area of research in serebrovascular events (4).

Typical autonomous cardiovascular changes include variability in heart rate and rhythm, changes in blood pressure, and changes in ECG (5). The ECG changes observed in patients with epileptic seizure are ST depression, ST elevation and T wave inversion (6,7). These changes might occur in the pre-seizure period, during the seizure, or in the postictal period. The cardiac changes are associated with the seizure period and generalized seizures occur more frequently than the others.

It has been hypothesized that cardiac events might account for sudden unexpected deaths in epileptic patients (SUDEP). Initial reports on this hypothesis include the case reports on angina and sinus arrest that were published in 1953 and 1954. Since the 1970s, the amount of literature regarding cardiac events induced by epilepsy has increased tremendously (2). The cardiovascular effects of epilepsy have recently been mentioned in many case reports and prospective studies on long-term effects were recently held. However, only in very rare cases was EEG performed with concurrent heart monitoring. and these events are usually misinterpreted as ECG changes due to MI; patients are directed to coronary care units (5).

Acute seizures, whether clinical or electrographic, have been shown to be associated with neurological worsening on the National Institutes of Health Stroke Scale (NIHSS) and with increase in brain edema and midline shift (8). Higher mortality rates have been reported among stroke patients with seizures after 30 days and 1 year, along with poorer neurological function at presentation and worse functional outcome measured on the modified Rankin score at follow-up (9). Greater stroke severity, cortical involvement, and hemorrhagic stroke including intracerebral or subarachnoid hemorrhage are predictors of post-stroke seizures (9-10).

Here, we present a case of a patient who exhibited autonomous symptoms and ECG changes during the clinical

follow-up after being hospitalized due to an acute cerebrovascular event. Cognitive changes, deviations in the eye, and cold sweating occurred on the third day after his arrival to the hospital, and ST-depression was detected in the ECG. No pathologic evidence was detected in the coronary angiography performed in the cardiology department. A cerebral angiography was performed in the angiography laboratory to determine the differential diagnosis of repetitive stroke due to the concurrence of hemiplegia with cognitive changes, but no acute pathology was detected.

This spesıfıc case represents that epileptic seizures emerge with stroke like symptoms and ECG changes mimicking MI on subacute stroke patients.

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