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Stretch Syncope: A Rare Case Mimicking Seizure

Nöbeti Taklit Eden Nadir Bir Streç Senkop Olgusu

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ABSTRACT

Seizure, syncope, and psychogenic fainting may be considered when a patient presents with temporary loss of consciousness. Syncope is characterized by a temporary loss of consciousness and postural tone due to a lack of adequate cerebral blood perfusion. The most common cause of syncope in young subjects is a reflex syncopal event and in particular a vasovagal faint. Stretch syncope is a rare disorder that is clinically difficult to distinguish from seizure and may arise while stretching the neck hyperextended in an up-right standing position or sitting. The pathophysiology of stretch syncope is decreased cerebral blood flow caused by vertebrobasilar insufficiency or extrinsic compression of vertebral artery. We have reported this rarely seen stretch syncope case of a 7-year-old patient who presented with seizure. The aim of this case presentation is to increase awareness of stretch syncope that can easily be confused with epileptic seizure.

Key Words: Child, Seizure, Syncope

ÖZET

Geçici şuur kaybı ile gelen hastada nöbet, senkop ve psikojenik bayılma ön tanılar olarak düşünülebilir. Senkop serebral hipoperfüzyona bağlı geçici bilinç ve postür kaybıdır. Genç bireylerde senkobun en sık nedeni bir refleks senkop olan vazovagal senkopdur. Streç senkop ise nöbetden ayırımı zor olan nadir bir antite olup, ayakta veya otururken başın hiperekstansiyonu ile oluşan geçici bilinç kaybıdır. Patofizyolojide; vertebrobaziller yetersizlik veya vertebral arterlerin ekstrensek basısına bağlı serebral kan akımının azalması bulunmaktadır. Burada yedi yaşında nöbet şikayeti ile gelen nadir bir streç senkop olgusunu farkındalığı artırmak amacıyla sunduk.

Anahtar Sözcükler: Çocuk, Nöbet, Senkop

INTRODUCTION

Syncope can be defined as a temporary loss of consciousness and postural tone due to a lack of adequate cerebral blood perfusion. Subjects suffering from syncope can be classified into two age groups as the young (with an age range of 15-19 years) and the old. The syncope incidence is increased in young subjects with an approximate frequency of 0.05-0.3%. It is more prevalent in females than males (1,2). The most common cause of syncope in young subjects is a reflex syncopal event that includes stretch syncope (1-3). Stretch syncope is a rare occurrence that is clinically difficult to distinguish from epilepsy and may arise while stretching the neck hyperextended in the standing position followed by various degree of loss of consciousness. The pathophysiology of stretch syncope is decreased cerebral blood flow caused by vertebrobasilar insufficiency or extrinsic compression of the vertebral artery.

The condition is most commonly witnessed in male teenagers with an inherent tendency to faint. One can make an argument for mechanical extrinsic vertebral artery compression from its occurrence predominantly in adolescents. As it predominantly occurs in adolescents, an argument for mechanical extrinsic vertebral artery compression can be put forward, due to the well-known fact that the physiological ranges of fall movements in the cervical spine and craniocervical junction gets narrower with age (4,5). This case was presented due to a stretch syncope that was erroneously referred to as a seizure.

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CASE REPORT

A 7-year-old girl came to our emergency outpatients with a complaint of loss of consciousness while having her hair brushed by her mother in an up-right standing position. It was reported that during the incident her eyes were open with pupils shifting back and she felt faint with a short contraction in the body. As there was a contraction in the body and her eyes were open, we thought that she had suffered a seizure. There was no syncope or seizure in her medical history. Her physical and neurological examination was unremarkable. After getting a detailed history of the case, it was learned that syncope had occurred after hyperextension of the neck while browsing hair. There were no prodromal symptoms or postictal confusion. There were no other precipitating stimuli except hyperextension of the neck. Routine laboratory tests, inter ictal electroencephalogram (EEG) and cardiac examination [electrocardiography (EKG), echocardiography (ECHO) and effort test] were all normal and she was diagnosed with stretch syncope.

Craniocervical magnetic resonance imaging (MRI), cervical spine radiography, Doppler ultrasonography of vertebral arteries and middle cerebral artery were performed in a neutral head position and all imaging studies were normal. Dynamic angiography during neck hyperextension was planned but was refused by the family. The family was informed that the hyperextension of the child's head must be prevented and there was no recurrence of the complaint during the follow-up period.

DISCUSSION

Interruption of the cerebral blood flow for 6-8 seconds or reduced brain oxygenation by 20% can lead to full loss of consciousness. On rare occasions, syncope may develop with a decrease in substances essential for the brain (for example in hypoglycaemia) without a decrease in brain blood flow. Reflex (neural pathways) syncope is the most common cause of syncope in childhood. The transient nature and numerous causes of the syncope episodes make it difficult to diagnose the disease. A careful history is the leading factor for diagnosis. In neurological practice, syncope is often confused with epileptic seizures (6).

In the diagnosis of epilepsy, misdiagnoses have been reported at a rate of 20-30%. Syncope has a significant role in these errors. Urine incontinence, tongue biting and cyanosis occur frequently during epileptic seizures. Epileptic seizures may occur under any circumstances, even during sleeping; whereas syncopes are observed while standing, when hungry, in situations such as in a crowded, airless environment, with a sudden feeling of pain, during a rectal examination, on the sight of blood or while giving blood. Recovery from an epileptic seizure, often defined as the postictal state, is a period of confusion lasting 10-30 minutes. In patients who have fallen to the ground during syncope; cerebral perfusion is rapidly corrected and return to normal consciousness is achieved quickly. In confusing cases, definitive diagnosis can be made with EEG. However, it must not be forgotten that in some epilepsy cases the EEG could be normal (6). In our case, there were no prodromal symptoms such as pain and return to normal consciousness was rapid.

Stretch syncope is a rare type of reflex syncope and does not have an established etiology. Hyperextension of the head and neck is the crucial position that induces the syncope. The head rotation and extension can cause contralateral, ipsilateral and more rarely, bilateral vertebral artery obstruction, most likely in the mobile atlantoaxial segment. Occipitoatlantal instability is a risk factor of vertebral artery compression and it may be difficult to verify it among similar anomalies and special diagnostic techniques may be required. Magnetic resonance imaging, alone in the diagnosis of stretch syncope does not suffice; radiographs, Doppler ultrasonography and dynamic angiographies with maneuver may also be required (4). In our case, further evaluation with imaging techniques while stretching was planned but was refused by the family.

Symptoms such as loss of consciousness; vertigo, visual blurring, tinnitus and numbness in the extremities are the typical aura symptoms of vertebrobasilar ischaemia. In our case, there was none of these symptoms in the history of the case. The mechanism of stretch syncope that leads to the systemic decrease in blood pressure is not clear, but the delay between the stretching and development of the hypotension and the appearance of the slow wave EEG abnormalities, a reflex mechanism is most likely to stand as the cause (5). Stretch syncope may be misleading because of the stereotyped motor manifestations such as asymmetric facial and upper limb twitching, rhythmic generalized slow wave activity in EEG and ictal tachycardia. Presyncopal symptoms such as pallor and pain are not observed in stretch syncope. Hypotension and bradycardia are usually seen in vasovagal syncope whereas tachycardia during stretching and unconsciousness are seen in stretch syncope (5). Our case was diagnosed as stretch syncope due to the absence of prodromal symptoms such as pain, pallor vertigo, visual blurring, tinnitus, and presence of triggering posture.

Avoidance of the triggering posture is necessary in most patients to prevent further attacks. The most important diagnostic methods in the examination of patients with syncope are the history and physical examination. Further tests should be planned in accordance with the clues obtained by the history and physical examination. The aim of this case presentation was to increase awareness of stretch syncope that can be confused with epileptic seizure.

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