

Seizure-Induced Petechial Rash on the Cheeks

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Abstract

Background: Petechiae can be caused by a variety of situations and conditions and they can play a role in both forensic science and in medical diagnosis. It can also occur when someone has a seizure.

Objective: In this case report, we describe a patient who was admitted to the ED with syncope and petechial rash on the cheeks due to seizure.

Case report: A 71-year-old female patient was admitted to the ED with syncope. Her son said that he found her unconscious and after the syncope petechiae appeared instantly on her cheeks. After one hour follow up in the ED, generalized tonic-clonic seizure had occurred. After initial stabilization, she transferred to neurology department with secondary epilepsy diagnosis. No additional seizures were observed during the follow-up period. After 24 hours of petechiae development, the size of petechial area was decreased by nearly 50% and the patient was discharged at the end of the 24 hours. On the third day control, petechial area had totally disappeared.

Conclusion: Seizure related petechial rash is a rare finding and in the absence of other objective signs, it may be a clue for the diagnostic purposes. However, it should be kept in mind that a patient with a history of syncope particularly associated with petechiae on any part of the face may be suffering from seizures.

Keywords: Seizure; Petechial rash; Emergency department

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Introduction

Petechial hemorrhage causes distinctive findings which can vary in size and distribution ranging from few tiny markings to an array of large blushing areas and may look like a rash or abrasion known as petechiae. The hemorrhage that causes the petechiae seems like red, brown or purple with a size measuring less than an eighth of an inch. Usually petechiae do not bump, nor lose color when one presses on them.

Petechiae can be caused by a variety of situations and conditions, and they can play a role in both forensic science and medical diagnosis. The most common cause of facial petechiae is physiological trauma occurring during coughing, vomiting and crying, especially around the eyes. Petechial hemorrhage can also occur when someone has a seizure. Probably mechanism may be considered a valsalva maneuver in which during the tonic phase of a generalized tonic-clonic seizure the result is capillary rupture.

In this case report, we describe a patient who admitted to the ED with syncope and petechial rash on the cheeks due to seizure.

Case Presentation

A 71-year-old female patient was admitted to the ED with syncope. Her son reported that he found her unconscious and after the syncope, petechiae appeared instantly on her cheeks. Within minutes she became conscious and was brought to the hospital by ambulance. The patient had no history of epilepsy. Also, she had no complaints before the syncope. In her medical history, she had hypertension and had used bisoprolol fumarate. She was a nonsmoker and not taking alcohol at all. Upon admission, her vital signs were unremarkable. The physical examination was normal except for petechiae on her cheeks which it did not fade by pressure thus indicating that they had occurred after the syncope (**Figure 1**). The patient's biochemical laboratory tests results were within the normal ranges. The patient was monitored in the ED. Generalized tonic-clonic seizure had occurred after one hour follow-up in the ED. Non-contrast CT of the brain taken after postictal period was normal. After initial stabilization, she was transferred to the neurology department with diagnosis of secondary epilepsy. Antiepileptic treatment was started and the patient was followed up for 24 hours. No

more seizures were observed during follow-up period. After 24 hours petechiae development, the size of petechial area had decreased (**Figure 2**) and the patient was discharged at the end of the 24 hours. During the third day control, it was observed that petechiae had totally disappeared.



Figure 1 Petechiae on her cheeks following a secondarily generalized tonic-clonic seizure.



Figure 2 24 hours after the development of petechiae, its size decreased.

Discussion

Petechiae can be considered a physical finding due to seizure. Seizure related petechial rash is a rare finding and in the absence of other objective signs it may be a clue for the diagnosis. Also, these physical findings may be the only findings indicating that a seizure had occurred during sleep [1,2].

When people are asphyxiated, classic petechiae occur due to blood vessel bursts. They generally develop around the eyes but may appear at any part of the face such as cheeks. Generalized seizures in association with petechiae were described for the first time by Bychowski in 1903. In 1922, Guillaume reported that this type of petechiae have a mechanical origin, as in the Valsalva maneuver during the tonic-clonic contraction of the chest and abdominal muscles with the glottis closed [3]. Also Reis et al. [4] reported that for the petechial rash during a seizure is a possible due to pathophysiological mechanisms including valsalva-induced capillary hypertension with a secondary purpura, ictal corticolimbic stimulation of the autonomic nervous innervation of facial vasomotor structures and trigeminal-mediated local release of vasoactive substances.

Petechial rash associated with seizures has been reported in various cases. Some examples of such cases cited in literature include bilateral periorbital, enoral and superior thoracic regions [1]; bilateral sub-conjunctival hemorrhages and facial area [2]; thoraco-cervicofacial area [3]; right facial, cheek and periorbital area [4]; bilateral subconjunctival hemorrhages and head, neck, scalp regions [5]; subconjunctival hemorrhages and head, upper abdominal petechiae [6]. In our case, there were petechiae only on the cheeks with no accompanying sub-conjunctival hemorrhage. In these cases petechiae are harmless and don't need special treatment and they generally resolve themselves within a few days.

Conclusion

In conclusion from this case, it is evident that physicians should keep in mind the possibility of seizure in a patient with history of syncope particularly associated with petechiae on any part of the face.

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