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of first time ICD recipients were candidates for S-ICD.[1]

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CASE REPORT

WILEY PACE

Stressful medical explanation may cause syncope in patients with emotion-triggered neurocardiogenic syncope

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To the Editor:

Neurocardiac syncope (NCS) is a form of neurally mediated syncope (NMS). Previous reports have indicated increased emotional stress as a trigger of NMS. However, there are very few documented cases of emotion-triggered NCS.[1] We present a second case of NCS triggered by stressful medical explanation.

A 23-year-old female started to have recurrent "seizures" elicited by emotional stress two or three times per year from the age of 11 years. She reported unremarkable past and family history. Her seizures started with autonomic symptoms, such as palpitation and excessive sweating, followed by convulsion. At a previous hospital, repeated electroencephalography (EEG), brain magnetic resonance imaging, and Holter electrocardiography (ECG) found no abnormalities. She was referred to our department to receive a comprehensive evaluation of epilepsy. Neurological examinations showed no abnormalities. Long-term video EEG captured her habitual seizure when she received a routine visit by the chief physician. We found that her seizure was preceded by cardiac asystole caused by atrioventricular block (AVB). EEG showed generalized slowing 6 seconds after the cardiac asystole, with sequential complete cessation of cerebral electrical activity when she lost consciousness with convulsion (Figure 1). Video EEG with simultaneous ECG monitoring clarified her seizure as convulsive syncope. Based on the diagnosis of NCS, her attending physician promptly explained her diagnosis and the following plan for transfer to the intensive care unit for close observation and possible emergent implantation of a pacemaker. The stress induced by the sudden medical explanation resulted in her losing consciousness due to cardiac arrest (Figure 2) as documented by cardiac monitoring. Head-up tilt examination performed for investigation was positive. Her attack was caused by the cardioinhibitory mechanism, and occurred 1 minute after the head-up tilt examination was started. Patient management conference concluded that she was indicated for ganglionated plexi ablation intended to eliminate the vagal effect on the heart and abolish the cardioinhibitory reflex.[2–5] After the intervention, her syncope has remained well controlled for over 3 years.

This case confirms the presence of emotion-triggered NCS, a rare form of NMS. In this patient, AVB was fundamental in the occurrence of NCS. Syncope due to AVB is reported to cause a higher frequency of traumatic injuries without AVB.[6] Additionally, the younger subgroup with syncope due to AVB tend to suffer attacks triggered by emotional stress, such as injection-blood phobia.[6] Notably, the medical explanation to the patient triggered NCS in this case. Emotional stress can be induced by multiple factors depending on the individual personality and environmental factors, especially at the diagnosis.[7] Physicians should be mindful of the patient's psychological stressors when communicating critical medical information to minimize the harmful event. Therefore, cardiac monitoring is recommended when patients with emotion-triggered NCS receive medical explanations.

CONFLICT OF INTEREST

None declared.

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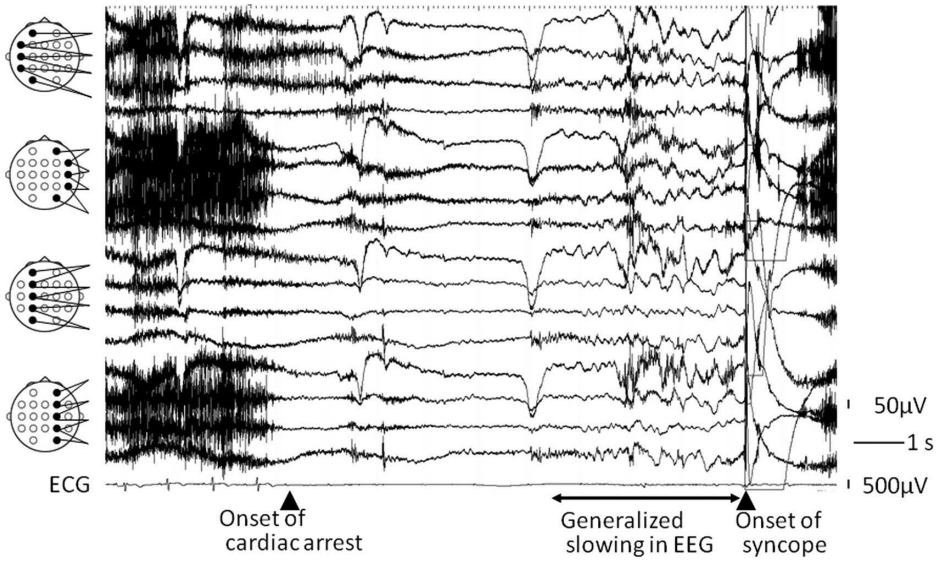

FIGURE 1 Findings of EEG and ECG during the syncope. EEG shows generalized slowing 6 seconds after the cardiac asystole, with sequential complete cessation of cerebral electrical activity at the onset of syncope. ECG = electrocardiography; EEG = electroencephalography

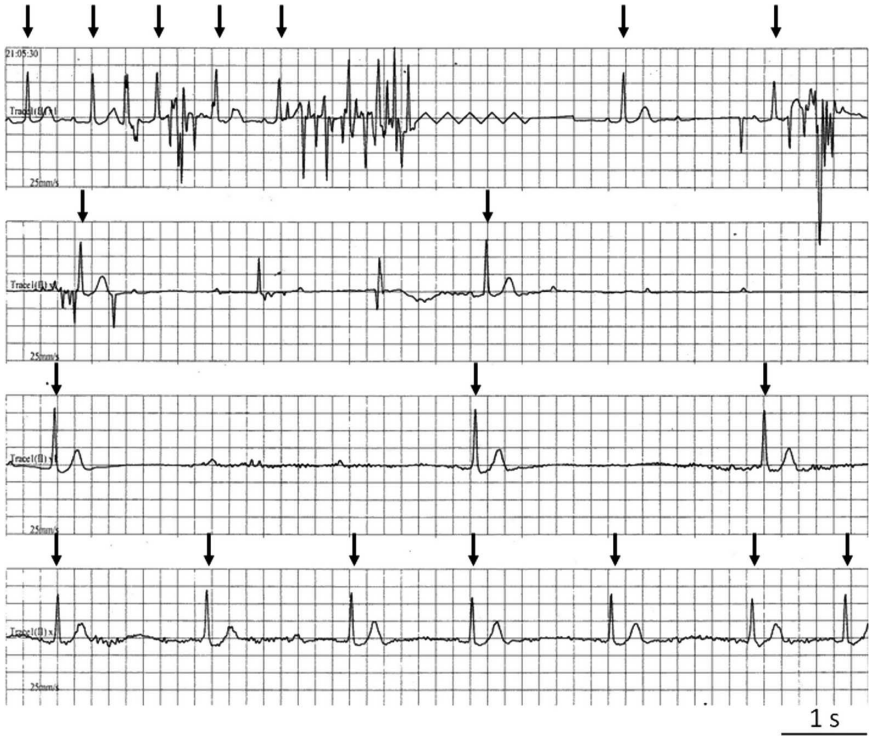

FIGURE 2 ECG during syncope triggered by medical explanation. ECG shows atrioventricular block and sinus arrest. Arrow indicates ventricular contraction. The recording is partially affected by artifacts, which does not compromise the main information. ECG = electrocardiography

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