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Case Report

Ventricular Fibrillation First Presented by Convulsion and Sudden Cardiac Death in Acute Coronary Syndrome: A Case Report

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Abstract

Background: It is important in medical practice to be able to recognize and manage ventricular tachyarrhythmia, a significant cause of morbidity and mortality in acute coronary syndrome, and highly lethal arrhythmia.

Case Description: A case of ventricular fibrillation discovered by a seizure attack in a middle -aged man presented with chest pain with no past cardiac or neurological history. 1st ECG appeared normal then got in a seizure attack and ECG changed to ventricular tachycardia and fibrillation on the monitor in a short time.

Conclusions: Patients with acute coronary syndrome who get in ventricular tachycardia or fibrillation episodes could be first represented by a seizure that may be considered a hazardous sign in neurologically-free patients. It is important to include ventricular tachycardia as a differential diagnosis of seizure in a patient with cardiovascular risks. The risk of cardiac death increased in patients with VT presented by a seizure compared to those without seizure or abnormal brain manifestations.

Keywords: Acute Coronary Syndrome (ACS); Ventricular Tachycardia (VT)

Introduction

In the case of acute coronary syndrome (ACS), including unstable angina, non-ST elevation myocardial infarction (NSTEMI), and ST-elevation myocardial infarction (STEMI), ventricular tachycardia (VT) is a leading cause of sudden cardiac death [1,3]. In cases of acute cardiac disease, the heart affects brain function [10]. VT following myocardial injury [13] results in hypoperfusion and cerebral hypoxia that cause loss of consciousness and neurological manifestations such as syncope and seizures [6,8]. Seizure and abnormal autonomic function associated with VT have demonstrated increases in mortality and morbidity risk.

Case

Patient information

A 38-year-old man presented to the emergency room complaining of cardiac on and off chest pain of a 5h duration, the patient was known to be asthmatic not on any medication with no previous neurological or cardiac history.

Physical examination and investigation

By examination blood pressure 110/70, pulse 65, chest free, and no lower limp edema, ECG was done which appeared to be normal. He was loaded with 300 mg clopidogrel and 324 mg aspirin.3 tabs of sublingual nitrates were given prehospital to relieve the pain.

Within 15 min after the presentation patient started to lose consciousness, Stiffening body, Loss of bladder control, and Facial flushing for the first time that lasted for 30 sec then arrested within a minute from the symptoms. CPR started immediately and cardiac monitoring indicated ventricular fibrillation. Unfortunately, the patient didn't return after 3 electrical cardioversion, amiodarone, and CPR for 20 min.

Discussion ventricular tachycardia is considered one complication of active coronary syndrome and a major cause of sudden cardiac death [1-3], till now a diagnosis of ventricular tachycardia in the emergency room depends on ECG and cardiac monitoring [4]. During ER work and clinical practice [5], signs resemble seizure attack [6,7], and thirst sensation may be a red flag. Considering this, we expect the patient to get in VT attack especially patients with cardiac symptoms and without neurological history, and immediate actions of monitoring to establish and treatment of VT are considered.

Heart and brain interaction

Physiologically the heart and brain are interacting under the control of the sympathetic and parasympathetic autonomic nervous system [10]. Acute damage to one of both organs leads to the malfunction of the other organ [11]. When transient loss of consciousness (T-LOC) is misinterpreted as syncope or seizure, which is very similar in presentation, caused by arrhythmias cardiological assessment is necessary [6,7]. Arrhythmias are considered one of the common complications in epilepsy patients and the cause of death, for that, cardiac monitoring is necessary for severe acute brain diseases [7,11,12].

Conclusion

The case is opening a way to consider seizures as a prodroma for some ventricular tachycardia or fibrillation episodes as the first alarming sign depending on the tight heart and brain interaction that can provoke one another, which will give us a clinical experience for effective preventative and management strategies of VT, a life-threatening arrhythmia, as a cause of seizures away from concentrating on treating seizure first, particularly in patients with no history of convulsion attacks or neurological symptoms. The earlier VT management the higher the prognostic survival rate.

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