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Artifact mimicking non-sustained polymorphic ventricular tachycardia in a patient with recent myocardial infarction

Case Report

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Abstract: A 78-year-old woman with a history of recent myocardial infarction was admitted to the coronary care unit because of dyspnea. The baseline ECG revealed sinus rhythm of 90 beats/min. Two hours after her admission, her body temperature raised to 38.8 degrees Celcius accompanied by shaking chills. Wide complex tachycardia runs consistent with polymorphic ventricular tachycardia synchronous with shaking chills were noticed on the monitor. Closer observation of the ECG revealed the presence of normal QRS complexes at the cycle length of baseline rhythm. It was presumed that artifact due to shaking chills was responsible for the ECG abnormalities.

Keywords: *Ventricular tachycardia • Artifact*

1. Introduction

Patients who are misdiagnosed with ventricular tachycardia because of electrocardiographic artifact may be subjected to unnecessary procedures [1,2]. We report a case of electrocardiographic artifact mimicking polymorphic ventricular tachycardia.

2. Case Report

A 78-year-old woman with a history of recent myocardial infarction was admitted to the coronary care unit because of dyspnea. Upon admission she was moderately distressed and inspiratory crackles were heard over the lower third of her right lung. The baseline ECG revealed sinus rhythm of 90 beats/min. Aspirin, lisinopril, furosemide, low molecular weight heparin and simvastatin were started with a diagnosis of heart failure and coronary artery disease. Her body temperature raised to 38.8 degrees Celcius two hours after her admission and wide complex tachycardia runs consistent with polymorphic ventricular tachycardia, synchronous with shaking chills were noticed on the monitor (Figure 1). However, closer observation of the ECG revealed the presence of normal QRS complexes at the cycle length of baseline rhythm. It was presumed that artifact due to shaking chills was responsible for the ECG abnormalities, and paracetamol and work-up for fever were started. Repeated measurements revealed increased white blood cell count while serum electrolytes, creatinine, B-type natriuretic peptide (BNP) and cardiac troponin T (cTnT) remained in normal limits. Chest X-ray showed right basal infiltration with ipsilateral pleural effusion. The ECG abnormalities did not recur after the control of fever. The patient recieved antibiotics with a final diagnosis of community-acquired pneumonia.

3. Discussion

Our patient was admitted to the coronary care unit with an initial diagnosis of heart failure which is the major cause of acute dyspnea in patients with recent myocardial infarction. Patients with documented coronary artery disease and heart failure are especially prone to ventricular arrhythmia [3]. Closer observation

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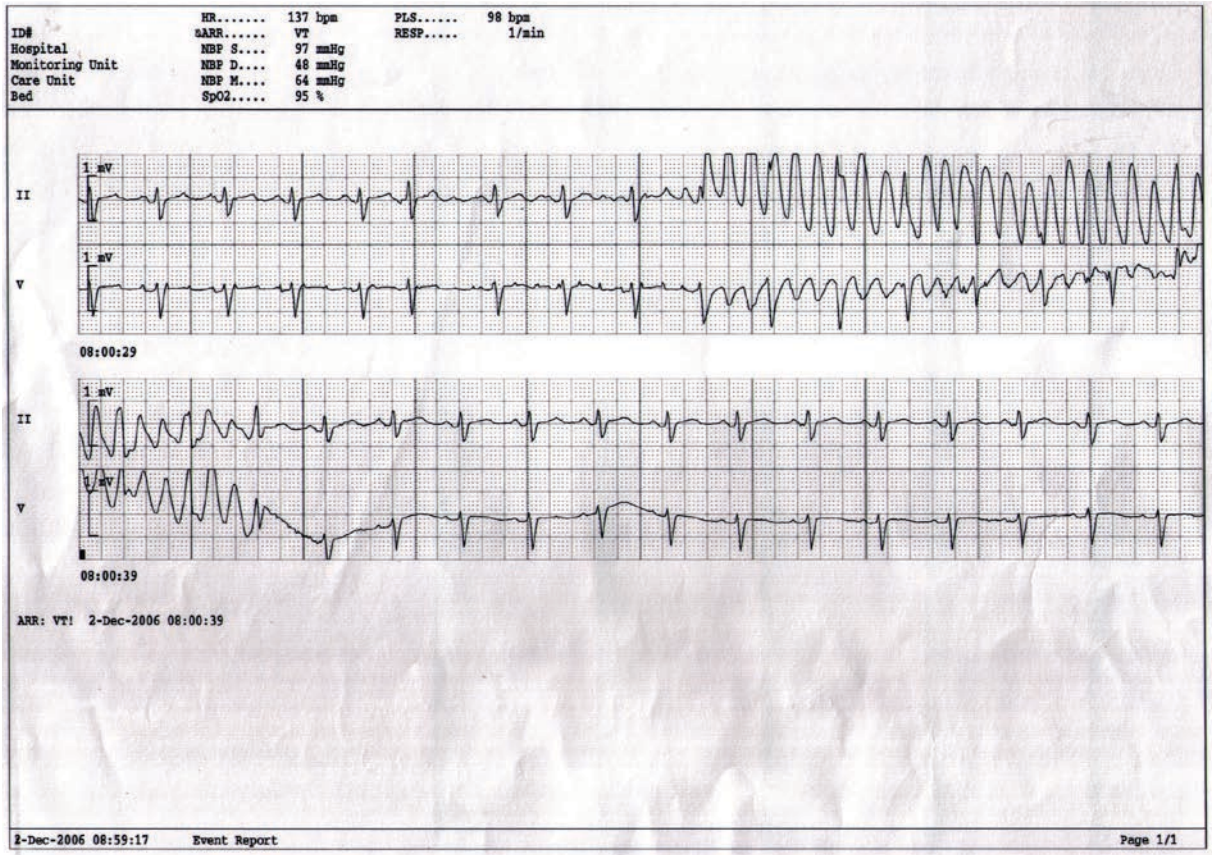
Figure 1. Wide complex tachycardia runs consistent with polymorphic ventricular tachycardia.



of the ECG and lack of supportive clinical findings during the incident event helped us avoid unnecessary interventions including defibrillation. Finally, normal BNP levels at repeated measurements were useful in ruling out the diagnosis of heart failure [4].

It was demonstrated that even board-certified cardiologists may mistake artifact for ventricular tachycardia leading to unnecessary interventions as drastic as the implantation of an implantable cardioverter defibrillator [2]. To avoid this problem, a clinical correlation should always be sought between the electrocardiographic appearance and the patient's symptoms [5]. The possibility of artifact as a cause of wide complex tachycardia should be considered in hemodynamically stable patients.

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