

Atypical ECG presentation in a patient with tako-tsubo cardiomyopathy

Nietypowy obraz EKG u chorego z zespołem tako-tsubo

Rusudan Agladze, Peter Siostrzonek

Interne II Kardiologie, Krankenhaus der Barmherzigen Schwestern Linz, Austria

INTRODUCTION

Tako-tsubo cardiomyopathy (TTC, also known as apical ballooning syndrome) is a transient cardiomyopathy. The syndrome is characterised by transient balloon-like wall-motion abnormalities involving the left ventricular mid-ventricle and apex in the absence of significant obstructive coronary artery disease. The most frequent finding on admission ECG is mild ST-segment elevation, usually present in precordial leads [1]. Owing to its clinical and ECG characteristics, TTC is frequently misdiagnosed as an acute coronary syndrome (ACS).

The aim of this study was to report a case of TTC with atypical ECG presentation.

CASE REPORT

An 84 year-old Caucasian female with hypertension was referred to hospital because of moderate chest pain. She had a history of extreme psychological distress. ECG revealed markedly prominent ST-segment elevations in leads I, II, aVL, and V2–V6, and ST-segment depressions in leads III and aVR (Fig. 1). Troponin I level peaked at 0.35 ng/mL. Emergency cardiac catheteri-

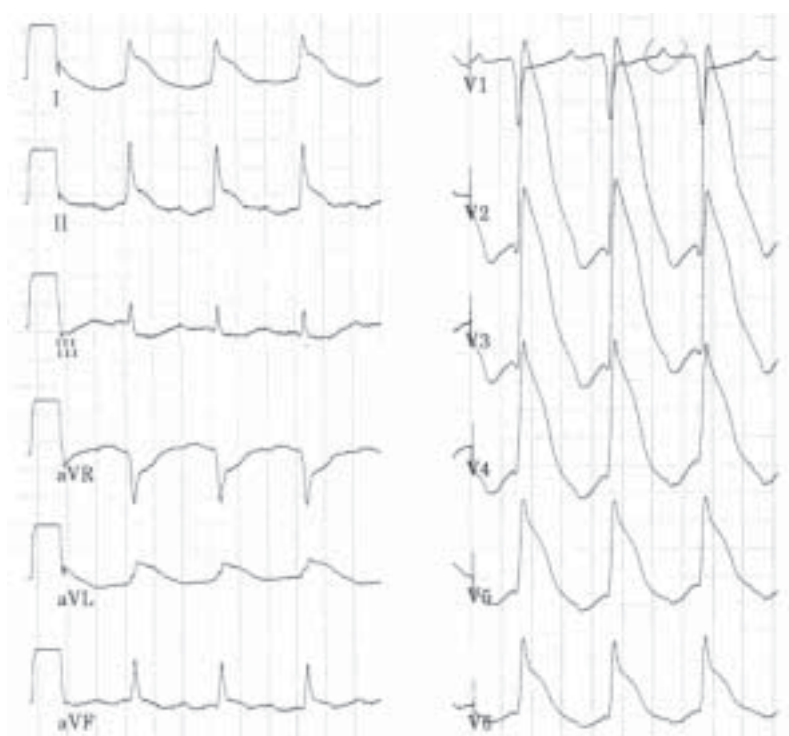


Figure 1. ECG on admission. ECG exhibited prominent ST-elevation in leads I, II, aVL, V2–V6

Address for correspondence:

Rusudan Agladze, Interne II Kardiologie, Krankenhaus der Barmherzigen Schwestern Linz, Seilerstätte 4, A-4010 Linz, Austria, tel: +995 93 788118, fax: +995 32 186112, e-mail: ruso.agladze@yahoo.com

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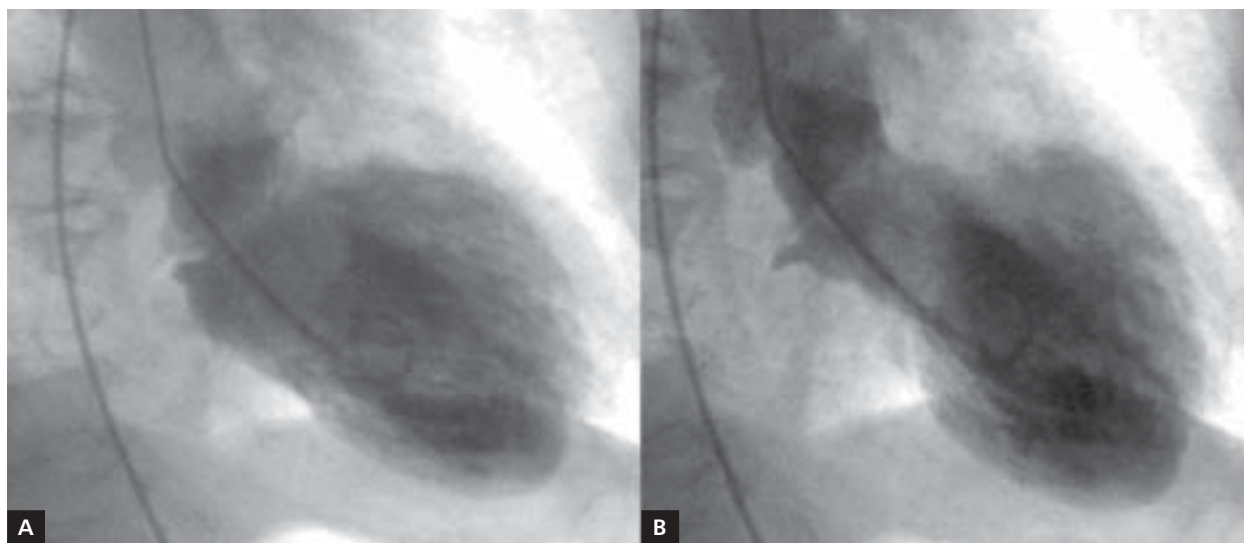


Figure 2. Characteristic picture of tako-tsubo cardiomyopathy with akinesia of mid and apical segments and normal basal contraction; **A.** Diastole; **B.** Systole

sation revealed nonobstructive coronary artery disease and ventriculogram revealed severely decreased left ventricular ejection fraction (LVEF), with hyperkinetic basal segments and akinesia of all mid and apical segments, consistent with TTC (Fig. 2). Norepinephrine and dopamine levels obtained eight hours after the onset of chest pain were within the normal ranges. ST-segment elevation persisted up to 72 hours. In the subacute period, the patient developed deep symmetric negative T-waves in leads V2–V5 and marked QT prolongation (QTc 665 ms). Treatment was conservative, with aspirin, simvastatin, carvedilol, ACE inhibitor and anticoagulation. On follow-up two weeks later, she was asymptomatic, and repeat echocardiogram showed a LVEF of 60% with resolution of regional wall motion abnormalities. ECG returned to baseline with normal discordant T waves in precordial leads and a QTc of 440 ms.

DISCUSSION

Tako-tsubo cardiomyopathy accounts for 1–2% of all patients presenting with symptoms suggesting ACS, and is encountered predominantly in elderly women [1]. The criteria proposed by the Mayo Clinic group are widely used for the diagnosis of TTC [2]. Clinical features and ECG findings are misleadingly consistent with ACS. About a third of patients with TTC have ST-segment elevation, and another third have

T wave inversions. ECG is normal or shows minor non-specific changes in the remaining third [3]. ST-elevation is usually mild and less prominent [1]. According to one study, the maximum ST-segment elevation at the basis of the T wave is less than 1.5 mm [4].

It is important in clinical practice to differentiate TTC from acute myocardial infarction using the ECG. To the best of our knowledge, this is the first case demonstrating markedly prominent ST-elevation in a patient with TTC, and we alert clinicians to the possibility of unusual ECG presentation.

Conflict of interest: none declared

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