

Giant drug-induced QT prolongation > 800 ms with alternans of terminal portion of T wave and J wave in a normothermic patient

Ekstremalne wydłużenie odstępu QT z naprzemiennością końcowej fazy załamka T oraz z załamkiem J u chorej z normotermią

Piotr Kukla¹, Adrian Baranchuk², Marek Jastrzębski³, Leszek Bryniarski³, Rafał Baranowski⁴

¹Department of Internal Disease and Cardiology, Specialistic Hospital, Gorlice, Poland

²Division of Cardiology, Kingston General Hospital, Queen's University, Kingston, Canada

³1st Department of Cardiology, Interventional Electrophysiology and Hypertension, University Hospital, Krakow, Poland

⁴Department of Heart Rhythm Disorders, Institute of Cardiology, Warsaw, Poland

Abstract

We describe a case of an 85-year-old woman admitted to hospital because of syncope with palpitations. The patient had mistakenly taken sotalol 120 mg/d together with carvedilol 6.25 mg/d. On hospital admission, ECG showed sinus bradycardia 52 bpm with marked QT prolongation: QTc presented variability from beat to beat (840 ms – 640 ms – 820 ms – 640 ms, respectively) with associated macro-alternans of T wave. T wave alternans was observed within the ascending portion of negative T wave. Beside it a J wave was seen.

Key words: acquired LQTS, macro T wave alternans, J wave

Kardiologia Polska 2013; 71, 12: 1306–1307

Drug-induced long QT syndrome (LQTS) is the most common form of acquired LQTS. The ECG of patients with LQTS can reveal T wave alternans. In recent years the study of arrhythmology has drawn attention to a J wave known

as the Osborn wave. The Osborn wave was first described in 1953, and is a hallmark of hypothermia. Nowadays the J wave is considered as an arrhythmogenic marker in patients with ventricular fibrillation and a structurally normal heart.

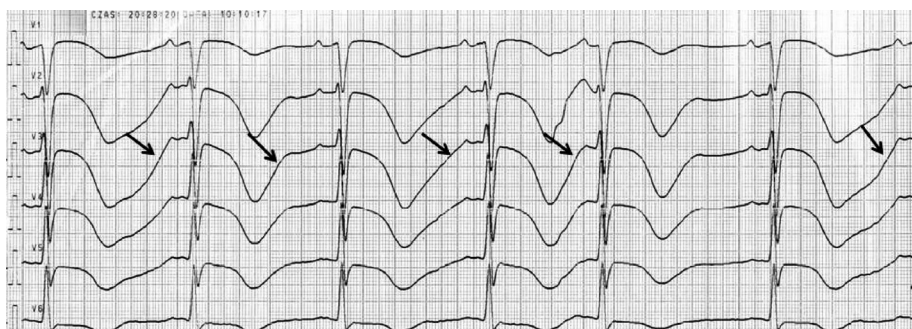


Figure 1. ECG presents sinus bradycardia 62 bpm with marked QT prolongation: QT 840 ms, QTc 858 ms, alternating beat to beat QT interval changes: 840 ms – 640 ms – 820 ms – 640 ms and macro T wave alternans concerning the morphology of the ascending portion of negative T wave (arrows)

Address for correspondence:

Piotr Kukla, MD, PhD, Department of Internal Disease and Cardiology, Specialistic Hospital, ul. Węgierska 21, 38–300 Gorlice, Poland, tel: +48 18 35 53 415, e-mail: kukla_piotr@poczta.onet.pl

Copyright © Polskie Towarzystwo Kardiologiczne



Figure 2. Premature atrial beat with 'R on T phenomenon'. Visible J wave (arrows) in the first and second evolutions of the first atrial triplet

An 85-year-old female patient was admitted to the hospital with a history of palpitation and syncope. At home, she had taken sotalol 120 mg/d and, by mistake, carvedilol 6.25 mg/d. She took no other medications that could prolong QT interval. An initial ECG showed sinus bradycardia 52 bpm with marked QT prolongation: QT 840 ms, QTc 858 ms, alternating beat to beat QT interval changes: 840 ms – 640 ms – 820 ms – 640 ms and macro T wave alternans concerning mainly the morphology of the ascending portion of negative T wave (Fig. 1). There was a premature atrial beat with 'R on

T phenomenon'. There was a visible J wave in the first and second evolutions of the first atrial triplet (Fig. 2). Episodes of nonsustained torsade de pointes ventricular tachycardia were observed. Sotalol was withdrawn. A DDDR pacemaker was implanted and beta-blocker therapy was started. To the best of our knowledge, ours is the first report of a normothermic patient with acquired LQTS having another arrhythmic marker — J wave. Until now this ECG constellation (i.e. long QT and J wave) has only been observed in hypothermic patients.

Conflict of interest: none declared