

Long-lasting asystole provoked by ablation in the right ventricular outflow tract

Przedłużona asystolia w trakcie ablacji w drodze odpływu prawej komory

Andrzej Osiecki, Sebastian Przychodzeń, Waclaw Kochman, Dariusz Michałkiewicz

Clinical Department of Cardiology, Bielanski Hospital, Institute of Cardiology, Warsaw, Poland

Abstract

In this case report, the authors describe a 39-years-old female with persistent numerous monomorphic ventricular extrasystole and unusual long asystole during ablation in the right ventricular outflow tract which was probably provoked by pain.

Key words: asystole, vasovagal reaction, ablation

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Syncopes among the young population have in 60–70% reflexive background [1]. Syncopes associated with this type of mechanism do not have prognostic value [2] but may have a deteriorating effect on the quality of life. Vasovagal syncope with a dominant cardiodepressive response may cause a malignant loss of consciousness – without prodromal signs and symptoms what may lead to serious injuries. Not rarely are reflexive bradycardia or temporary asystole seen in the EP-lab during puncture of main veins and ablation.

A 39-years-old female was admitted to the department for ablation due to persistent numerous monomorphic ventricular extrasystole (Figure 1).

The aforementioned arrhythmia was refractory to antiarrhythmic therapy (metoprolol 50 mg/day) and was recorded in a repeated ambulatory an electrocardiogram (ECG) monitoring in the range of 15,000–25,000/day. On admission to the hospital the patient was in a good overall constitution, not presenting any signs or symptoms of arrhythmia, RR 135/90 mm Hg, heart rate (HR) 60 bpm. ECG on admission: regular sinus rhythm 67/min, normal

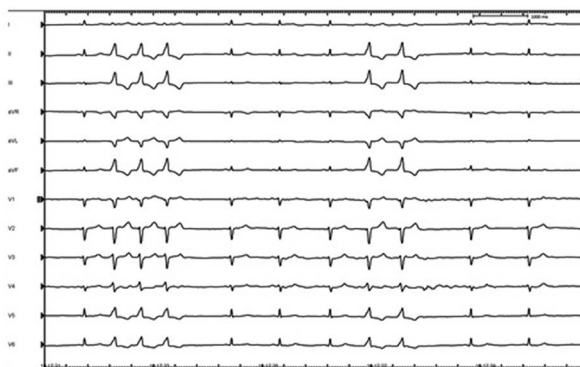


Figure 1. Electrocardiogram with ventricular extrasystole

axis, PQ interval 126 ms, QRS width 92 ms, no signs of ventricular hypertrophy, no signs of ischaemia, QTc interval within the normal range (Figure 2).

The patient underwent the right ventricular outflow tract (RVOT) ablation for ventricular arrhythmias using the CARTO system with an energy of 25 W, via the right femoral vein.

Address for correspondence: Andrzej Osiecki MD, Kliniczny Oddział Kardiologii, Szpital Bielański, Instytut Kardiologii, ul. Ceglowska 80, 01–809 Warszawa, Poland, e-mail: mcosiek@gmail.com

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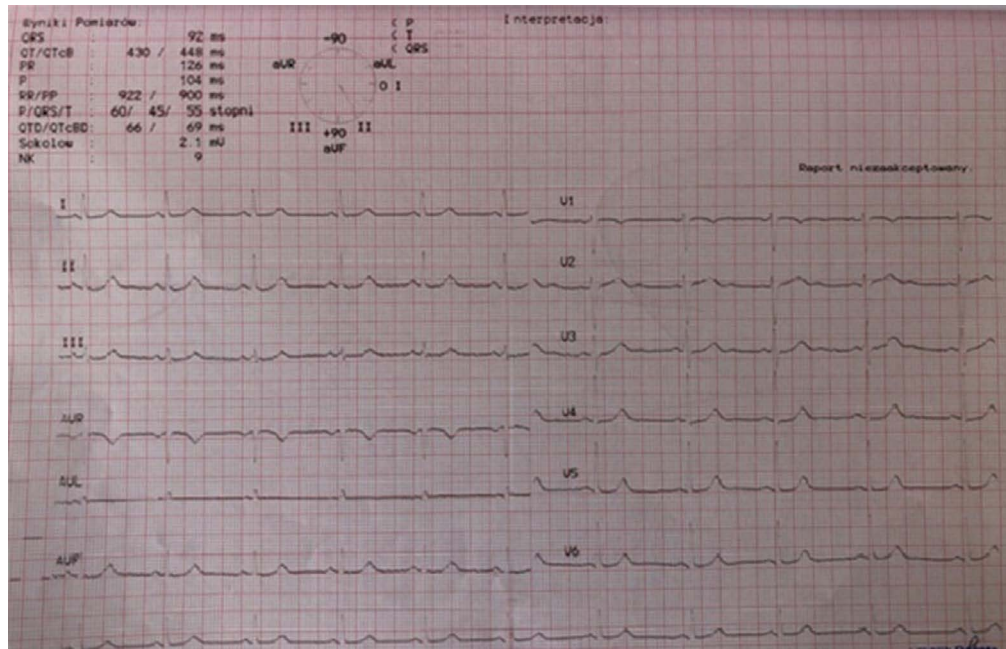


Figure 2. Baseline electrocardiogram on admission to the hospital

As premedication 2 mg intravenous midazolam was administered. During an energy application, the patient reported the appearance of strong chest pain. Subsequently on the screen appeared a set of premature ventricular beats, followed by sinus bradycardia and long-lasting asystole (Figure 3) which persisted for 6 minutes and needed artificial ventricular pacing. According to the authors' knowledge, ventricular arrhythmia has not reoccured. The most probable cause of this phenomenon was a response to pain.

After the administration of atropine sinus tachycardia 120 bpm was restored with a subsequent gradual heart rate slowing to 80 bpm. After an extended medical reconnaissance, the patient confessed that in the past she had experienced 2 episodes of a complete loss of consciousness, lasting several minutes accompanied by shivers in response to pain, one of them was complicated with head trauma. The patient was offered cardio-neuro ablation, but she declined this procedure [3].

In the EP-lab it is not rarely observed that reflexive bradycardia occurs in response to the pain during the puncture of main vessels or during ablation, especially in the cavotricuspid isthmus. More frequently reflexive bradycardia or asystole are seen whilst ablation is performed in the region of the left atrium. Surprisingly, it was the first time in over 20-years of the article authors' experience when asystole was associated with the right ventricular outflow tract ablation. Severe pain might be a causative factor for the vasovagal reaction [4], however, asystole does not usually persist so long as it was seen in the present case.

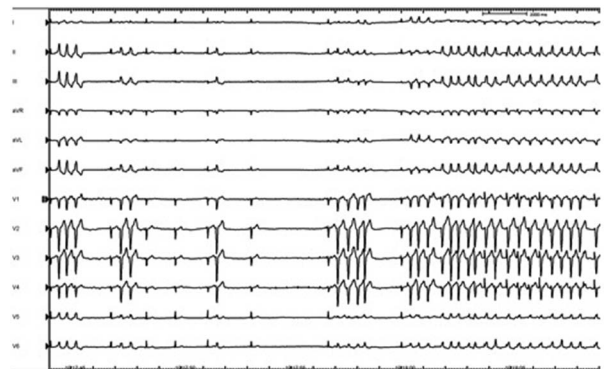


Figure 3. Electrocardiogram from the EP-lab with asystole and artificial ventricular pacing, writing speed 10 mm/s

Conflict of interests

The authors declare that there is no conflict of interest regarding the publication of this article.

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Ethics

Ethical approval is not required at the authors' institution to publish an anonymous case report.

Streszczenie

W niniejszym artykule autorzy przedstawiają przypadek kliniczny 39-letniej chorej z liczną monomorficzną ekstrasystolią komorową i niezwykle długą asystolią w czasie ablacji w drodze odpływu prawej komory, w reakcji odruchowej na ból.

Słowa kluczowe: asystolia, reakcja wazowagalna, ablacja

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