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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

Ventricular tachycardia successfully treated with wearable cardioverter-defibrillator

Częstoskurcz komorowy skutecznie przerwany przez zewnętrzny kardiowerter-defibrylator noszony przez pacjenta

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A 68-year-old woman with diabetes, paroxysmal atrial fibrillation (PAF), and chronic kidney disease stage 3 was admitted to hospital because of acute lower limb ischaemia, requiring emergency surgical embolectomy of common iliac arteries with a Fogarty balloon catheter. Unfortunately, the procedure was complicated by ST-elevated myocardial infarction of the left ventricle posterolateral wall, subsequently treated with marginal branch angioplasty with drug-eluting stent implantation. In addition, the patient's general condition deteriorated due to cardiogenic pulmonary oedema, which required intermittent mechanical ventilation with positive end-expiratory pressure support. Post-procedural echocardiography revealed decreased left ventricular ejection fraction (LVEF 35%) and severe mitral regurgitation. For the prevention of sudden cardiac death teh patient was equipped with wearable cardioverter defibrillator (WCD; LifeVest® by Zoll) as a bridge therapy until the final decision regarding the need for an implantable cardioverter-defibrillator (ICD). Ventricular tachycardia (VT) and ventricular fibrillation zones were set as presented in Figure 1. The patient was educated and trained in WCD and discharged from the hospital. The patient had been wearing a LifeVest® for 16 days (23 h and 26 min per day on average) when, during a PAF with average heart rate of 175 bpm, the WCD recognised VT and alarmed the patient (Fig. 1). She stopped therapy by simultaneously pressing the abort bottoms (Fig. 1, blue arrow). About 30 s later VT (about 195 bpm) was initiated, probably as a result of the patient's decompensation because of fast heart rate (Fig. 1, green arrow). She aborted therapy five times until a shock (energy of 150 J) was delivered after 92 s of VT (Fig. 1, red arrow). The therapy was successful, but about 25 s later another VT was initiated. Then she aborted therapy three times, but because of severe symptoms allowed another shock within about 50 s. The therapy was successful. WCD is recommended as a bridge therapy for patients with high risk of sudden cardiac death due to potentially reversible causes and waiting for qualification to ICD. According to registries less than 2% of patients equipped with a WCD receive therapy. LifeVest® allows patients to abort therapy until losing consciousness or other severe symptoms. Patients should be trained not to take the WCD off after the shock because arrhythmia may recur. LifeVest® may deliver up to twelve therapies when its battery is fully charged.

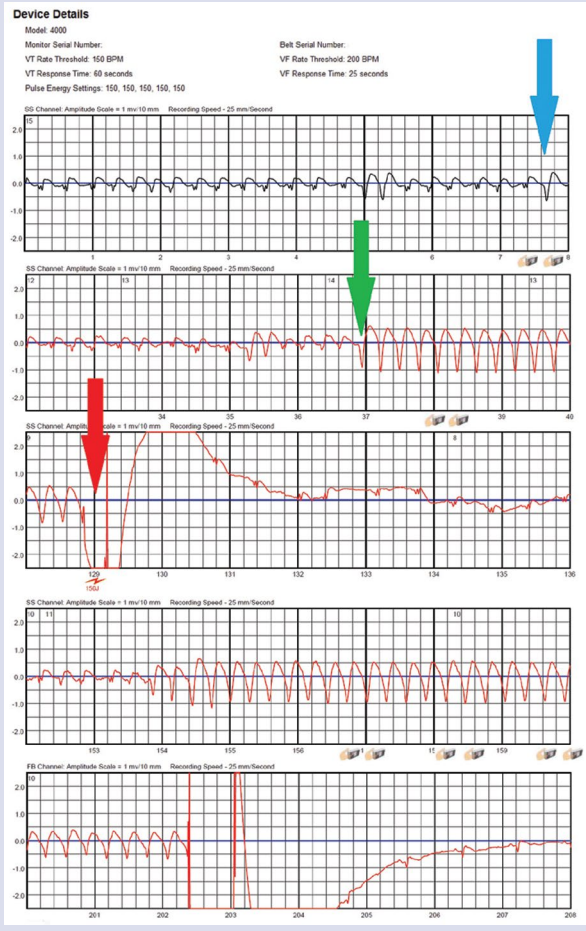

Figure 1. Electrocardiogram recording of channel 'SS' in wearable cardioverter defibrillator during the shock episode. The shock sequence was canceled by the patient for the first time 7 s after ventricular tachycardia (VT) detection (blue arrow). After 30 s later VT was initiated (green arrow). Patient aborted therapy five times until a shock (energy of 150 J) was delivered after 92 s of VT (red arrow)

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