Abstract: **P653**

**Sustained ventricular fibrillation in an alert patient with implanted left ventricular assist device**

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Normally sustained ventricular fibrillation leads to death very quickly, but it has been shown to be well tolerated in patients with external circulatory support.

A 54-year-old man was delivered to the regional Intensive Cardiac Care Unit. On admission, he was at cardiogenic shock with undetectable blood pressure, pulseless femoral arteries, SpO₂ 70% on oxygen therapy, verbally responsive.

He had for less than an hour severe dyspnoea, abdominal pain and a few noticeable interventions of the implanted Cardiac Resynchronisation Therapy -Defibrillator device (CRT-D)

The patient was supported by a left ventricular assist device for two years before admission because of chronic heart failure with ejection fraction approximately 18% on the background of dilated cardiomyopathy.

First ECG revealed ventricular fibrillation, we managed noradrenaline infusion and controlled the CRT-D - adequate shocks due to ventricular fibrillation episode. The diagnosis was confirmed by echocardiographic studies.

Initial attempts at rhythm conversion with double shocks using CRT-D were unsuccessful, also amiodarone and lidocaine were administered without effect.

The patient was finally external defibrillated to normal sinus rhythm after a 200-J biphasic shock.

After defibrillation, the patient underwent a severe bradypnea event with desaturation and loss of consciousness, the patient required respiratory support for more than an hour.

In additional control of CRT-D, there was an episode of sustained long-lasting ventricular fibrillation (approximately 90 minutes) with six unsuccessful defibrillations. Also, a right-ventricle lead integrity and noise warnings were shown, which most likely induced the episode of VF due to first inappropriate shock (oversensing)

The patient was transferred in good condition to the reference clinical center, where the failure lead was replaced.

It is worth noting that despite a long-lasting episode of ventricular fibrillation, it was possible to effectively restore the sinus rhythm using external defibrillation because continuous-flow LVAD ensures the preservation of minimal perfusion of vital organs in the case of potentially lethal arrhythmia.

Damage to defibrillation leads can eventually guide to fatal complications, so they should be checked as precisely as possible during regular inspections.