Abstract: **P530**

**High incidence of diaphragmatic myopotential oversensing by specific ICDs - A prospective study**

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**Background:**
Diaphragmatic myopotential oversensing (dMPO) by ICDs is thought to be a rare condition, mainly seen in patients with integrated bipolar sensing. We observed several cases of dMPO in patients with Sorin/LivaNova (now MicroPort) ICDs and true bipolar sensing.

**Purpose:**
We sought to systematically assess the incidence of dMPO in patients with Sorin/LivaNova ICDs.

**Methods:**
Between January and November 2017 a predefined number of 100 consecutive patients with Sorin/LivaNova ICDs were prospectively included in the device outpatient clinic of our center. Devices were checked for recorded episodes of spontaneous dMPO. In addition, at a semi-inclined position (45°), coughing and Valsalva from maximal inspiration were performed with different ICD sensitivity settings.

**Results:**
Of 100 included patients (86% males, 63±12 years, LVEF 37±13%) 12% had at least one episode of spontaneous or provokable dMPO; 9 of 89 patients (10%) with true bipolar, and 3 of 11 patients (27%) with integrated bipolar sensing configuration.

Spontaneous dMPO was recorded by the ICD in 8 patients. In 3 of them dMPO could be reproduced by provocation maneuvers. In 4 patients dMPO could be provoked without any recording of spontaneous episodes.

Spontaneous dMPO was seen in 6 of 58 patients (10%) with sensitivity programmed to 0.4mV and in 2 of 43 patients (5%) with sensitivity programmed to =0.6mV.

In 1 patient with a CRT-D and no intrinsic AV-conduction ventricular pacing was inhibited for 2 seconds during a spontaneous episode of dMPO. No antitachycardia therapy was triggered by dMPO in any patient.

**Conclusion:**
dMPO is frequent in patients with Sorin/LivaNova ICDs, both with integrated bipolar, and true bipolar sensing configuration. With sensitivity programmed to 0.4mV, spontaneous dMPO can be observed in up to 10% of patients. If feasible, sensitivity of Sorin/LivaNova ICDs should be programmed to =0.6mV. A high index of suspicion is warranted and dMPO in Sorin/LivaNova ICDs should not be misinterpreted as lead failure to avoid unnecessary lead replacement.