Occasional dropped ventricular pacing in a patient with no underlying rhythm and an Advisa® dual-chamber pacemaker

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An 86-year-old white male brought to the emergency room for weakness and lethargy was found to have third degree AV block with a left bundle branch escape rhythm (Figure 1A). An Advisa MRI® (Medtronic) dual-chamber pacemaker was implanted. Telemetry tracings revealed asymptomatic episodes of isolated P waves without pacing spikes or paced QRS complexes (Figure 1B). Decreasing the sensitivity to 11.3 mV in the RV channel eliminated this phenomenon.

Medtronic engineers provided the following details:

- An occasional ‘dropped VP’ is specific to DDDR and DDD modes during atrial tracking (AS–VP) and may occur intermittently on an hour and 30 s schedule.
- A false ventricular sense may occur due to residual electrical disturbance on the ventricular sense amplifier and may be created by turning on/off the diagnostic EGM amplifiers during reference EGM collection. The scheduled reference EGM collection is synchronized to sensing and pacing events so that the device’s sense amplifiers are blanked. However, there is no ventricular blanking following an AS event, which makes this phenomenon possible. The collection of reference EGM is non-programmable and is always active in the device.
- Decreasing the ventricular sensitivity from 0.9 to 1.2 mV or higher may eliminate this phenomenon. Medtronic reliability engineers estimated the worldwide rate of occurrence at <0.05% worldwide, but this may be underreported.

The full-length version of this report can be viewed at: http://www.escardio.org/communities/EHRA/publications/ep-case-reports/Documents/occasional-dropped-ventricular.pdf.