

Atypical presentation of false asystole detection in implantable loop recorder

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DESCRIPTION

A 57-year-old male patient was admitted for evaluation of pacemaker explantation 7 years after implantation because of paroxysmal complete atrioventricular (AV) block due to presumed Lyme carditis. In view of a stable ventricular pacing rate of <1%, complete removal of the system without reimplantation was considered. An electrophysiological study revealed normal AV conduction and normal AVBCL (atrioventricular block cycle length). Therefore, pacemaker removal and lead extraction were scheduled, the pacemaker was set to a VVI 30/min mode and a newer generation implantable loop recorder (ILR, Medtronic Reveal LINQ, Medtronic, Dublin, Ireland) was implanted for remote monitoring of the patient's heart rhythm. At a regular outpatient visit 2 weeks later, the ILR indicated an episode of asystole over 7.8 s (figure 1) during the daytime 1 day after ILR implantation. The patient did not report any symptoms at that time. Pacemaker interrogation showed appropriate function. The episode was hence considered erroneous asystole detection, as described in other case reports.¹⁻³ There are several features that point to this conclusion: (1) the blunt deflection at the end of asystole detection is indicative of a non-physiological signal; (2) in a

patient with a functioning pacemaker programmed at VVI 30/min, an interruption of intrinsic rhythm of >2000 ms would result in ventricular stimulation, and spikes (+/- a local depolarisation artefact) should be visible during 'asystole'; (3) the sinus rate interval (880 ms) does not change significantly after 'asystole', which would be expected in case of true asystole and finally, (4) a complete lack of symptoms was reported by the patient during this episode.

Learning points

- ▶ False asystole detection may occasionally be seen shortly after implantable loop recorder implantation and may have important clinical implications if not diagnosed as such.
- ▶ It is suggested due to transitory signal loss because of imperfect device contact with the subcutaneous tissue caused by air entrapment, haematoma or a loose pocket.
- ▶ Features indicative of false asystole detection are a blunt deflection at the end of asystole detection (non-physiological signal), lack of symptoms and the sinus rate interval would be expected to change significantly after true asystole.



Figure 1 Implantable loop recorder ECG tracing with false asystole detection.

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