response using a quadripolar LV lead. *Pacing Clin Electrophysiol* 2013;**36**: 963-9.

- Rinaldi CA, Burri H, Thibault B, Curnis A, Rao A, Gras D et al. A review of multisite pacing to achieve cardiac resynchronization therapy. *Europace* 2015;17:7–17.
- 22. Biffi M, Foerster L, Eastman W, Eggen M, Grenz NA, Sommer J et al. Effect of bipolar electrode spacing on phrenic nerve stimulation and left ventricular

EP CASE EXPRESS

pacing thresholds an acute canine study. *Circ Arrhythmia Electrophysiol* 2012;**5**: 815–20.

 Crossley GH, Biffi M, Johnson B, Lin A, Gras D, Hussin A et al. Performance of a novel left ventricular lead with short bipolar spacing for cardiac resynchronization therapy: primary results of the Attain Performa Quadripolar Left Ventricular Lead Study. *Heart Rhythm* 2015;**12**:751–8.

> doi:10.1093/europace/euw203 Online publish-ahead-of-print 17 October 2016

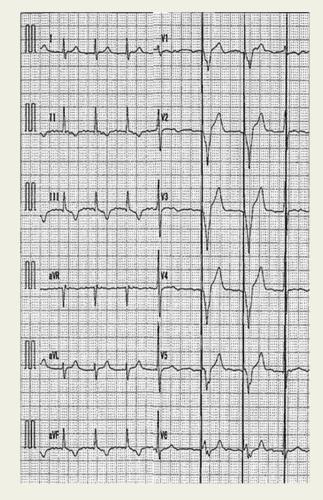
Abrupt disruption of remote monitoring transmission as an indicator of safe backup mode

Yoichi Ajiro*, Fumiaki Mori, and Kazunori Iwade

Department of Cardiology, National Hospital Organization Yokohama Medical Center, 3-60-2 Harajuku Totsuka-ku Yokohama-shi, Kanagawa 245-8575, Japan * Corresponding author. Tel: +81 45 8512621; fax: +81 45 8518316. *E-mail address:* aziro-youichi@yokohamamc.jp

A 78-year-old man with sick sinus syndrome and accompanying persistent atrial tachyarrhythmia had undergone dual-chamber pacemaker (Evia DR-TTM Biotronik Inc., Germany) implantation with bipolar screw-in atrial and ventricular leads (Siello |T53[™] and Siello S60TM, Biotronik Inc.). Measured pacemaker and lead function values were within acceptable limits. Remote monitoring (Home MonitoringTM Biotronik Inc.) was used in addition to regular check-up visits for his out-of-hospital management. Data transmission via remote monitoring was favourable, with all parameters showing normal results. Twenty-two months after implantation, data transmission became disrupted. A 12-lead electrocardiography at an emergency pacemaker clinic indicated unipolar ventricular pacing (Figure). On interrogation, the pacemaker was found to be in the safe backup mode; the remote monitoring setting had been switched from ON to OFF, and pacemaker memories had been erased completely. Thorough inspection of the patient's surroundings did not identify the cause of the in-circuit excess current that resulted in the pacemaker setting changing to the safe backup mode. Pacemaker settings were reprogrammed to the former settings. The patient's clinical course was stable for 12 months thereafter. To our knowledge, this is the first case of abrupt disruption of remote monitoring transmission indicating a change to the safe backup mode.

The full-length version of this report can be viewed at: http://www. escardio.org/Guidelines-&-Education/E-learning/Clinical-cases/ Electrophysiology/EP-Case-Reports.



© The Author 2016. Published by Oxford University Press on behalf of the European Society of Cardiology.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http://creativecommons.org/licenses/by-nc/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact journals.permissions@oup.com