response using a quadripolar LV lead. *Pacing Clin Electrophysiol* 2013;**36**:963–9.
21. 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 pacing thresholds an acute canine study. *Circ Arrhythmia Electrophysiol* 2012;**5**:815–20.
23. 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.

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

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A 78-year-old man with sick sinus syndrome and accompanying persistent atrial tachyarrhythmia had undergone dual-chamber pacemaker (Evia DR-T™ Biotronik Inc., Germany) implantation with bipolar screw-in atrial and ventricular leads (Siello JT53™ and Siello S60™, Biotronik Inc.). Measured pacemaker and lead function values were within acceptable limits. Remote monitoring (Home Monitoring™ 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.

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