

Neth Heart J (2021) 29:173–174
<https://doi.org/10.1007/s12471-020-01496-w>



Broad complex tachycardia; never judge a book by its cover

M. V. Regeer · L. F. Tops · M. de Riva Silva

Accepted: 8 September 2020 / Published online: 2 October 2020
© The Author(s) 2020

Answer

The electrocardiogram (ECG) at admission showed a broad complex tachycardia of 138 bpm with superior axis, left bundle branch block (LBBB) morphology and a transition in lead V5. There was no apparent atrioventricular (AV) dissociation. His device for cardiac resynchronisation therapy with defibrillator function (CRT-D) was interrogated and showed a regular tachycardia with 1:1 AV relationship and a short ventriculoatrial (VA) time (<60 ms, not compatible with a concealed bypass) (Fig. 1a).

Ventricular overdrive pacing was performed from the right ventricular (RV) lead (located at the RV apex) at 94%, 88% and 84% of the tachycardia cycle length. With the RV bursts at 94% and 88% of the tachycardia cycle length, the tachycardia did not terminate but was entrained. Fig. 1b shows the response to entrainment with a ventricular-atrial-ventricular (V-A-V) response and a long post-pacing interval. At 84% of the cycle length, the arrhythmia was terminated (unlikely for atrial tachyarrhythmia).

An electrocardiogram without biventricular pacing (Fig. 2) showed sinus rhythm with a broad LBBB with identical QRS morphology as the tachycardia. In conclusion, there was a broad complex tachycardia without AV dissociation, a QRS morphology identical to

non-paced conducted sinus rhythm, a short VA interval and a long post-pacing interval as a result of entrainment from the RV apex, all findings compatible with AV nodal re-entry tachycardia.

The metoprolol dosage was increased and the patient was instructed to perform Valsalva manoeuvre in case of palpitations. Alternative treatment with a calcium channel blocker was less opportune regarding the negative inotropic effects, preferably avoided in this patient with non-ischaemic cardiomyopathy. In case of recurrence, ablation will be considered.

Conflict of interest M.V. Regeer, L.F. Tops and M. de Riva Silva declare that they have no competing interests.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

M. V. Regeer (✉) · L. F. Tops · M. de Riva Silva
Department of Cardiology, Leiden Heart-Lung Center,
Leiden University Medical Center, Leiden, The Netherlands
m.v.regeer@lumc.nl



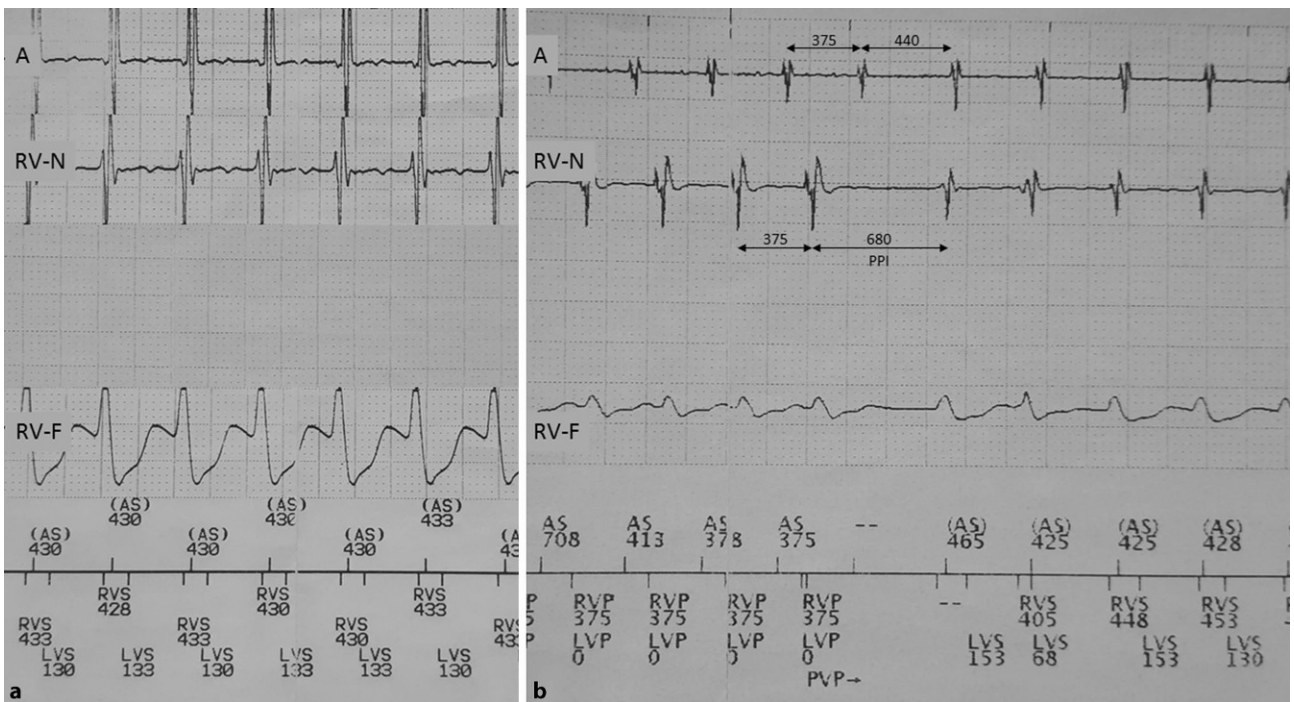


Fig. 1 **a** Implantable cardioverter defibrillator tracing. **b** Unsuccessful overdrive pacing with relatively long post-pacing interval (A atrial lead electrogram, RV-N right ventricular lead near-field electrogram, RV-F right ventricular far-field electrogram, PPI post-pacing interval)

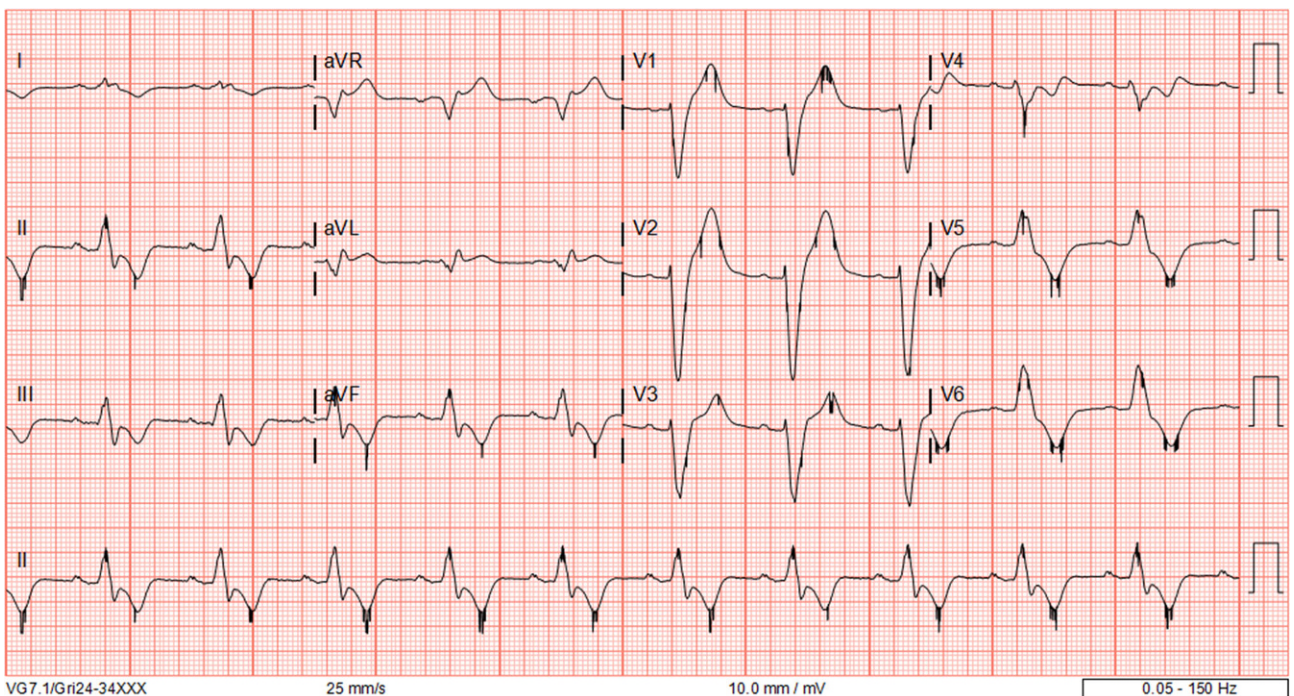


Fig. 2 Electrocardiogram without pacing