Acta Cardiologica

ISSN: 0001-5385 (Print) 0373-7934 (Online) Journal homepage: https://www.tandfonline.com/loi/tacd20

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To cite this article: Benoit Robaye, Dominique Blommaert, Benoit Collet & Olivier Xhaët (2020): Atypical termination of a typical arrhythmia, Acta Cardiologica, DOI: 10.1080/00015385.2020.1741142

To link to this article: https://doi.org/10.1080/00015385.2020.1741142

Published online: 18 Mar 2020.

ACTA CARDIOLOGICA
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IMAGE FOCUS

Atypical termination of a typical arrhythmia

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ARTICLE HISTORY Received 22 January 2020; Revised 4 March 2020; Accepted 5 March 2020

A 17-year-old woman underwent electrophysiological study for short-lasting paroxysmal tachycardia.

Using a three-dimensional electro-anatomical mapping system, we reconstructed a 3 D shell of the right atrial anatomy with an ablation catheter and inserted a duodecapolar catheter in the coronary sinus (mentioned as "Halo" on the endocavitary recordings, with Halo 3 at the ostium of the coronary sinus) (Image A, white arrow). During the study, ablation catheter was placed on the atrio-ventricular junction. Its distal electrode is mentioned as HBE (His Bundle Electrogram) and proximal as AVN (Atrio-Ventricular Node).

We easily induced a typical (Slow/Fast) AVNRT with an uncommon mode of termination: The surface ECG shows two cycles of AVNRT with a retrograde p-wave (Image A, green arrows) slightly after the QRS complex then the arrhythmia stops and sinus rhythm reappears. Endocavitary recordings (Image B, focus on the framed part of the Image A) show an increase of the HA interval measured on the AV node catheter from 96 to 178 milliseconds before the stop.

This is consistant with a jump from a typical (Slow/Fast) to an atypical (Slow/Slow) AVNRT, which is unusual, especially at this age. Another possibility would have been a slowdown of the conduction through the retrograde fast pathway, but this is less likely to be the case, because we observe the atrial depolarisation (Image B, red arrows) later on the AV node catheter (which is close to the fast pathway) than on Halo 3 (close to the slow pathway).

We ablated the slow pathway with no arrhythmia recurrence.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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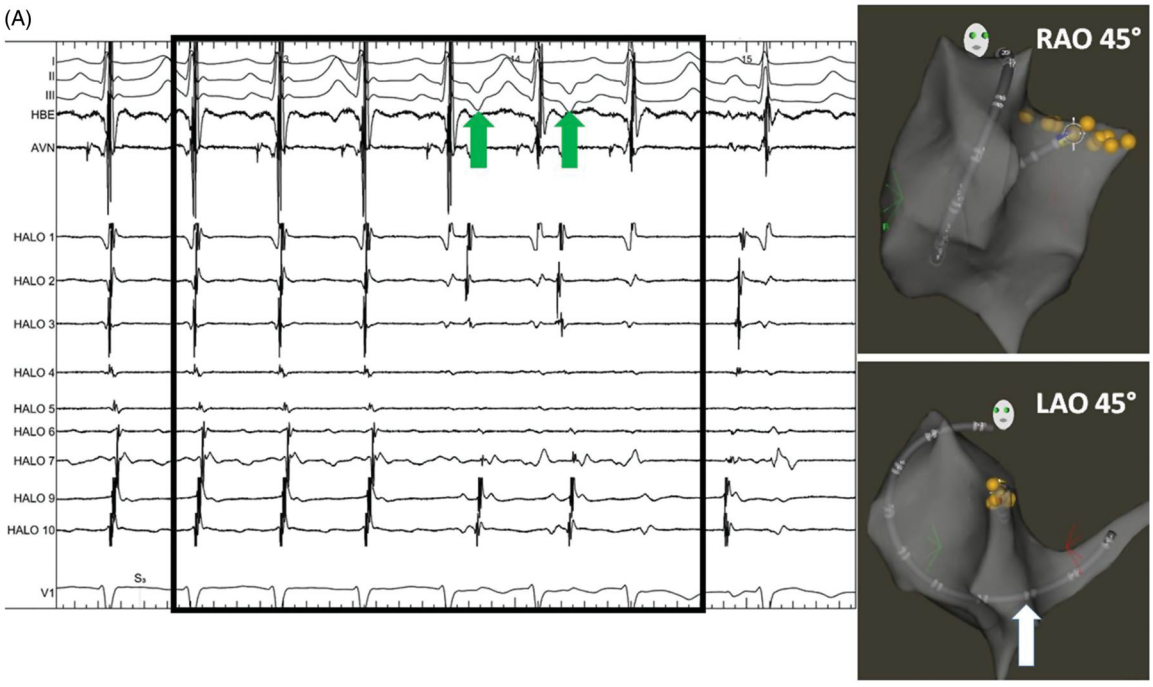
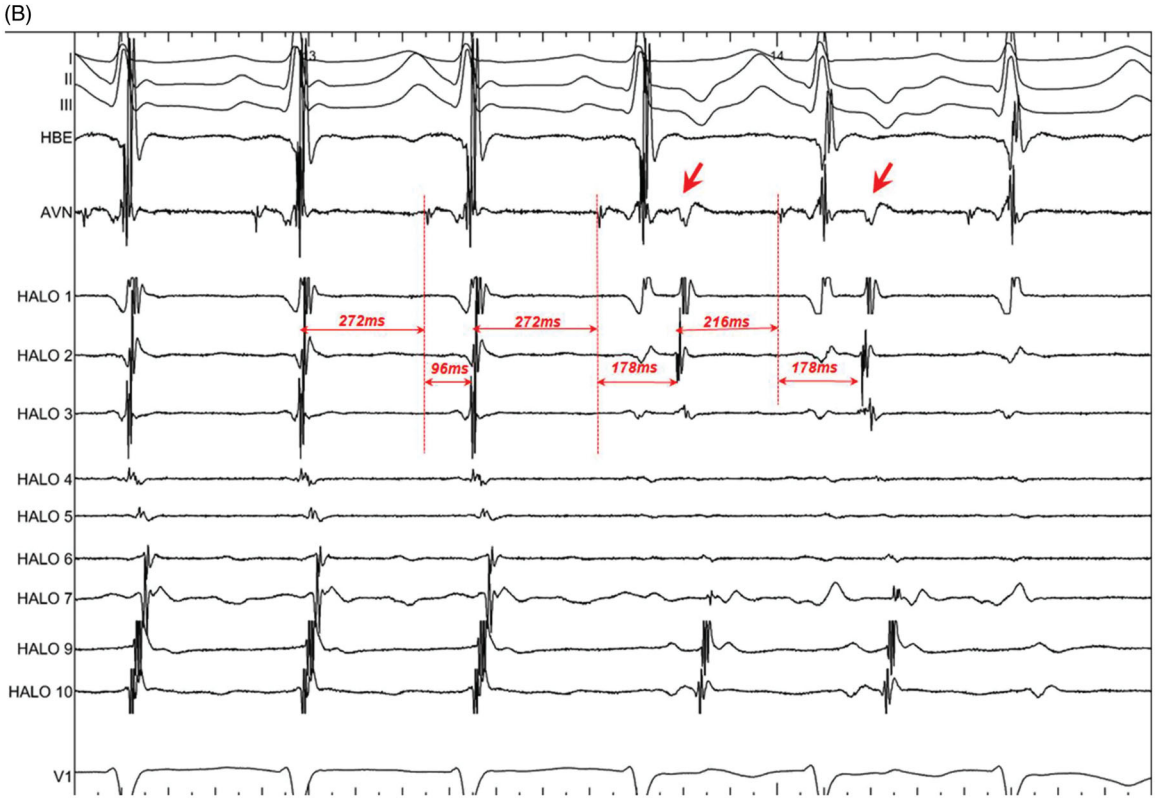

(A)
I
II
III
HBE
AVN
HALO 1
HALO 2
HALO 3
HALO 4
HALO 5
HALO 6
HALO 7
HALO 9
HALO 10
V1
S3
RAO 45°
LAO 45°


(B)
I
II
III
HBE
AVN
HALO 1
HALO 2
HALO 3
HALO 4
HALO 5
HALO 6
HALO 7
HALO 9
HALO 10
V1
272ms
272ms
216ms
96ms
178ms
178ms