©Copyright by Croatian Cardiac Society. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/) which permits users to read, download, copy, distribute, print, search, or link to the full texts of these articles in any medium or format and to remix, transform and build upon the material, provided the original work is properly cited and any changes properly indicated.

Focal atrial tachycardia originating from the non-coronary cusp of the aortic valve: a case report

Marko Vincetić*, **Ivana Lukić**, **Ivana Arambašić**, **Petra Zebić Mihić**, **Kristina Selthofer-Relatić**, **Hrvoje Roguljić**

University Hospital Centre Osijek, Osijek, Croatia.

KEYWORDS: focal atrial tachycardia, catheter ablation, non-coronary cusp, electrophysiological study, supraventricular tachycardia.

CITATION: Cardiol Croat. 2026;21(11-12):244-5. | https://doi.org/10.15836/ccar2026.244

***ADDRESS FOR CORRESPONDENCE:** Marko Vincetić, Klinički bolnički centar Osijek, Josipa Huttlera 4, HR-31000 Osijek, Croatia. / Phone: +385-97-6380-195 / E-mail: markovincetic1999@gmail.com

ORCID: Marko Vincetić, https://orcid.org/0009-0004-9443-6178 • Ivana Lukić, https://orcid.org/0000-0001-9832-6700 Ivana Arambašić, https://orcid.org/0009-0006-3191-2282 • Petra Zebić Mihić, https://orcid.org/0000-0003-1302-6165 Kristina Selthofer-Relatić, https://orcid.org/0000-0002-9890-6489 • Hrvoje Roguljić, https://orcid.org/0000-0002-3747-9305

Introduction: Focal atrial tachycardia (FAT) is a form of supraventricular tachycardia originating from a single ectopic focus within the atrial myocardium or adjacent structures. Even though the non-coronary cusp (NCC) is part of the aortic valve, its close proximity to the atrial myocardium provides an anatomical basis for focal atrial tachycardias originating from this region. Awareness of the NCC as a potential site of origin is important for accurate electrophysiological mapping and successful ablation.[1]

Case report: We report a 74-year-old woman with a six-year history of atrial tachycardia who was admitted for an electrophysiological study and planned catheter ablation due to recurrent palpitations. 4 months ago, we performed first electrophysiological study in this patient due to the symptomatic supraventricular tachycardia. During that procedure a focal atrial tachycardia had been induced corresponding to clinical arrhythmia and the attached ECG recordings (**Figure 1**). However, the procedure had been discontinued because a three-dimensional electroanatomical mapping system was unavailable at that moment. During the repeat electrophysiological study, a regular narrow-complex tachycar-

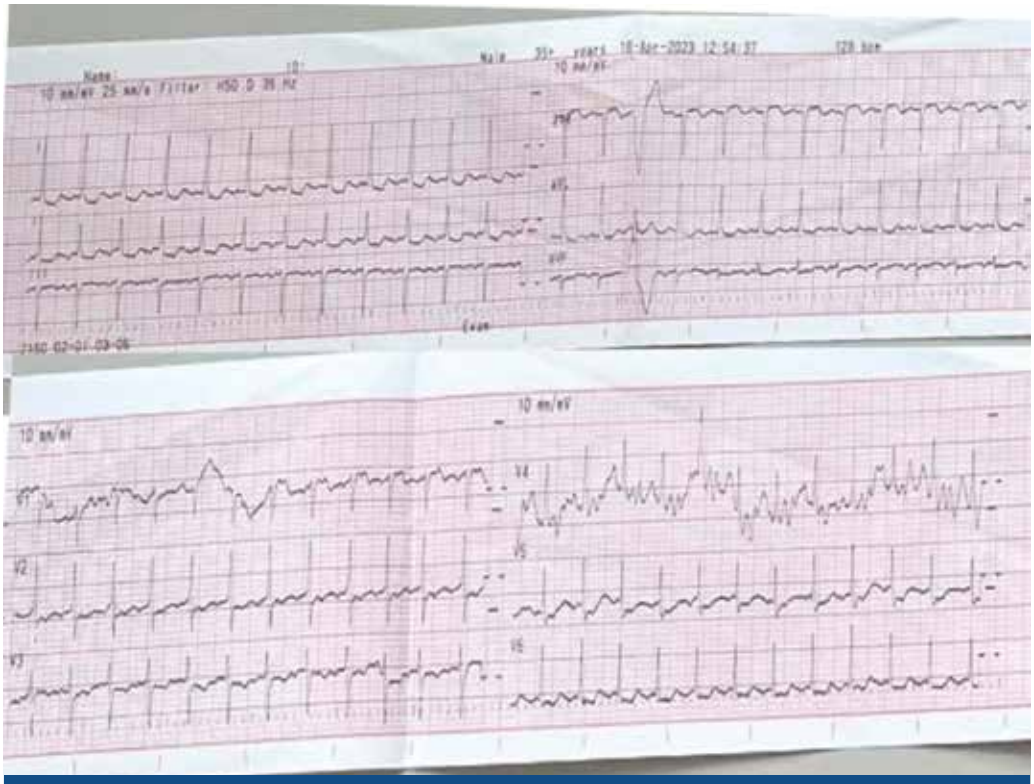


FIGURE 1. 12-lead electrocardiogram.

RECEIVED:
October 25, 2026
UPDATED:
November 4, 2026

dia with a tachycardia cycle length (TCL) of approximately 460 ms was induced. Intracardiac recordings demonstrated concentric atrial activation, with the earliest atrial electrogram recorded in the right atrial para-Hisian region. Ventricular overdrive pacing demonstrated a V-A-A-V response, supporting atrial tachycardia as the underlying mechanism. Mapping of the aortic root via femoral arterial access identified the site of earliest atrial activation within the non-coronary cusp. Radiofrequency ablation within the NCC using an irrigated catheter at 30 W successfully terminated the tachycardia, which remained non-inducible following ablation (**Figures 2** and **3**). The procedure was completed without complications, and post-procedural echocardiography confirmed the absence of pericardial effusion. The patient was discharged in stable condition and antiarrhythmic therapy was discontinued.

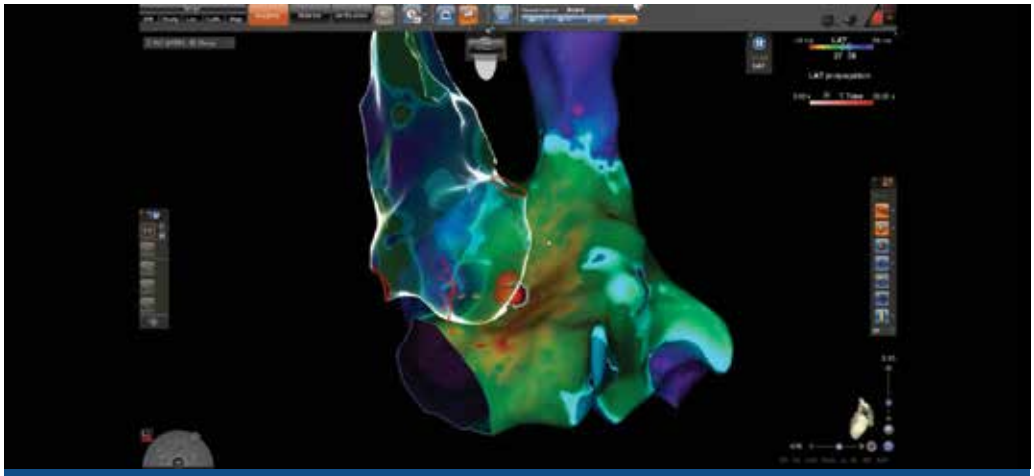


FIGURE 2. Activation map of focal atrial tachycardia.

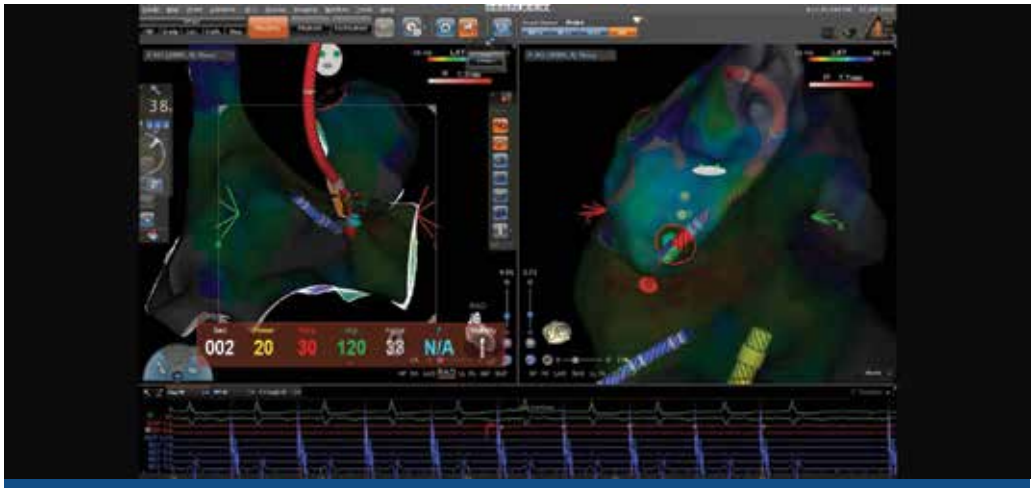


FIGURE 3. Catheter ablation.

Conclusion: The non-coronary cusp (NCC) may represent the site of origin of focal atrial tachycardia in selected patients. This case highlights the importance of detailed electrophysiological mapping and recognition of the NCC as a potential arrhythmogenic site, allowing precise localization of the ectopic focus and successful radiofrequency ablation.

LITERATURE

1. Beukema RJ, Smit JJ, Adiyaman A, Van Casteren L, Delnoy PP, Ramdat Misier AR, et al. Ablation of focal atrial tachycardia from the non-coronary aortic cusp: case series and review of the literature. Europace. 2015 Jun;17(6):953-61. https://doi.org/10.1093/europace/euu227