

## EP CASE REPORT

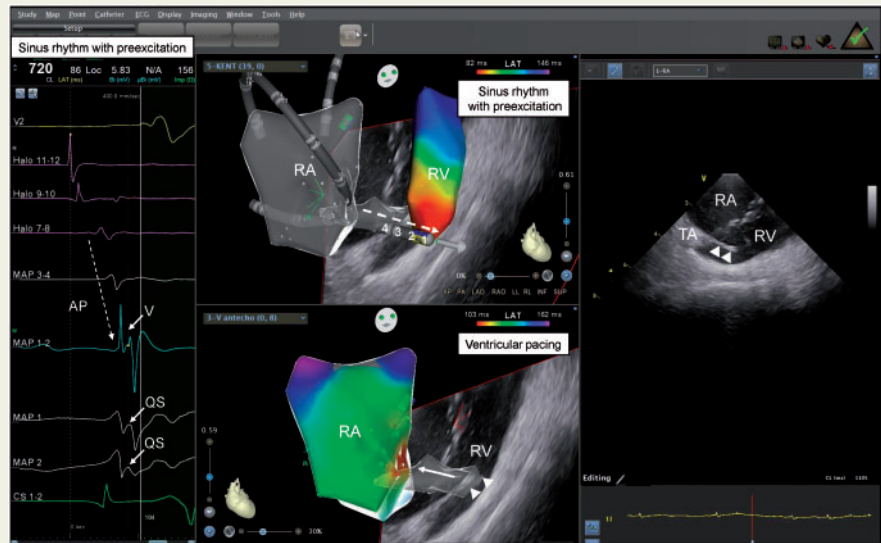
# Right-sided accessory pathway visualized using intracardiac echocardiography

Hirota Yada<sup>1\*</sup>, Kyoko Soejima<sup>2</sup>, Kei Ito<sup>1</sup>, and Takeshi Adachi<sup>1</sup>

<sup>1</sup>Department of Cardiology, National Defense Medical College, 3-2 Namiki, Tokorozawa, Saitama 359-8513, Japan; and <sup>2</sup>Department of Cardiology, Kyorin University School of Medicine, Tokyo, Japan

\*Corresponding author. Tel: +81 4 2995 1211; fax: +81 4 2996- 5200. E-mail address: hyada@ndmc.ac.jp

A 57-year-old woman with a right-sided accessory pathway (AP) presented with frequent palpitations and underwent radiofrequency (RF) catheter ablation. Transthoracic echocardiography showed no structural heart disease, including Ebstein's anomaly. A three-dimensional electroanatomical mapping system was used to map the ventricular and atrial activation during sinus rhythm and right ventricular (RV) pacing. The AP had no decremental property, and the earliest atrial activation site was located at 9 o'clock to the tricuspid annulus (TA). The earliest ventricular activation site was 2 cm away from the TA. A SOUNDSTAR<sup>®</sup> catheter (Biosense Webster, Diamond Bar, CA, USA) revealed a strand-like structure connecting the lateral TA and anterior papillary muscle (white arrowheads in the *Figure 1*, [Supplementary material online, Video](#)). When mapping was conducted using a NAVISTAR<sup>®</sup> THERMOCOOL<sup>®</sup> catheter (Biosense Webster, Diamond Bar, CA, USA) along this structure, an AP potential was recorded at the ventricular end of the structure during sinus rhythm (left side and centre top in the *Figure 1*). An AP potential was recorded at the Halo 7–8, proximal (MAP 3–4) and distal (MAP 1–2) electrodes of the mapping catheter (dotted white arrow). A QS pattern was observed in unipolar recordings from MAP 1 and 2. The earliest atrial activation during RV pacing was located at the atrial end of a strand-like structure (centre bottom in the *Figure 1*). Application of an RF current at the atrial end immediately abolished AP conduction. These findings suggested a strand-like structure containing an AP. No adverse event was observed afterwards. The strand-like structure was observed during intracardiac echocardiography, but not during transthoracic echocardiography.



**Figure 1** Accessory pathway potential and a strand-like structure visualized using intracardiac echocardiography.

When mapping was conducted using a NAVISTAR<sup>®</sup> THERMOCOOL<sup>®</sup> catheter (Biosense Webster, Diamond Bar, CA, USA) along this structure, an AP potential was recorded at the ventricular end of the structure during sinus rhythm (left side and centre top in the *Figure 1*). An AP potential was recorded at the Halo 7–8, proximal (MAP 3–4) and distal (MAP 1–2) electrodes of the mapping catheter (dotted white arrow). A QS pattern was observed in unipolar recordings from MAP 1 and 2. The earliest atrial activation during RV pacing was located at the atrial end of a strand-like structure (centre bottom in the *Figure 1*). Application of an RF current at the atrial end immediately abolished AP conduction. These findings suggested a strand-like structure containing an AP. No adverse event was observed afterwards. The strand-like structure was observed during intracardiac echocardiography, but not during transthoracic echocardiography.

[Supplementary material](#) is available at *Europace* online.

**Conflict of interest:** none declared.