Successful ablation at the left coronary sinus cusp of an accessory pathway at the aortic-mitral continuity

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Accessory pathways are rarely seen at the aortic-mitral continuity. A 27-year-old male presented with wide-complex tachycardia. Sinus rhythm electrocardiogram demonstrated pre-excitation, positive in V1–V6, I, II, III, aVF, negative in aVL and aVR. Programmed stimulation showed non-decremental conduction. Morphology of pre-excited beats was similar to ventricular arrhythmias from the left coronary cusp (LCC). Earliest ventricular activation was identified above the LCC leaflet.

Accessory pathways (APs) are rarely found at the left coronary cusp (LCC) aortic-mitral continuity.

A 27-year-old male presented with wide QRS tachycardia. Baseline electrocardiogram (ECG) showed delta-waves positive in V1–V6, I, II, III, aVF, and negative in aVL and aVR. Electrophysiological mapping in the left ventricle found earliest ventricular activation below the LCC leaflet preceding the delta-wave onset by 27 ms. The catheter was unable to be maintained in a stable position below the valve leaflet and dislodged into the aorta after 34 s of radiofrequency application. Further mapping above the LCC leaflet showed earliest ventricular activation preceding the delta-wave onset by 35 ms. This allowed for a more stable catheter position. Conventional radiofrequency energy (25 W) was applied after aortic angiography was performed using the irrigated-tip ablation catheter to simultaneously visualize the left main coronary artery ostium and the catheter tip to minimize the risk of coronary artery complications. Using these techniques, the AP was eliminated 7 s after the start of radiofrequency application.

This case demonstrates our ablation approach for rare APs at the LCC and our recommendation to ablate from above the valve leaflet. It also emphasizes the importance of considering this rare location when the delta-wave suggests an anterior location.

The full-length version of this report can be viewed at: http://www.escardio.org/communities/EHRA/publications/ep-case-reports/Documents/Successful-ablation-at-the-left.pdf.

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