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Catheter ablation of arrhythmia from the aortic sinus cusp: the presence of a dead-end tract of the conduction system

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We described a case of idiopathic arrhythmia originating from the coronary cusp. Intracardiac recordings showed a shorter HV interval (36–49 ms) during ectopic beats compared with the HV interval (55–62 ms) during sinus. A potential was recorded at the right coronary cusp (RCC) that was later than the His by 9–18 ms during sinus but earlier than the His by 12–23 ms during ectopy. The RCC potential–V interval was longer during ectopic (54–70 ms) than during sinus rhythm (43–49 ms) (panel A). A perfect pacemap was obtained with the stimulus–QRS equals to the electrogram–QRS interval (panel B). A single radiofrequency application resulted in immediate elimination of ectopy and the RCC potential without changes in PR and HV intervals.

Remnants of specialized myocytes surrounding the atrioventricular and ventriculo-aortic junctions represent the branching component of the conduction axis. Such ‘dead-end tracts’ have been described to disappear in the central fibrous body. In this patient, the RCC potential may originate from such ‘dead-end tract’, inserted distal to the His bundle. During ectopy, the RCC potential preceded the His deflection, and the shorter HV interval reflected simultaneous impulse propagations to the His bundle and ventricles. This report illustrates an important anatomical relationship between the aortic ring and the conduction system.

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

