Catheter Ablation of Ventricular Arrhythmia Originating from the Aortic Cusp Guided by NavX Mapping

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Objective: To study the feasibility and safety of radiofrequency catheter ablation (RFCA) of ventricular tachycardia (VT) or ventricular premature contraction (VPC) originating from the aortic cusp under the guidance of NavX system. Methods: Twenty-four patients with VT/VPC originating from aortic cusp were enrolled. The geometry of aortic cusp was reconstructed using NavX mapping technique and the accuracy was confirmed by coronary angiography. Ablation was applied at the site with earliest activation. Results: The VTs/PVCs in all 24 cases were successfully ablated, and the targets were located on left coronary cusp in 16, right coronary cusp in 4, anterior wall of aortic between left and right coronary cusp in 4. There was no procedure-related complication occurred. The total procedure time and the fluoroscopic time (coronary angiography time included) was 56.1 ± 18.3 min and 11.2 ± 6.8 min. Left circumflex artery stenosis was documented before mapping in 1 case and stenting procedure was performed after RFCA. There was only one VT case with PVC recurrence during a 16 ± 12 months follow-up, and re-ablation succeeded. Conclusions: NavX mapping and navigation technique is feasible and safe to guide the ablation of VT/VPC with aortic cusp origin. Keywords: ventricular arrhythmia, aortic sinus cusp, catheter ablation