Contact versus noncontact guided mapping and ablation for ventricular arrhythmias originating from the right ventricular outflow tract: a propensity score matched analysis

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Introduction: There are limited data on comparison of outcomes of contact mapping (CM) versus noncontact mapping (NCM) guided premature ventricular complexes (PVCs) or ventricular tachycardia (VT) mapping and radiofrequency ablation utilizing EnSite electroanatomical mapping system. This study was to compare CM versus NCM for mapping and ablation of PVCs/VT originating from the right ventricular outflow tract (RVOT).

Methods: 167 consecutive patients with idiopathic RVOT PVCs/VT were referred for mapping and catheter ablation guided by NCM or CM using EnSite mapping system. The propensity score (PS) with a 1:2 PS matched method was used to reduce confounding factors across NCM and CM.

Result: A total of 131 patients were enrolled after matching. Baseline characteristics were balanced between the 2 groups. If initial ablation was unsuccessful at either CM or NCM group, patients were crossed over to the other group (CM to NCM and vice versa). Procedural duration, fluoroscopy times and complication rates were not different between the two groups. Ablation was acutely successful in 37 of 47 (78.7%) patients in the NCM group and 78 of 84 (92.9%) in the CM group (P = 0.02). 10 patients were switched to the CM group and 3 patients crossed over to the NCM. During a mean follow-up of 51 ± 20.6 months, 35 of the 37 NCM patients remained free of arrhythmia, while 69 of the 78 CM patients had no recurrent arrhythmias.

Conclusion: CM guided RVOT PVC/VT ablation with EnSite electroanatomical mapping system is more effective than NCM.