中文題目：以非侵入性信號平均心電圖來預測心律失常性右心室心肌病變對於心外膜電燒之需求

英文題目：The Application of Noninvasive Signal-averaged Electrocardiogram Analysis in Predicting the Requirement of Epicardial Ablation in Patients with Arrhythmogenic Right Ventricular Cardiomyopathy

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Background: Signal-averaged electrocardiogram (SAECG) provides not only diagnostic information but also the prognostic implication of ablation in arrhythmogenic right ventricular cardiomyopathy (ARVC). This study aimed to validate the role of SAECG in identifying arrhythmogenic substrates requiring an epicardial approach in ARVC.

Methods: Ninety-one patients with a definite diagnosis of ARVC who underwent a successful ablation for drug-refractory ventricular arrhythmia (VA) were enrolled and classified into two groups: group 1 who underwent a successful ablation at the endocardium only and group 2 who underwent a successful ablation requiring additional epicardial approach. The baseline characteristics of the patients and non-invasive SAECG parameters were obtained for analysis.

Results: Male predominance, worse right ventricular (RV) function, higher incidence of syncope, and depolarization abnormality were observed in group 2. Moreover, the number of abnormal SAECG criteria was higher in group 2 than in group 1 (2.4 ± 0.8 vs. 1.2 ± 1.0, $p < 0.001$). After a multivariate analysis, the independent predictors of the requirement of epicardial ablation included the number of abnormal SAECG criteria (odds ratio [OR]: 2.8, 95% confidence interval [CI]: 1.4-5.4, $p=0.003$) and presence of syncope (OR: 11.7, 95% CI: 2.7-50.4, $p=0.001$). In addition, ≥ 2 (+) abnormal SAECG criteria were associated with larger RV endocardial unipolar low-voltage zone (LVZ) ($p<0.001$), larger RV endocardial/epicardial bipolar LVZ/scar ($p<0.05$), and longer RV endocardial and epicardial total activation time ($p<0.001$ and $p=0.004$, respectively).

Conclusion: The number of abnormal SAECG criteria was correlated to the extent of diseased epicardial substrate and could be a potential surrogate marker in predicting the requirement of epicardial ablation in ARVC patients with drug-refractory VA.