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The use of electroanatomic mapping for diagnosis of arrhythmogenic right ventricular cardiomyopathy

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Objectives: To evaluate the results of electroanatomic voltage mapping (EAM) and targeted endomyocardial biopsy (EMB) from the low voltage areas in young pts with suspected arrhythmogenic right ventricular cardiomyopathy (ARVC).

Methods: Intracardiac electrophysiologic study with EAM (CARTO) of the right ventricle (RV) was performed in 9 consecutive pts (period 1/2012–11/2013) with possible/borderline ARVC using current non-invasive task force criteria at median age of 16.5 (range 11.5-38.0) yrs. One pat had positive family history, 7/9 pts had arrhythmia symptoms and 5/9 had documented ventricular arrhythmias. Surface ECG changes suspicious of ARVC were present in 4/9 and cardiac MRI was positive in 3/9 pts. Late ventricular potentials were present in all pts.

Results: EAM showed low voltage areas in RV inlet and/or RV outflow tract in all pts (Fig.). EMB was positive in 5/7 pts and programmed RV stimulation in 2/9 pts. Definite diagnosis of ARVC was thus established in 4/9 pts. An ICD was implanted in 3 pts for either primary (2 pts, first adequate therapy 2 months later in 1) or secondary (1 pat) prevention.

Conclusions: EAM with targeted EMB is highly useful for establishing final diagnosis of ARVC and may facilitate the decision on primary preventive ICD implantation in selected pts.

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