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

Kubuš P. (1), Riedlbauchová L. (2), Materna O. (1), Janoušek J. (1)
Children’s Heart Centre, University Hospital Motol, Prague, Czech Republic (1); Cardiology Clinic of the 2nd Faculty of Medicine of Charles University and University Hospital Motol, Prague, Czech Republic (2)

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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