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ANATOMICAL-GUIDED 'CARDIONEUROABLATION' TO TREAT NEUROCARDIOGENIC SYNCOPE ASSOCIATED WITH FUNCTIONAL AV BLOCK

Shan Zhaoliang, Wang Yutang, Guo Hongyang *Department of Cardiology, Chinese PLA General Hospital, Beijing, China*

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Background Young patients with severe symptomatic functional atrioventricular block will receive permanent pacemaker implantation. Unfortunately, implantation may bring these patients inestimable barriers to their life. Our study discussed the methods, efficacy and safety of anatomical-guided 'cardioneuroablation' used to treat patients with neurocardiogenic syncope associated with functional AV block.

Methods Two patients with recurrent syncope were confirmed by remote electrocardiological monitoring with functional atrioventricular block (AVB). One patient (male, 20 years old) had ventricular arrest of 17.2 s, the other (female, 17 years old) manifested II degree type II AVB. After excluding structural heart diseases by ECG, echocardiography and MRI, two patients accepted electrophysiological test. Baseline SNRT, Wenckebach point and ERPAVN were measured. Then, guided by 3-dimensional mapping system (CARTO), linear ablation were performed from CS ostia to IVC. After ablation, SNRT, Wenckebach point and ERPAVN were measured again. Regular follow-up including telephone interview every week, Holter and UCG every month lasted for 4 months. Outcome the SNRT, Wenckebach point and ERPAVN before and after ablation of two patients were 1115 ms, 206 bpm, 290 ms versus 1143 ms, 214 bpm, 240 ms, and 1178 ms, 150 bpm, 310 ms vs 1223 ms, 157 bpm, 240 ms, respectively. During ablation, both two patients experienced obvious vagal reflex. During 4 months follow-up, the patients had no syncope, amaurosis or new-onset symptoms. There were no AVB, trial fibrillation, ventricular arrhythmias in ECG and Holter, and no structural changes were found by UCG.

Conclusion Anatomical-guided 'cardioneuroablation' may be a better treatment of young patients with functional symptomatic AVB. The strategy of linear ablation from CS to IVC influenced SNRT and Wenckebach point little, but changed ERPAVN markedly. Vagal reflex during ablation and significant shortening of ERPAVN may predict the successful treatment.