



Development and validation of surface electrocardiogram in the septal accessory pathway localization in typical Wolff-Parkinson-White syndrome

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Abstract

Objectives: This study was designed characteristics of surface electrocardiogram (ECG) for the localization of septal accessory pathway (AP) in the typical Wolff-Parkinson-White (WPW) syndrome to develop a new algorithm ECG for the septal AP localization, and to test the accuracy of the algorithm prospectively.

Subject and Methods: We studied 106 patients, in 65 patients with typical WPW syndrome have a single anterograde with the localization of Aps identified by successful radiofrequency catheter ablation (RCFA) to develop a new ECG algorithm for the septal AP localization. Then this algorithm was tested prospectively in 41 patients were compared with the location of AP's successful ablation by RCFA (gold standard).

Results: We found that the 12 lead ECG parameters in 65 patients with typical WPW syndrome such as the transition of the QRS complex, delta wave polarity in V1 lead, delta wave polarity in at least 2/3 inferior leads and morphology QRS was "QRS pattern" in inferior leads in diagnosis for the localization of septal APs with high accuracy predicted from 83.3% to 100%, and for development of a new ECG algorithm. Then the following 41 patients were prospectively evaluated by the new derived algorithm for the septal pathways with high sensitivity and specificity from 84.6% to 100%.

Conclusion: 12-lead ECG parameters in typical WPW syndrome closely related to the septal AP localization, in order to develop the new ECG algorithm by parameters as above; and can be used to a new septal ECG algorithm in predicted the location APs with high accuracy predicted.

Keywords

12-lead ECG, accessory pathway localization, septal AP, WPW syndrome

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