Association of J-Wave with Atrial Fibrillation in Wolff-Parkinson-White Syndrome

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Background: J-waves are considered to reflect early repolarization. We have previously reported the disappearance of J waves after catheter ablation of an accessory pathway in patients with Wolff-Parkinson-White syndrome. Here, we further studied the association of an accessory pathway on J-waves with Wolff-Parkinson-White syndrome.

Methods: We included 124 patients with Wolff-Parkinson-White syndrome who underwent catheter ablation, and 1936 controls without structural heart disease or ECG abnormalities.

Results: The prevalence of J-waves was higher in patients with Wolff-Parkinson-White syndrome (n=69, 56%) than the controls (n=222, 11.5%). After successful ablation of the Wolff-Parkinson-White patients, J-waves disappeared in 22 patients, while J-waves were still apparent or after ablation in 21 patients. The prevalence of atrial fibrillation was higher in patients with J-waves (n=31, 45%) after ablation than those without (n=15, 33%). The ventricular and atrial refractory period tended to be shorter in patients with J-waves, after ablation than those without such waves.

Conclusion: J-waves were frequently observed and were affected by ablation of an accessory pathway in patients with Wolff-Parkinson-White syndrome although the exact nature of this association is still undetermined.

Keywords: Wolff-Parkinson-White syndrome, J wave, atrial fibrillation