

Abstract

The aim of our study was to compare the two dimension echocardiographic parameters as well as the tissue Doppler imaging (*TDI*) parameters before and after accessory pathway radiofrequency catheter ablation (RFCA) in patients with Wolff-Parkinson-White (WPW) syndrome to determine the extent at which the accessory pathways contributes to cardiac dyssynchrony, global left ventricular (LV) function and whether or not cardiac synchrony is restored after RFCA. Also to assess the ability of TDI to provide clues about accessory pathway location.

Methods: Twenty patients (13 males, 7 females) aged 25.6 ± 12.2 years with WPW syndrome without any associated structural heart disease were enrolled in the study. All patients underwent successful RFCA. Echocardiographic examination (Two dimension as well as TDI) was done for all patients before and after RFCA.

Results: It was of notice that the Δ QV intervals (the difference between the left and right ventricular pre-ejection periods) as a measure of interventricular dyssynchrony and the time intervals between peak systolic velocity of septum and lateral wall (septal-to-lateral wall delay) as a measure of intraventricular dyssynchrony were found to be statistically significantly shortened after successful RFCA of both the right-sided and left-sided accessory pathways. The LA transverse diameter as well as the LVESD were also found to be statistically significant smaller after accessory pathway RFCA in comparison to the pre-ablation diameter. As regarding the ability of TDI to provide clues about accessory pathway localization, the preablation TDI in our study was able to predict the site of the nine patients of right sided accessory pathways (100% positive predictive value) with same sensitivity and specificity as preablation ECG using Arruda et al algorithm(100% and 89.9% respectively) and also predicted the site of 10/11 of the left side (91% positive predictive value) with also same sensitivity and specificity as preablation ECG using Arruda et al algorithm(90.9% and 100% respectively).

Conclusion: Wolff–Parkinson–White syndrome is associated with interventricular and intraventricular electromechanical delay causing cardiac dyssynchrony. Radiofrequency catheter ablation resulted in shortening of interventricular and intraventricular electromechanical delay and thus mechanical resynchronization. Doppler echocardiographic examination can also provide clues about accessory pathway location in Wolff-Parkinson-White (WPW) syndrome patients.

Key Words:

WPW, Localization of Accessory Pathway, WPW and Mechanical Dyssynchrony, Management of WPW Syndrome.