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RIGHT ATRIAL INVOLVEMENT IN RIGHT ARRHYTHMOGENIC CARDIAC DYSPLASIA

Background

Arrhythmogenic right ventricular dysplasia (ARVD) is an inherited cardiomyopathy that predominantly affects the right ventricle. Patients can also be prone to developing atrial fibrillation (AF), and this may be related to structural changes in the right rather than the left atrium. We used multichannel ECG analysis to explore this hypothesis

Methods

We studied 9 patients with confirmed ARVD and 9 controls who were similar in age, gender and body mass. An 80 lead ECG was obtained using a vest (Verathon) and data stored for offline analysis. In order to study the right and left atrial differences in p wave morphology we selected six anterior channels for the right and six posterolateral channels for the left. The p wave integral, amplitude and magnitude were compared between each group.

Results

There were no significant differences between the right and left leads for p wave integral, amplitude and magnitude in the controls. In the patients there were no significant difference in the p wave integral between the right and left. However the p wave amplitude and magnitude was larger for the channels related to the right atrium than the left ($p=0.036$ and $p=0.06$) (Figure).

Conclusion

The findings suggest abnormalities in right atrial structure and electrophysiology in ARVD patients. The increase AF burden in these patients therefore could be of right atrial origin.

Figure