

A Case of Catecholaminergic Polymorphic Ventricular Tachycardia

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Catecholaminergic polymorphic ventricular tachycardia (CPVT) is a familial cardiac arrhythmia that relates to RYR2 or CASQ2 gene mutation. It occurs in patients with structurally normal heart and causes exercise-/emotion-triggered syncope and sudden cardiac death. We experienced a case of CPVT in an 11 year-old female patient admitted for sudden cardiovascular collapse. The initial electrocardiogram (ECG) on emergency department revealed her in ventricular fibrillation. After a couple of defibrillation, sinus rhythm was restored. However, ventricular fibrillation was developed repeatedly during insertion of Levin tube in coronary care unit. On ECG monitoring sinus tachycardia was converted into bidirectional ventricular tachycardia. And then bidirectional ventricular tachycardia degenerated into ventricular fibrillation. To our knowledge, there has been no previous case report of CPVT triggered by sinus tachycardia in Korea. Therefore, we report this case with typical ECG findings.



Comparison between 2D echocardiographic methods and 3D echocardiographic methods in measurement of LA size

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Background Left atrial size is important prognostic factor at various cardiovascular conditions. Various methods are used in assessment of LA size. Among those, ellipsoidal method is widely used in clinical practice, but it's accuracy is not confirmed. Thus we prospectively measured LA size with various methods and evaluate superiority between 2 dimensional echocardiographic and 3 dimensional echocardiographic methods. Methods This prospective study include 47 patients (23 male, mean age 58.4±14 years) without history of atrial fibrillation, valvular heart disease, pacemaker implantation, congenital heart disease. All patients underwent echocardiography, and LA volume was measured by linear dimension, ellipsoidal methods, modified Simpson's methods and 3-dimensional echocardiography. Results Mean LA volume by ellipsoidal method 26.07±12ml/m2 by ellipsoidal method, 32.78±14 ml/m2 by modified Simpson's method and 30.04±12ml/m2 by 3 dimensional echocardiographic measurement. The 3D echocardiographic and 2D echocardiographic methods were correlated. Pearson correlation coefficient were 0.84 for 3 dimensional measure versus ellipsoidal method and 0.81 for 3 dimensional measure versus modified Simpson's method 0.59 for 3D measure versus AP diameter. (all P values < 0.001). Ellipsoidal method and modified Simpson's method showed good correlation, but 3D versus AP diameter showed poor correlation. 2D echocardiographic measurements showed trend of overestimation of LA volume especially enlarged LA size. Ellipsoidal method have trend to underestimate LA volume than modified Simpson's method compared to 3D echocardiographic measurement, but they didn't showed any significance. (p=0.918) Conclusion To measurement of LA volume, various methods were used. Both 2D echocardiographic methods (Ellipsoidal methods, modified Simpson's methods) have good correlation compared to 3D echocardiographic measurement. But there was trend to overestimate at larger LA size with 2D echocardiographic measurement.