

LV Diastolic Function:**Evaluation with Cine MR Based on Differential LA volume Change****최상일¹⁾, 장혁재²⁾, 홍성우¹⁾, 강성은²⁾, 정희승²⁾, 김철호²⁾**분당 서울대학교병원 진단방사선과¹⁾, 심장내과²⁾**목적 :**

LA attributes have been characterized as booster pump, reservoir, and conduit, yet characterization of their temporal occurrence or causal relationship to diastolic function has been lacking. The purpose of this study was to investigate differential LA functions and correlated with diastolic dysfunction based on Doppler echocardiography.

대상 및 방법 :

9 Normal controls and 21 patients (16: grade I, 5: grade II, 2: grade III diastolic dysfunction) with various heart disease were prospectively included. Patients with significant valvular heart diseases, arrhythmia are excluded. All patients underwent complete cardiac MRI and concurrent Doppler echocardiography(DE). The LA and LV endocardial contours were manually traced in each slice at each phase of the three-dimensional dataset and the corresponding segmental volumes were determined. The alteration of differential LA volumes were analyzed according to the DE-determined diastolic function.

결과 :

LV ejection fraction(EF)(56.7±13.4%) was not significantly different between groups. LA EF had a tendency to impaired with the extent of diastolic dysfunction(Control, 53.3±8.8; G I, 49.2±11.0; G II 42.6±5.2; G III, 35.3±0.1%; P=0.06). The relative ratio of LA reservoir(LA-R), booster(LA-B) and conduit(LA-C) volumes during cardiac cycles was approximately 30, 20 and 50% in normal control. Ratio of LA-R and LA-B was decreased in G I(0.73±0.37) and G II(0.73±0.19) and even increased in G III(1.65±0.96 vs. 1.43±0.57; p<0.05). However, relative ratio of LA-C to stroke volume had decreased linked to the degree of diastolic dysfunction(Control, 50.0±8.16; G I, 41.5±8.4; G II, 30.3±10.1; P<0.05).

결론 :

LA functions, especially as a conduit, are progressively impaired according to the grade of diastolic dysfunction. Combined with LV and LA attributes, LV diastolic function could be determined on routine MR study.