ACC.12
61st Annual Scientific Session & Expo
ACC-i2 with TCT innovation in intervention

E1552
JACC March 27, 2012
Volume 59, Issue 13

Pericardial/Myocardial Disease

DIAGNOSIS AND DIFFERENTIATION OF INFILTRATIVE, STORAGE, AND INFLAMMATORY DISEASE FROM HYPERTROPHIC CARDIOMYOPATHY USING 320 SLICE CT AND ELECTROCARDIOGRAM

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Sunday, March 25, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Pericardial/Myocardial Disease I
Abstract Category: 12. Pericardial/Myocardial Disease
Presentation Number: 1125-58

Authors: *Masae Uehara, Nobusada Funabashi, Hiroyuki Takaoka, Koya Ozawa, Yoshio Kobayashi, Chiba University, Chiba city, Japan*

Background: Diagnosis and differentiation of infiltrative, storage, and inflammatory diseases from hypertrophic cardiomyopathy (HCM) are important and difficult.

Method: 44 subjects (30 male) with asymmetrical left ventricular (LV) wall thickening on transthoracic echocardiogram (25 HCM, 19 non HCM (10 cardiac amyloidosis, 6 cardiac sarcoidosis, 2 Fabry disease, 1POEMS syndrome) were recruited.

Results: Myocardial fibrosis (MF) (or edema), and additional wall thickening at any site (≥ one) in right atrium, ventricle or left atrium on CT were observed in 78.9, 52.6% in non HCM, 48.0, 12.0% in HCM subjects; MF frequency and additional wall thickening were significantly higher in non HCM subjects (P=0.037, 0.003, respectively). Using presence of MF and additional wall thickening, sensitivity, specificity in differentiating non HCM from HCM subjects were 78.9, 52.0% in MF and 52.6, 88.0% in additional wall thickening, respectively. RV5+SV1 voltage on ECG X chest wall thickness on CT were significantly lower in non HCM subjects (293±255mm2) than in HCM subjects (744±397mm2) (P<0.001). Receiver operating characteristic (ROC) curves used to analyze RV5+SV1 voltage X chest wall thickness to distinguish both groups, revealed area under curve of 0.855, best cutoff point of 38.4mm2 (sensitivity 88.0%, specificity 78.9%).

Conclusion: Non HCM subjects had high frequency of MF and additional wall thickening which differentiated both groups with high accuracy as well as RV5+SV1 voltage X chest wall thickness.

	Non-HCM	HCM	P-value
Age	58.7± 12.1	64.9± 11.4	P=0.092
Sex (male)	12 (63.2%)	18 (72.0%)	P=0.533
Hypertension	6 (31.6%)	15 (60.0%)	P=0.062
Diabetes mellitus	2 (10.5%)	7 (28.0%)	P=0.155
Hyperlipidemia	4 (21.1%)	12 (48.0%)	P=0.066
320 slice CT			
Focal left ventricular wall thinning	6 (31.6%)	11 (44.0%)	P=0.402
Myocardial fibrosis or edema	15 (78.9%)	12 (48.0%)	P=0.037*
Additional wall thickening at any site (≥ 1) in right atria, ventricle or left atria	10 (52.6%)	3 (12.0%)	P=0.003*
ECG			
RV5+ SV1 voltage (mm)	17.4± 10.7	39.0± 19.0	P<0.001**
RV5+ SV1 voltage (mm) X chest wall thickness on CT (mm)	293 I 255	744 I 397	P<0.001**
Presence of Inverted T wave	6 (31.6%)	20 (80%)	P=0.001**