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CLINICAL CHARACTERISTICS OF FAT REPLACEMENT OF LEFT VENTRICULAR MYOCARDIUM

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Objective To evaluate the clinical characteristics of left ventricular fat replacement.

Methods We identified 45 patients [28M/17F, mean age (51.9±14.7) years] with left ventricular myocardial fat replacement (CT value ≤ -30 Hu) by cardiovascular CT.

Results Among 45 patients, 25 patients (20 M/5F, mean age 61.2 ± 10.4 years) were diagnosed as coronary artery disease (CAD). There was 56% single-vessel disease, 20% double-vessel disease and 24% triple-vessel disease, true left ventricular aneurysm was detected in 3 patients and left ventricular thrombi in 1 patient, the dimension of left ventricle was (54.5 ± 9.4) mm and the LVEF was $(51.8 \pm 13)\%$ in CAD group. In this group, fat replacement occurred in the region of myocardial infarction and presented as curvilinear band in subendocardial region. The left ventricular wall thickness was lower than 5 mm in 21 cases. The location of fat replacement in CAD group is as follows: apical region in 18 patients, distal septal in 15 patients, distal anterior in 11 patients, mid-septal in 7 patients, mid-anterior in 7 patients and basal in 1 patients. The age of remaining 20 patients (8 M/12 F) without CAD were (57.8 ± 13.3) years. In the group of non-CAD, dilated cardiomyopathy was diagnosed in 3 patients, atrial septal defect in 1 patient, rheumatic heart disease in 1 patient, there was no structural heart disease in the remaining 15 patients. The dimension of left ventricle was (51.1 ± 9.1) mm and the LVEF was $(59.4 \pm 13.9)\%$. In non-CAD group, fat replacement mainly occurred in septal region, presented as curvilinear band in 17 patients and patch in 3 patients. The location of fat replacement in this group is as follows: mid-septal region in 11 patients, distal-septal in 10 patients and apical in 9 patients. The intramural fat replacement was detected in 14 patients: subendocardial fat replacement in 10 patients and both intramural and subendocardial fat replacement in 4 patients.

Conclusions Left ventricular fat replacement could be documented in CAD patients, non-CAD cardiomyopathy patients and in patients without structural heart disease. Left ventricular fat replacement is often sited in the apical region in CAD patients as a consequence of infarct healing while mostly sited in septal region in non-CAD patients. The definite clinical implication of left ventricular fat replacement in non-CAD patients remains to be clarified.