

(2) Gated cardiac pool scintigraphy

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LEFT VENTRICULAR RESPONSE TO EXERCISE IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY: ASSESSMENT WITH RADIONUCLIDE CARDIOGRAPHY. T.Konishi, M.Yamamuro, K.Makino, T.Ichikawa, Y.Futagami, T.Nakano, H.Takezawa, Mie University, First Department of Internal Medicine, Mie.

Hemodynamic effects of exercise on left ventricular function in hypertrophic cardiomyopathy have been poorly understood. We have performed multistage supine ergometer exercise radionuclide cardiography in 20 normal subjects and 42 patients with hypertrophic cardiomyopathy. The patients with hypertrophic cardiomyopathy were divided into three groups according to the hemodynamic and morphological features: 15 cases with HOCM, 18 cases with HCM without obstruction, and 9 cases with apical hypertrophy (AHT). In normal subjects, left ventricular ejection fraction (LVEF) increased steadily with exercise (from $62 \pm 3\%$ to $74 \pm 5\%$). In AHT, LVEF increased with exercise (from $70 \pm 6\%$ to $81 \pm 4\%$) like that of normal cases. In HCM, LVEF increased in the early exercise stage (from $72 \pm 6\%$ to $74 \pm 7\%$) and became plateau in the late exercise stage. However in HOCM, LVEF declined progressively during exercise (from $80 \pm 7\%$ to $70 \pm 6\%$). Left ventricular peak systolic dv/dt value was lower at rest in normal subjects than the groups of hypertrophic cardiomyopathy, however during exercise, peak systolic dv/dt in three groups of hypertrophic cardiomyopathy was not different with that of normal group.

Left ventricular peak diastolic dv/dt during exercise was lower in three groups of hypertrophic cardiomyopathy than that of normal cases. The phase images in HOCM revealed an abnormal phase angle delay in the left ventricular apex, which indicate the lag of apical contraction. Reduction in LVEF and abnormal contraction delay in HOCM during exercise appear to be enhanced obstruction and loss of contraction at the outflow of the left ventricle due to inotropic stimuli.

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