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Condensed from 15 Years Ago:

Comparison of Wall Motion and Regional Ejection Fraction at Rest and During Isometric Exercise: Concise Communication

M. M. Bodenheimer, V. S. Banka, C. M. Fooshee, G. A. Hermánn and R. H. Helfant

*University of Pennsylvania School of Medicine,
Philadelphia, Pennsylvania*

The detection of regional abnormalities of left ventricular wall motion provides strong evidence for the presence of coronary heart disease. In 129 patients undergoing coronary arteriography, the relative value of radionuclide angiographic assessment of wall motion was compared with computer-generated regional ejection fraction, at rest and during handgrip exercise. Wall motion was determined by superposition of computer-derived end-diastolic and end-systolic perimeters. Relative regional ejection fraction was determined using a computer-generated 16-color isocount image that permitted

a quantitative assessment of zonal contribution to ejection fraction. Of the 129 patients, coronary arteries were normal in 31 and diseased in 98. Of 24 patients with single-vessel disease, wall motion abnormalities were present, at rest or during exercise in 15, whereas regional ejection fraction was detected in 20 patients. Seventy-four patients had multivessel disease. Of these, wall motion abnormalities occurred in 52 but regional ejection fraction was abnormal in 69 ($p < 0.01$). Overall, sensitivity was 67% by wall motion and 91% by relative regional ejection fraction ($p < 0.001$). Specificity was 94% by wall motion and 87% by regional ejection fraction (not significant). Thus, radionuclide angiographic assessment of regional ejection fraction during handgrip exercise is both highly sensitive and specific for coronary heart disease and significantly enhances detection of coronary heart disease compared with wall motion assessment, with little loss in specificity.

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