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VISUALIZATION OF LEFT ATRIAL MYOCARDIUM BY Tl-201 MYOCARDIAL SCINTIGRAPHY IN MITRAL STENOSIS.

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Tl-201 in a dose of 2mCi was given intravenously in 15 patients with mitral stenosis, and the image were collected 10 minutes after injection from 4 directions, namely modified LAO, LAO, ANT and L-LAT. Otherwise Tc-99m HSA in a dose of 20mCi was intravenously injected and the pooling images were obtained from same direction in order to determine the location of left atrium. To get the cause of the left atrial images, the ROI were established in the left atrium, left ventricle and lung, and the RI activity of each ROI were measured. Cardiac catheterization was performed for comparing the pressure data and valve area. Tc-99m-HSA in the atrium and ventricle was identified in pooling scan in each direction. In 8 of 15 patients, the left atrial image were able to obtain in L-LAT direction. No definite correlation was recognized in the pressure data, valve area, etc., however, the correlation with the duration of disease and the change of hemodynamics due to the complicated valvular affection could be considered.

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QUANTITATIVE DIAGNOSIS AND DISPLAYING METHOD ON THE EXPANDED VIEW OF THE LEFT VENTRICULAR WALL. —THE EXERCISE

TL-SCINTIGRAM INCLUDING REDISTRIBUTION IMAGES.—T.Ohtomo, H.Kunishige, M.Sakanaka, S.Urano, I.Kitamura, H.Tsuji and K.Takagi*, 3rd. Dep. Int. Med. and RI center*, Matsushita Hosp., Osaka.

To evaluate the degree and region for Tl-uptake in the LV wall, new computerized method was devised. 10 min. and 3hr. after the exercise, images from five projections, ie. Ant, LAO-30°, LAO-60°, L-Lat, and RAO-30° were taken respectively. After the routine smoothing and background subtraction, all images were divided into seven segments of 45° each and the segment included the apex was placed in the center of the fan-shaped figure. Each segmental uptake was normalized for maximum counts. The mean value and standard deviation (SD) were obtained from 20 normal subjects, and normal limits were defined as 2 SD. 3hr-images were dealt with the same way as 10 min. images. Normal, ischemic or infarcted segment was diagnosed by the corresponded uptake of these two images. The results were displayed on the oscilloscope as the map of the LV wall in color. In 23 cases, coronary stenosis >75% documented by CAG was diagnosed with accuracy of 91% in LAD and 96% in RCA respectively.

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NONINVASIVE DIAGNOSIS OF CORONARY ARTERIAL LESIONS BY EXERCISE THALLIUM-201 MYOCARDIAL PERFUSION IMAGING. K.Shiki, T.Abe, M.Okada, N.Kawai, H.Miyakoda and I.Sotobata. Nagoya University School of Medicine. Nagoya.

The value of exercise Tl-201 myocardial perfusion imaging (MPI) for identifying diseased arteries was evaluated in 57 effort angina patients without previous myocardial infarction. The territory of the individual major coronary artery on stress myocardial images was determined by analysis of the site of perfusion defects in 29 patients with single vessel or isolated left main disease. Ex MPI was sensitive for identifying the diseased artery in single vessel disease, the sensitivity being 86% for LAD, 66% for LCX and 71% for RCA. However, the sensitivity tended to decrease as the number of diseased vessels increased. An improved sensitivity was observed by analysis of the regional myocardial washout rate of Tl-201 in patients with triple vessel disease. The sensitivity increased, in general, with the severity of stenosis and it was lower for a less severely diseased artery in multiple vessel disease. The presence or absence of coronary collaterals seemed not to affect the sensitivity of Ex MPI. In conclusion, Ex MPI was considered to be a useful noninvasive technique to detect the diseased coronary arteries in patients with single vessel disease or the most severely diseased artery in patients with multiple vessel disease.

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AUTOMATED MEASUREMENT OF STRESS THALLIUM-201 SPATIAL DISTRIBUTION AND REGIONAL WASH-OUT RATIO. A.Tada, H.Bunko, K.Nakajima, O.Sui, J.Taki, T.Aburano, N.Tonami, K.Hisada and S.Matsushita*. Department of Nuclear Medicine and Internal Medicine, School of Medicine, Kanazawa University. Kanazawa.

To determine whether quantitative analysis of stress spatial distribution (E-R) and regional washout (W-R) of thallium-201 (Tl-201), developed automated circumferential profile program. 15 patients of normal 26 patients of CAD (with MI 13, without MI 13) were studied. Initial and delayed 3 hr. after injection images were obtained. The spatial distribution of Tl-201 was determined by maximum count per pixel in each 60 radii from left ventricular center. The regional washout ratio was calculated in each 60 points corresponded with initial and delayed images. Created normal limits of E-R and W-R from 8 normal patients. Compared with this normal limits curve, measured defect score.

RESULT

	visual	E-R	W-R	E-R or W-R
Sn	58%	77%	81%	96%
Sp	87%	73%	100%	73%
with MI	85%	100%	69%	100%
without MI	31%	54%	92%	92%

Sn: sensitivity
Sp: specificity