

193

USEFULNESS OF LEFT POSTERIOR OBLIQUE VIEW GATED POOL IMAGE FOR DETECTING LEFT VENTRICULAR WALL MOTION ABNORMALITY IN PERSONS WITH CORONARY ARTERY DISEASE. H.Wakamatsu, K.Atarashi K.Kishino and H.Kanaya. Kanaya HP, Sapporo.

For detecting left ventricular wall motion abnormalities (WMA), especially in inferoposterior portion, Fourier analysis (fundamental frequency) was applied to left posterior oblique (LPO) view in gated pool image (GPI). In this study, the scintillation camera with high sensitivity parallel hole collimator masked by Pb plate of aperture 20 cm ϕ was used for acquiring data in high count rate and avoiding of piling-up the pulse. Only in 17X17cm area LV image data was stored in 64X64 matrix of computer system at 32 frames per cardiac cycle. We evaluated WMA in a typical phase pattern of apical, inferior, anteroapical and inferoposterior segment in LAD or LPO view. In eleven of 12 patients with right (R) coronary disease confirmed angiographically, detection of posterior WMA in LAO view was difficult by hiding of anterior wall motion, but in LPO view was easily clarified. In single (left anterior descending (LAD) or R), the ability of detecting the anterior WMA in LAO view was more useful than in LPO view, but the posterior WMA in LPO view was more useful than in LAO view. In a case of two (LAD and R) vessel disease, LAO and LPO view demonstrated the anterior and posterior WMA clearly. Therefore, a statistical high quality GPI should be performed routinely in LAO and LPO view.

194

DETECTION OF REGIONAL WALL MOTION ABNORMALITIES IN THE PATIENTS WITH MYOCARDIAL INFARCTION BY MULTIDIRECTIONAL GATED BLOOD POOL SCAN. K.Nakagawa, T.Nishimura, K.Hayashida, T.Uehara and T.Kozuka. National Cardiovascular Center, Osaka.

Regional wall motion abnormalities in the patients with myocardial infarction (MI) were evaluated by left lateral view (L-LAT) and 30 degree left posterior oblique view (LPO) in addition to conventional anterior view (ANT) and 45 degree left anterior oblique view (LAO). There were 35 cases of anterior MI, 15 cases of inferior MI, 16 cases of antero-inferior MI and 14 cases of normal patients. Each view was divided into five segments and the score of wall motion was evaluated by semi-quantitative method with four grades from normal=1 to dyskinesis=4. Inferoposterior wall motion abnormalities were demonstrated more clearly in L-LAT and/or LPO than ANT.

The sensitivity of inferoposterior MI was improved from 58% in the routine bidirectional study (ANT & LAO) to 81% in the tridirectional study (ANT, LAO & L-LAT) and to 77% in the other tridirectional study (ANT, LAO & LPO). Our conclusion is that tridirectional study (ANT, LAO & LPO) should be performed in the investigation of myocardial infarction by the gated blood pool scan.

195

ANALYSIS OF CLINICAL USEFULNESS OF Tc-99m-PYROPHOSPHATE MYOCARDIAL SCINTIGRAPHY AND MULTI-GATED CARDIAC BLOOD POOL SCAN IN ACUTE MYOCARDIAL INFARCTION. A.Yamashina, N.Hayashida, and M.Igarashi. St.Luke's International Hospital, Tokyo

To determine the clinical usefulness of two different nuclear methods of Tc-99m-pyrophosphate myocardial scan (PYP) and multi-gated cardiac blood pool scan (MUGA) in patients with acute myocardial infarction (AMI), we analyzed their complication rate, sensitivity for the detection of the infarcted myocardium, clinical impact on the diagnosis or patient management. PYP was performed in 54 patients with AMI, and MUGA was performed in 47 patients with AMI. The rate of complication with these tests were 2/54 (4%) in PYP and 0/47 (0%) in MUGA. Sensitivity was 51/54 (94%) in PYP and 44/47 (94%) in MUGA. Although complication rate, sensitivity, impact on the diagnosis were not significantly different between these two tests, clinical impact of MUGA to the patient management was significantly higher (34/47; 72%) than that of PYP (3/56; 5%). Further, PYP rendered adverse impact in 5/56 (9%), where MUGA rendered only 1/47 (2%).

Thus, we conclude that MUGA is a quite useful test in patients with AMI especially for the patient management; however, the usefulness of PYP in patients with AMI is fairly limited and its indication should be restricted.

196

THE RELATIONSHIP OF THE RADIONUCLIDE VENTRICULOGRAPHY AND ECG INDICATORS IN ACUTE MYOCARDIAL INFARCTION. E.Kinoshita, N.Kanemoto, C.Imaoka, M.Ide, Y.Goto and Y.Suzuki. Tokai University, Isehara.

This study investigated left ventricular function of the patients with acute myocardial infarction (AMI) from 12 leads electrocardiography (ECG), which is popular examination.

Subjects were 64 patients with mean age of 59 years. ECG parameters such as QRS score described by Palmeri et al, sum of amplitude of R wave (ER) and Q wave (EQ), number of Q waves (Qn), coronary T waves (Tn), and sum of Q wave duration (Qd) were compared with left ventricular ejection fraction (LVEF) obtained from radionuclide ventriculography.

The correlation between LVEF and QRS score, ER, EQ, Qn, Tn, Qd, were -0.77 ($p < 0.01$), -0.40 ($p < 0.01$), 0.40 ($p < 0.01$), -0.54 ($p < 0.01$), -0.26 ($p < 0.05$), -0.49 ($p < 0.01$), respectively. These results were significant statistically.

We conclude that some indicators obtained from 12 leads ECG considerably revealed left ventricular function. Particularly, QRS score described by Palmeri et al showed fairly good correlation with LVEF to the extent useful for bedside monitoring in patients with acute myocardial infarction.