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DIPYRIDAMOLE SCINTIGRAPHY USING SINGLE-PHOTON COMPUTED TOMOGRAPHY IN THE EVALUATION OF DILATED CARDIOMYOPATHY. H. Shiotani, M. Ohnishi, T. Mori, Y. Kanoh, Y. Ohmori, K. Maeda, Y. Yokota and H. Fukuzaki. Kobe University School Of Medicine, Hyogo.

Twenty four patients including 18 with dilated cardiomyopathy (DCM) and 6 with valvular heart disease (VHD) were examined by dipyridamole thallium-201 emission computed tomography (SPECT) for assessment of coronary circulation in patients with DCM. Dipyridamole SPECT was compared with the reperfusion imaging obtained approximately 2 to 3 hours after dipyridamole. During maximal inducible coronary vasodilation (dipyridamole, 0.56 mg/kg), perfusion defect was observed in all of 24 patients. Reperfusion was found in 8 patients with DCM (45%), but not found at all in patients with VHD. Of those patients with DCM, LV function in patients with reperfusion was better preserved, compared with that in patients without reperfusion (%FS; 24.7 ± 7 vs 18 ± 5 ; $p < 0.05$). In conclusion, dipyridamole SPECT provides useful information for coronary circulation in patients with DCM.

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MEASUREMENT OF EDLV & ESLV BY GATED CARDIAC BLOOD POOL SCAN (SPECT) AND EVALUATION OF REGIONAL WALL MOTION.

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Our experience evaluating EDLV & ESLV BY SPECT was reported. We evaluated the left ventricular function by ejection count image (ED image - ES image), and 3-D image.

Subjects were 23 patients, Myocardial Infarction 8 cases, Angina Pectoris 3 cases, H C M 1 cases, ... Normal 3 cases.

We obtained ECG gated ED & ES images, and by short axis image (ED, ES) we determined the left ventricular contour. (isocount of Max count about EDLV) and piled ^{40%} 32 slices.

By this method, we obtained EDLV & ESLV and compared the X-ray Angiography. (EDLV; $r = 0.95$, $y = -4.65 + 1.10x$; ESLV; $r = 0.69$, $y = 9.16 + 0.69x$). There was a good relationship between 2 methods. We can easily evaluate the regional wall motion by ejection count images and 3-D images (piling the ED images & ES images).

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CLINICAL AVAILABILITY OF THE CARDIAC FUNCTIONAL IMAGING BY FOURIER PHASE ANALYSIS USING GATED BLOOD-POOL EMISSION COMPUTED TOMOGRAPHY. T. Nakata, M. Inoue, A. Hashimoto, S. Tanaka, O. Iimura, *T. Tsuda, *M. Kubota, *S. Takahashi, **T. Takada. Second Department of Internal Medicine, *Department of Radiology, Sapporo Medical College, Sapporo. **Hakodate Goryokaku Hospital, Hakodate.

Using multigated blood-pool emission computed tomography (pool ECT), the cardiac functional images derived from Fourier phase analysis could be created three-dimensionally and enabled us to evaluate the regional wall motion exactly and easily. In nineteen patients with myocardial infarction, we could identify the abnormal functions in their lesions with the better sensitivity (87%), specificity (78%) and accuracy (82%) by this method compared with those by contrast ventriculography. In case of the patient with hypertrophic obstructive cardiomyopathy, the damage in diastole was severer especially in the left ventricular outflow tract, judging from the functional images of PFR and TPF in the sagittal and four chamber sections. So, we concluded that the cardiac functional images of pool ECT were very available to evaluation of the regional wall motion in cardiac diseases.

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ECG GATED BLOOD POOL SPECT FOR EVALUATION OF REGIONAL WALL MOTION OF MYOCARDIAL INFARCTION. Y. Fujiwara*, J. Doiuchi*, K. Nishimura*, T. Kokubu**, T. Mochizuki*, M. Miyagawa*, K. Murase**, N. Harada**, M. Ishikawa**, M. Koizumi** and K. Hamamoto**. * Ehime Kenritsu Imabari Hospital ** Ehime University School of Medicine, Ehime.

ECG gated blood pool single-photon emission computed tomography (SPECT) was performed in 7 patients with previous myocardial infarction in order to evaluate regional wall motion of left ventricle. SPECT was collected using a single-head rotating gamma camera and transaxial tomographic images were reconstructed. The cardiac RAO long axis view, 4 chamber view and short axis view were reconstructed from the transaxial images. End diastolic (ED) and end systolic (ES) images by MUGA method and ED-ES overlapped images were compared with two-dimensional echo cardiographic (UCG) images.

Conclusion:

- 1) Wall motion abnormality (WMA) compared SPECT to UCG 37 of 64 segments (58%) had the same grade of WMA
- 2) ED-ES overlapped images by SPECT was a useful method to detect asynergy of LV segmental wall motion.
- 3) Three dimensional evaluation with RAO long axis, 4 chamber view and short axis view could provide topographic information accurately.