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EVALUATION OF APICAL DEFECT ON THALLIUM-201 MYOCARDIAL SCINTIGRAPHY USING OF MYOCARDIAL PERFUSION MAP. I.Adachi, H.Akamatsu, S.Yoshikawa, T.Ogata, M.Takeuchi, T.Kawai, H.Akagi, \*K.Takada and \*\*J.Kusukawa. Dept. of radiology, \*1st and \*\*3rd dept. of int. med. of Osaka Medical School, Takatsuki, Osaka.

It was difficult that we assessed Tl defect of apex using short axial view of myocardial scintigraphy. We estimated Tl defect of apex using myocardial perfusion map (Bullseye), it was reconstructed by the continuous slices of short axial view.

Tl-201 myocardial scintigraphy was performed in 51 patients with 23 old myocardial infarction (OMI), 10 old myocardial infarction with angina pectoris (OMI+AP), 13 angina pectoris, 4 dilated cardiomyopathy (DCM), and 1 others.

We studied SPECT and planar imaging of Tl-201 myocardial scintigraphy, and reconstructed Bullseye using short axial view of SPECT.

Tl defect of apex was detected by the Bullseye in 35 patients with 19 OMI, 5 OMI+AP, 8 AP, 2 DCM and 1 others.

In spite of Bullseye to be reconstructed using short axial view, 69% of Tl defect of the apex was detected in this method.

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ASSESSMENT OF NON-INVASIVE CORONARY RESERVE BY TWO-SUCCESSIVE IMAGING METHOD USING THALLIUM-201. T.Tsuda, M.Uruma, K.Kodera, T.Yamamoto, A.Shibata, \*M.Kimura, \*I.Odano, \*K.Sakai, \*\*H.Hama and \*\*T.Mitani. The First Department of Internal Medicine and \*Department of Radiology, Niigata University School of Medicine, Niigata. \*\*Kido Hospital, Niigata.

Non-invasive coronary reserve (CR<sub>N</sub>) was examined by two-successive imaging method using thallium-201 and compared with invasive method (CR<sub>I</sub>). CR<sub>N</sub> was calculated using Tl myocardial uptake counts before and after dipyridamole loading (0.568mg/kg), and mean aortic blood pressure. CR<sub>I</sub> was calculated using coronary blood flow by thermodilution method. Patients studied were 7 with coronary artery disease (CAD), 12 with HCM, 4 with hypertensive heart disease (HHD) and 5 control (C). Among them, CR<sub>I</sub> was examined in 8 patients. CR<sub>N</sub> was 1.48±0.30 in infarcted CAD, 1.38±0.25 in non-infarcted CAD, 1.68±0.25 in HCM and 1.63±0.49 in HHD, respectively. They were significantly lower than that (2.97±0.50) in C (P<0.01-0.001). There was significant positive correlation between CR<sub>N</sub> and CR<sub>I</sub> (r=0.71, P<0.05). In CAD, regional CR<sub>N</sub> could be calculated. In conclusion, CR<sub>N</sub> was effective method in assessment of coronary reserve.

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SEGMENTAL MYOCARDIAL PERFUSION AFTER AORTO-CORONARY BYPASS SURGERY; ASSESSMENT BY DIPYRIDAMOLE-LOADING MYOCARDIAL SCINTIGRAPHY. N.Hamashige, Y.Doi, H.Odawara, Y.Yonezawa, O.Kuzume, T.Chikamori, T.Ozawa, N.Akagi, S.Yoshida and T.Maeda. Kochi Medical School, Kochi.

To evaluate the change in segmental myocardial perfusion after aorto-coronary bypass surgery, dipyridamole-loading myocardial scintigraphy was performed before and early after operation in 24 patients, and percent change of Th-201 uptake was calculated in 72 areas of the 45° LAO view. ① In 42 areas with patent graft or no significant lesion, 34(81%) areas showed improved (>+25%) uptake, and there was no residual defect. In 30 areas with unopacified graft by CT or significant lesion without graft, 14(47%) areas showed worsened (<-25%) or unchanged uptake, and there were 8(27%) areas with new infarction or residual ischemia. ② Percent change of uptake and change of washout rate were coincidental in most areas. The former seems to be a more reliable indicator of segmental perfusion, because 3 out of 5 peri-operative infarctions were associated with improved washout but worsened or unchanged uptake. ③ Follow-up study one year after operation, performed in 16 patients, reconfirmed the reliability of percent change of uptake with 83% agreement with the results of early post-operative study. Some disagreements could be explained by late graft occlusion or improvement of peri-operative LV dysfunction.

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MECHANISM OF Tl-201 MYOCARDIAL PERFUSION DEFECTS BY RIGHT VENTRICULAR PACING. --IN RELATION TO LEFT VENTRICULAR ABNORMAL MOTION. T.Ando, K.Imai, S.Yumikura, N.Tanigawa, S.Saito, Y.Ozawa, M.Hatano, K.Hagiwara and R.Kamata. Nihon Univ. Dep. of 2nd Internal Medicine and Radiology, Tokyo

Tl-201 myocardial perfusion defect is present on septum & at apex in patients with right ventricular pacing (RVP) frequently. But its mechanism is not clear yet, so we investigated whether this defect is related to left ventricular abnormal motion. In six patients with permanent RVP due to sick sinus syndrome, we evaluated left ventricular function during pacing on or off by using RI-angiography (RI-A) in LAO view. The left ventricle was separated to 8 segments, and the regional EF, ES, Peak filling rate (PFR) were measured in each segments. The each values were compared with the segment "6" value that is one of post-lateral (PL) segments. By pacing, rEF are 87.8% on PL and 52.4% on septal (S) segment. rPFR: 87.3% on PL 49.4% on S. TPF: 75.3% on PL, 82.75% on S. Coronary blood flow are related to resistance of vessel bed. On septum, the duration of contraction was prolonged because the starting of relaxation was delayed, furthermore the PFR was impaired significantly by pacing. These becomes a functional ischemia on septum, and then attributes to Tl-myocardial perfusion defect by pacing.