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MYOCARDIAL SCINTIGRAPHY OF HYPERTROPHIC CARDIOMYOPATHY-CLINICAL SIGNIFICANCE OF REDISTRIBUTION-. M.Uruma,K.Ojima,T.Tsuda,Y.Aizawa,Y.Arai,A.Shibata. First Department of Internal Medicine,Niigata University School of Medicine. M.Kimura,I.Onoda,K.Sakai. Radiology,Niigata University School of Medicine. T.Mitani and H.Hama. Kido Hospital, Niigata.

Using exercise myocardial scintigraphy, we had experienced some patients of hypertrophic cardiomyopathy (HCM), who showed redistribution. To evaluate the clinical significance of the redistribution in HCM, we compared clinical and hemodynamic data of nine patients who showed redistribution (Group A) with those of nine patients who showed no hypoperfusion area (Group B). One patient in Group A had low perfusion but no redistribution. CTR in Chest X-ray and IVS thickness in echocardiogram were significantly larger in Group A than Group B. (CTR: $p < 0.05$, IVS thickness: $p < 0.01$) Redistribution areas were not limited to hypertrophied anteroseptal wall, but it was found in other areas. The numbers of redistribution areas were 3 in anterior septum, 3 in anterior wall, 5 in lateral wall, 3 in inferoposterior wall, and 1 in apex. Since myocardial degeneration and/or fibrosis is common in HCM, the hypoperfusion may be related to the myocardial degeneration or fibrosis. The mechanism of redistribution in HCM is to be studied, but seems to be related to the severity of HCM.

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EVALUATION OF RIGHT VENTRICULAR DILATED CARDIOMYOPATHY WITH THALLIUM-201 MYOCARDIAL SCINTIGRAPHY AND GATED CARDIAC BLOOD POOL SCINTIGRAPHY. K.Kanno, K.Kasahara, K.Namai, T.Yamauchi, T.Ichihara, K.Uruga and H.Takahashi*. Dep. of Internal Medicine and Radiology*, Iwaki-Kyoritsu General Hospital, Fukushima.

Four cases of Right Ventricular Dilated Cardiomyopathy (RVDCM) were studied by Tl-201 myocardial scintigraphy (Tl scinti.) and gated cardiac blood pool scintigraphy (pool scinti.). Five patients with right ventricular volume overload (RVVO) (atrial septal defect) and 4 with pressure overload (RVPO) (3: pure mitral stenosis, 1: multiple pulmonary thromboembolism) were also evaluated for a comparative study. In Tl scinti., RV free wall was visualized in all cases. RV/LV diameter ratios and RV/LV Tl-201 uptake ratios were obtained from LAO 45° or LAO 60° view of Tl scinti. RV/LV diameter ratio of RVVO (1.31 ± 0.22) was greater than RVDCM and RVPO (1.12 ± 0.22 , 0.88 ± 0.10 , respectively). The shape of interventricular septum was straight in 3 cases of RVPO, but convex to right ventricle in cases of RVVO and RVDCM. RV/LV Tl-201 uptake ratio was not different significantly between each group. Partial perfusion defect was recognized in one case of RVDCM. In pool scinti., LV wall motion was good but that of RV was reduced in RVDCM. In conclusion, Tl scinti. and pool scinti. could serve as a non-invasive means for assessment of RV shape and function of RVDCM.

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DECREASED CORONARY RESERVE IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY. -STUDY USING SPLIT DOSE THALLIUM-201 DIPYRIDAMOLE IMAGING TECHNIQUE-. R.Yamaguchi, M.Ifuku, M.Itaya, H.Takahashi, Y.Koga, N.Utsu, H.Toshima, S.Morita*, M.Hirashima**, M.Takagi**, K.Kawakami**, Y.Shimokawa**. The 3rd Dept. of Int.Med. and *Dept. Radiol., Kurume University, Kurume. **Yame Public Hospital, Yame.

To assess abnormality of the small coronary artery in patients with Hypertrophic cardiomyopathy (HCM), Dipyridamole (DP) 0.5 mg/Kg was injected in 22 patients with HCM and 13 healthy controls. Two Thallium-201 myocardial images were taken before and after DP, injecting 2mCi of Thallium-201 separately. An increase in myocardial Thallium uptake after DP was then calculated as an index of coronary reserve (CRI). Patients with HCM showed significantly lower CRI ($173 \pm 50\%$) than controls ($281 \pm 46\%$), suggesting small coronary artery lesions. HCM patients with abnormal CRI (below mean-2SD of controls) demonstrated significantly greater septal thickness, lower exercise tolerance (greater FAI) and lower ejection fraction. Therefore abnormal small coronary artery, suggested by decreased CRI, seemed to be an important factor relating to impaired cardiac performance in patients with HCM.

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QUANTITATIVE ESTIMATION OF THE RIGHT VENTRICULAR OVERLOAD ON Tl-201 MYOCARDIAL SCINTIGRAPHY IN PATIENTS WITH VARIOUS RESPIRATORY DISEASES -COMPARISON OF PULMONARY HEMODYNAMIC FINDINGS-. J.Hirayama, T.Kabayashi, M.Hongo, T.Fujii, S.Kusama, K.Hirano and K.Yano. The 1st Dept. of Internal Medicine, Division of Radiology, Shinshu University Hospital, Matsumoto.

For evaluation of the right ventricular (RV) overload, Tl-201 myocardial scintigraphy was performed in 18 patients with various respiratory diseases, and quantitative assessment of it was studied to compare these results with pulmonary hemodynamic findings.

On intravenous administration of Tl-201, initial transit of the tracer through the heart and the subsequent static image were recorded in LAO 30° using a scintillation camera coupling to a small digital computer.

The radioactivity of total injected dose of Tl (T) was calculated from the radio-nuclide angiocardigram, and that of RV (R) and LV plus septum (L) was done from the static image, on which the angiocardigram showing RV was superimposed. By these procedures, RV or LV uptake ratio of Tl-201 was calculated by ratio R or L to T. (Rt, Lt)

Results 1) Rt and Lt/Rt were well correlated with MPAP, RVSP and PAR, respectively. 2) There was a significant difference between MPAP in RVH group ($Rt \geq 1.5$, $Lt/Rt \geq 2.6$) and that in no RVH one. 3) Both Rt and Lt/Rt were useful in the diagnosis of pulmonary hypertension ($MPAP \geq 25$ mmHg).