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REGIONAL WALL MOTION ABNORMALITY IN PATIENTS WITH DILATED CARDIOMYOPATHY.-BY MEAN OF COMPARISON WITH THAT IN PATIENT WITH OLD MYOCARDIAL INFARCTION.-S.Hayashi,T.Tsuda,K.Ojima,M.Uruma,T.Nagai,K.Watanabe,Y.Yazawa,Y.Arai,A.Shibata,T.Mitani* and H.Hama*. First Department of Internal Medicine, Niigata University School of Medicine, Niigata,*Kido Hospital.

This study evaluated a characteristic regional wall motion (RWM) abnormality in patients with dilated cardiomyopathy (DCM) by mean of comparison with that in patients with old myocardial infarction (OMI). Materials were 7 patients with DCM, 26 patients with OMI and 8 healthy controls. By use of the gated RI angiogram, we divided the left ventricular LAO 45° image into 8 sections, and analysed from 2 aspects: 1) wall movement and 2) phase abnormality. We classified the regional wall motion into 5 typical forms as follows: N: Normal, I: The wall movement decreased, but no phase delay was recognized. III: The wall movement did not decrease, but phase delay was recognized. IV: The wall movement decreased and phase delay was recognized. 5 types were recognized in patients with OMI. But N, III and IV types were less frequency, then I and II types were more common in patients with DCM than in patients with OMI. And following results were obtained. 1) Few patients with DCM had sections of normal RWM. 2) Mainly RWM abnormality in patients with DCM were small wall movement, and few sections of phase delay were recognized. 3) Low LV function in patients with DCM were not due to asynergy but small movement of entire LV wall.

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EVALUATION OF RIGHT VENTRICULAR PERFORMANCE BY ECG-GATED CARDIAC BLOOD POOL SCINTIGRAPHY IN PATIENTS WITH TETRALOGY OF FALLOT AFTER RADICAL OPERATION.

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In order to evaluate right ventricular performance in patients with Tetralogy of Fallot (TOF) following radical operation, we studied 10 patients by means of ECG-gated cardiac blood pool scintigraphy before and after operation.

Using global time-activity curves, the phase angle at fundamental frequency were calculated, and emptying patterns of the right and left ventricle (RV, LV) were evaluated by phase difference [D(phase) = RVphase minus LVphase]. D(phase) with normal cardiac function was minimal (mean 1.7 ± 5.8), meanwhile D(phase) with TOF before operation was large (mean 25.9 ± 8.5).

Following radical operation, the RV/LV pressure ratio correlated well with D(phase). The linear correlation coefficient is 0.831. It is acceptable that D(phase) represent the right ventricular performance after radical operation. In poor correction group (RV/LV ≥ 0.65), D(phase) was unchanged after operation ($24.0 \pm 5.6 \rightarrow 21.8 \pm 5.8$). In good correction group (RV/LV < 0.65), D(phase) was remarkably decreased after operation ($27.8 \pm 11.9 \rightarrow 9.0 \pm 6.1$).

Patients whose D(phase) was not so much decreased after operation have a tendency to fall into right ventricular failure.

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RVEF BY E.C.G.GATED FIRST PASS METHOD.

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E.C.G. gated first pass method was used for calculating RVEF, and compared with the conventional first pass and pool method. The results were as follows.

- 1, RV was well differentiated.
- 2, Back ground was low enough.
- 3, Higher R.I. count was taken than by conventional first pass method.
- 4, Higher RVEF was calculated then by the other two methods.
- 5, RVEF calculated by E.C.G. gated first pass methods was $61 \pm 7\%$ in normal control.

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COMPARISON OF RIGHT VENTRICULAR FUNCTION BETWEEN DILATED CARDIOMYOPATHY (DCM) AND ISCHEMIC CARDIOMYOPATHY (ICM) USING GATED BLOOD POOL STUDY. H.Tabuchi,T.Ohkubo,H.Kataoka,S.Takaoka,K.Nakamura and S.Hashimoto. The 2nd Dept. of Int. Med., Kagoshima University School of Medicine, Kagoshima.

The prevalence of the right ventricular (RV) dysfunction and its pathophysiological mechanism was compared between DCM and ICM. Gated cardiac blood pool scan using Tc-99m was performed in 8 normal subjects, 13 DCM and 15 ICM. Abnormality of the regional wall motion and phase image of the RV was evaluated visually. RV ejection fraction was obtained from count method. RV end-diastolic volume index (RV EDVI) was drawn from the following formula; $RV EDVI = LVEDVI \times (RV \text{ end-diastolic count}) / (LV \text{ end-diastolic count})$, whereas LVEDVI was obtained from M-mode echocardiogram by Teichholz's method.

(1) The incidence of the RV wall motion abnormality (RVWMA) tended to be high in DCM (11/13, 84.6%) than in ICM (7/15, 46.6%) ($p < 0.1$). Of the subjects with RVWMA, two patients in DCM (2/11, 18.9%) and three in ICM (all of them had a history of inferior myocardial infarction due to proximal RCA disease) (3/7, 42.8%) demonstrated regional phase delay of the RV. (2) Among the patients with RVWMA, elevated pressure of the pulmonary artery was more prevalent in ICM (6/7, 85.7%) compared with DCM (3/11, 27.2%). (3) RVEF was lower in DCM and ICM than in normals. (4) RV EDVI was large in DCM (106.6 ± 22.3) compared with normals (86.3 ± 22.7 , $p < 0.01$) and ICM (86.4 ± 30.7 , $p < 0.1$).

We concluded that patients with DCM frequently accompanies the dilated RV with wall motion abnormality due to primary RV dysfunction, while RV dysfunction of the ICM is secondary to increased after-loading and/or proximal RCA disease.