AN EVALUATION OF REGIONAL VENTRICULAR WALL MOTION USING THREE DIMENSIONAL DYNAMIC PATTERN ANALYSIS (3DPA) METHOD.

This study was undertaken to evaluate the clinical usefulness of three dimensional dynamic pattern analysis (3DPA) which we had developed for a more detailed analysis of multigated cardiac pool SPECT data.

Twelve cases were examined in this study. They were five healthy volunteers, three patients with myocardial infarction (MI), three with hypertrophic cardiomyopathy (HCM) and one with dilated cardiomyopathy (DCM). Data were collected from 64 directions over 360° using ZLC 7500 - Scintipac 2400 system, and multigated cardiac pool SPECT images were reconstructed. After creating the short-axis, horizontal long-axis and vertical long-axis images of right and left ventricles, the loci of contour, long axis and center of long axis in each frame image were depicted on a CRT as 3DPP. Also, three dimensional display of the short-axis images at the end diastole and the end systole was depicted. In healthy volunteers, good regional cardiac function was observed. In patients with MI, HCM or DCM, abnormal regional wall motions were observed according to their sick conditions.

DETECTION OF LEFT VENTRICULAR ASYNERGY BY CARDIAC BLOOD POOL ECT USING SUBTRACTION METHOD.

Left ventriculography by cardiac catheter is invasive and two-dimensional. And conventional cardiac blood pool scintigraphy is taken from only LAO view, therefore it is difficult to detect left ventricular asynergy in apex and inferior wall. In order to evaluate left ventricular regional wall motion, ECG-dual gated cardiac blood pool ECT was performed in patients with ischemic heart disease and normal control (total 20 cases). Following conventional equilibrium blood pool method, SPECT was performed from TI-201 myocardial ECT. Thus, we concluded this study is useful for evaluation of ventricular asynergy.

THE CLINICAL UTILITY OF VENTRICULOGRAPHY (RVNG) WAS EVALUATED IN ACUTE MYOCARDIAL INFARCTION. The subjects consisted of 25 antero-septal myocardial infarction and 25 inferior myocardial infarction patients. We got follow up radionuclide study during the recovery period at first 30th hospital day. Right ventricular (RV) infarction was documented in 15 out of 25 acute inferior infarction, but nothing in anterior infarction. With RV infarction, the mean RVEF was very low 28±8% at the initial day. But at 7-14 days, 30 days after the attack, the mean RVEF had remarkably improved to 36±9% and 39±9% respectively. Regional wall motion abnormalities disappeared 10 of 15 patients at 30 hospital day. In antero-septal infarction patients, there are no evidence of RV infarction. The mean RVEF did not change through follow up study (41±8%→44±8%). The mean LVEF was increased from 42±15% to 47±16% at 30 hospital day. We concluded that RV infarction was popular complication in patients with acute inferior infarction. But RVEF and RV regional wall motion abnormalities improved dramatically within a month. These findings supported that RV myocardium had peculiar coronary perfusions.