mentioned, 4 patients with congenital heart disease, 3 patients of postcardiac surgery, 2 normal volunteers). Both early and delayed LAO30° views were used to evaluate changes in focal ^{201}Tl accumulation according to time in rest.

Twelve out of 40 patients showed right ventricular wall delineation, and nine out of 40 patients showed change in focal activity (usually area of decreased activity) between early and delayed LAO30° views. All patients other than infarction who showed area of decreased activity included apex. This was thought to be due to the fact that apex was periphery in coronary circulation. In 12 patients of right ventricular wall delineation, 10 had congestive heart failure, and in 30 patients without CHF 28 did not show right ventricular wall. Overall acuity of right ventricular wall delineation was 95%. In 6 patients who showed increased focal activity in delayed scan, 5 showed no organic change, and in 3 patients who showed decreased focal activity, 2 showed presence of organic change. Overall acuity in terms of organic change was 78%. With 6 view images all parts of myocardium was able to delineate tangentially and localization of any abnormal myocardial areas were possible. No acute adverse reaction due to toxicity of ^{201}Tl was detected in any of 40 patients.

Tl-201 Scintigraphy for Myocardial Imaging

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TI-201 scintigraphy was performed in several disorders. Starting 10 minutes after intravenous injection of 2.0 mci of TI-201, scintiphotos were obtained in five different views (anterior, left lateral, 30, 45 and 60 degree left anterior oblique). Images were obtained with a Toshiba gamma-camera GCA-202. The energy spectrum used was 75 keV ±30%.
Studies were performed in 14 patients with acute or myocardia infarction, 6 with angina pectoris, 5 with cardiomyopathy, 7 with congenital heart disease, 6 with mitral stenosis and 5 with other disease.

Scintiphotos showed a defect in 6 of 8 patients with acute myocardial infarction and in 5 of 6 patients with old myocardial infarction. There was a good agreement between electrocardiographic and scintigraphic location of the infarction. Scintiphotos showed no defects in patients with angina pectoris at rest.

Scintigraphy was also performed in patients with pressure or volume overload of the right ventricle such as ASD, PS and Tetralogy of Fallot. The right ventricle was fairly well visualized in those cases. Since with TI-201 the normal right ventricle is barely or not visualized, good visualization of the right ventricle per se may indicate the presence of the pressure or volume overload of the right ventricle. Also, in patients with heart failure or cardiomyopathy, scintigraphy will provide objective criteria of hypertrophy and/or dilatation of the right ventricle.

Myocardial Imaging in Idiopathic Cardiomyopathy Using Thallium-201

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The purpose of this presentation is to evaluate the clinical validity of myocardial imaging using i.v. injection of Thallium-201 (^{201}T1) in patient with idiopathic cardiomyopathy.

23 cases of idiopathic cardiomyopathy (ICM), including 8 cases of hypertrophic obstructive type

(HOCM), 6 cases of hypertrophic non-obstructive type (HCM) and 9 cases of congestive type (CCM) and 5 normal healthy subjects, were chosen for this study.

On 30°LAO view, thickness of septal and LV free wall were assessed by two methods, i.e. direct measurement on Polaroid film and calculation from profile through the mid point of LV long axis. Relative myocardial activity (RMA) was calculated by following equation,

$$RMA = \frac{Au\,(LV) - Au\,(Lung)}{Au\,(Lung)}$$

where, Au indicated mean counts per unit area.

In summary, 1) RMA was higher in ICM group as compared to normal subjects. In one case of CCM group with recurrent history of congestive heart failure, RMA did show definitely lower value. 2) Septum to LV free wall thickness ratio was higher in HOCM group than other types of ICM and normal subjects, but not as much higher as reported by others.

A Basic Study on Clinical Use of Tl-201 Myocardial Scintigraphy

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Myocardial imaging with Tl-201 and a scintillation camera was studied experimentally using special designed phantoms and clinically in 23 patients with myocardial infarction or other heart diseases. Then, the following results were obtained:

1. Images of the converging collimator at the 75-keV photopeak revealed considerably higher accumulative count-rate and relatively higher quality than those of the other detecting conditions.
2. It was necessary to take images as many as possible in various projection, in order to detect the location and size of the myocardial ischemic lesion, because the lesion was demonstrated as defect clearly only in profile.
3. On the basis of observation of serial images after injection, it was evident that the images taken between about 25 min. and about 90 min delineated the myocardium more clearly than those in the other period.
4. Normal images taken in 8 patients without ischemic heart disease appeared in the shape of doughnut or horseshoe, demonstrating mainly the left ventricular myocardium. In addition, the image was faint in the region of the aortic or mitral valve and thin in the region of the apical wall. On the other hand, the image of the right ventricular wall was sometimes recognized faintly.
5. In 11 of 12 patients with old myocardial infarction, the location and size of the lesion was detected sufficiently by this examination, compared with the findings of the electrocardiogram.

Study on Scintigraphy in Myocardial Infarction with ^{99m}Tc-PYP and ^{201}Tl-Cl

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We examined myocardial infarction with 99m-technetium stannus pyrophosphate (^{99m}Tc-PYP) scintigraphy and thallium-201 (^{201}Tl-Cl) scintigraphy. Twenty six patients (4 women, 22 men) were examined. The age range was from 42 to 72 years old (mean: 58 years old.) Standard 12-