A coordinate system which had its origin at the endsystolic center of axes.

Nine patients with old myocardial infarction were analyzed by this computerized method. The results thus obtained were consistent with those obtained by manual tracing of left ventricular images. However, there were some cases in which it was difficult to delineate the posterobasal portion of left ventricular image because of the presence of left atrium. In conclusion this computerbased edge detection appears very useful to quantify segmental shortening of left ventricle without interobserver variation.

**Study of Left Ventricular Function by the High Temporal Resolution Analysis Method**


*Department of Nuclear Medicine and Radiological Sciences*

*Tokyo Metropolitan Geriatric Hospital*

Functional parameters of left ventricle estimated as follows; a) Ejection fraction (EF) b) Maximum systolic volume velocity (MSVV): maximum value of (dV/dt)/V in the systolic phase. c) Maximum diastolic volume velocity (MDVV): maximum value of (dV/dt)/V in the diastolic phase. d) Time of end-systole (T_E): times between end-diastole & end-systole. e) Time of MSVV (T_M): times between end-diastole & MSVV. f) Time of MDVV (T_D) g) T_D-T_M h) T_D-T_E and i) T_E-T_M.

Subjects: Normal 27 cases, 13 myocardial infarction, 5 angina pectoris, 7 valvular diseases, 7 other cardiac diseases and 3 other diseases.

Results: 1) EF was independent on R-R interval. 2) MSVV & MDVV depend on R-R intervals respectively. 3) T_D depends on R-R interval, but T_E slightly depends on it. The regression curve of T_D in normal case was obtained. T_D values of myocardial infarction localized on the upper side of this curve, while T_D values of valvular diseases localized on the lower side. 4) (T_D-T_E) shortened in MR, while it prolonged in AR. 5) In various diseases (T_D-T_E) was plotted along Y-axis and (T_E-T_M) was plotted along X-axis. These parameters distributed around Y=X line in normal case, above its line in the cases of myocardial infarction, angina pectoris and aortic valvular disease and under it in mitral valvular diseases.

Conclusion: 1) MSVV, MDVV & other time parameters except EF are dependent on R-R interval, suggesting physiological function of the heart. 2) Two dimensional expression of these parameters is useful to diagnose cardiac diseases.

**Detection of Aortic and Arterial Disorders with Radionuclide (RN) Angiography and Blood Pool Image**

Hisashi Bunko, Norihisa Tonami and Kinichi Hisada

*Department of Nuclear Medicine, School of Medicine, Kanazawa*

Because of easy to perform, safe and noninvasive nature of RN angiography, it has been widely used for screening and follow-up of various vascular disorders. Purpose of this study is evaluation of diagnostic efficiency and limitation of RN angiography and blood pool image of various aortic and arterial disorders.

RN angiography was taken immediately after intravenous injection of 10–20 mCi of 99mTc-human serum albumin with imaging time of 1–2 sec/frame up to 25 or 42 frames. Imaging device was Toshiba GCA-401 large field of view gamma camera with high resolution collimator and gamma imager. Ninety-three patients were grouped into...