

## Summary

### Left Ventricle Expands Maximally Preceding End-diastole —Radionuclide Ventriculography Study—

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It has been considered that left ventricle (LV) expands maximally at the end-diastole. However, is it exactly coincident with this point? This study was aimed to determine whether the maximal expansion of LV coincides with the peak of R wave on electrocardiogram. Thirty-three angina pectoris patients with normal LV motion were examined using radionuclide ventriculography. Data were obtained from every 30 ms backward frame from the peak of R wave. All patients showed the time of maximal expansion preceded the peak of R wave. The intervals from the peak of R wave and the onset of P wave to maximal expansion of LV was  $105 \pm 29$  ms and  $88 \pm 25$  ms, respec-

tively. This period corresponds to the timing of maximal excursion of mitral valve by atrial contraction, and the centripetal motion of LV without losing its volume before end-diastole may be interpreted on account of the movement of mitral valve toward closure. These findings suggest that LV expands maximally between P and R wave after atrial contraction, preceding the peak of R wave thought conventionally as the end-diastole.

**Key words:** Maximal expansion of left ventricle, End-diastole, Radionuclide ventriculography, Backward gating.