

Since then, a few literatures dealing with the heart pool scanning were reported. One of the reasons may depend on other establishing procedures such as angiocardiology, intracardiac catheter and pneumopericardium examinations. The heart pool scintigram has same useful value in the diagnosis of the heart disease notwithstanding harmless and easy procedures, and recent development of instrumentation gives more accurate and valuable informations in the diagnosis. In this paper same considerations of heart pool scintigrams are discussed not only on the distribution of radioisotopes but concentration of its activity.

Enlargement of the cardiac shadow on the chest X-P sometimes can not be differentiated between cardiac enlargement and pericardial

effusions. Pneumapericardial or angiocardio-graphic examinations are very helpful in differential diagnosis, but these examinations are quite elaborate procedures and sometimes result some irreversible prognosis. Therefore, some simpler procedures are preferable. In this point, heart pool scintigram is suitable. About 10 cases which shows characteristic findings in heart pool scintigrams are exhibited, they are pericarditis, aortic anomalies, aneurysms, etc.

Now we are going to do some dynamic studies on heart pool, utilizing the scintillation camera, specially in the patients who are suspected to have valvular insufficiency as stenosis and shunt of the congestive heart failure.

### Problems in Myocardial Scanning

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The scintiscanning with  $^{131}\text{Cesium}$  for the visualization of the myocardial infarction has clinically been investigated in Chiba University Hospital since several years ago. Series of the phantom experiments were performed for checking the size and localization detectable by scanning procedure, and for estimating the contribution of the ribs and cardiac beats to the real image of myocardium. A 10cm plastic ball containing smaller solid plastic ball in it is the phantom used. Cesium chloride  $^{131}\text{Cs}$  was infused in 1cm gap just inside the outer wall of the ball phantom. Plastic void of 1 to 3cm diameter is attached in the gap of each phantom, which simulates the myocardial infarction. The ball phantom was buried in the rice-filled box with a piece

of human ribs and sternum. Three inch rectilinear scanner with 10cm focusing collimator (37 holes) was the instrumentation. Obtained results are as follows,

- 1) Voids larger than 2cm were detectable.
- 2) Any void could be detectable except posterior and postlateral localization.
- 3) The contribution of ribs were checked lest they should produce the false infarction images in the cardiac silhouette. The fear was avoided when the collimation was focused on the anterior wall of the myocardium.
- 4) Cardiac beats proved to have little effect on the scan images of the 2cm void. Cardiac beats simulation was 65/min at 1cm movement.