

Lung Scanning in Congenital Heart Disease with Pulmonary Hypertension in Relation to Indication for Operation

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In recent years, pulmonary scintiscanning in congenital heart diseases with pulmonary hypertension was studied to detect the derangement of the distribution pattern of pulmonary arterial flow and some interesting informations were obtained, by which the indication for radical operation could be given. 23 patients of ventricular septal defect, 7 patients of ventricular septal defect with patent ductus arteriosus, 9 patients of patent ductus arteriosus, and 3 patients of atrial septal defect, with pulmonary hypertension more than 50 per cent of Pp/Ps were studied by the use of lung scintiscanning.

Human serum albumin labelled with ^{131}I was injected intravenously for these patients, in order to obtain pulmonary scintigrams, U/L ratio in the distribution pattern of pulmonary blood flow and total body linear scanning. The deranged pattern of the dis-

tribution of pulmonary blood flow in lung scitigram was found 26 cases of the 42 patients. The same change of it was revealed in all cases of the patients with eisenmengerization and in 83 per cent of the patients with pulmonary hypertension associated more than 75 per cent of Pp/Ps.

And then, right to left shunt shown by total body linear scanning was observed in 16 patients, 25-33 per cent shunt in the cases with eisenmengerization, 10-25 per cent in the cases without eisenmengerization.

In addition, U/L ratio in the distribution pattern of pulmonary blood flow might remarkably relate to the mean pulmonary pressure. U/L ratio of 1.33-1.52 was obtained in Eisenmenger group. The decrease of pulmonary pressure and value of Rp/Rs were not found in the patients with U/L ratio of 1.10-1.30 postoperatively.

RI Angiocardiography Using a Scintillation Camera with a Video System

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The dynamic studies of heart and large vessels could be researched morphologically and functionally respectively by scintiphoto sequence and RI dilution curve by means of RI angiocardiography using a scintillation camera with a video system. We used Pho/Gamma Data Store/Play Bach system as a video system which is an accessory to Pho/Gamma III and has an "area-of-interest(AOI)" mode, and through which RI dilution curve of AOI was written by rate recorder. Studies have been made in left anterior oblique projection after the intravenous injection of 10 to 20 mCi and 1 to 2 ml in volume of $^{99\text{m}}\text{Tc}$ -pertechnetate.

In left anterior oblique projection, hemodynamics from superior vena cava to thoracic aorta could be observed separately, and right and left ventricle were clearly separated by sash-like split of radioactivity which was considered the interventricular septum.

Applying RI dilution curves of AOI of right ventricle(R), left ventricle(L) and left lower lung field(P), blood circulation times were measured and curve patterns investigated. Central circulation times between peaks of the curves were prolonged in heart disease, especially valvular disease, and heart failure but hyperthyroidism, and in control as fol-