We evaluated pulmonary perfusion and ventilation studies in 106 cases of advanced age from 65 to 95 years old (cardiac disease; 36 cases, cardiac disease with chronic obstructive pulmonary disease (COLD); 12 cases, COLD with another pulmonary disease; 58 cases). 88/106 (83%) cases showed segmental or lobar perfusion defect. In 74/106 (70%) cases fissure signs are positive and 81% of these cases fissure signs were recognized in the both right and left lungs. In 47/58 (80%) cases with COLD and another pulmonary disease, fissure signs were also positive. Even in many cases whose pulmonary perfusion scans showed COLD, blood gas analysis was normal in the chest x-ray examination abnormal findings were not detected. We suspected that the cause of fissure signs as decreasing of pulmonary blood flow to periferal area of lung lobes or segments.


We performed lung perfusion scintigrams before and after catheterization in consequitive patients. Both right and left heart catheterization were performed using percutaneous femoral approach with catheter introducer. After removal of all catheters, manual compression was carried out, and after having confirmed that the hemostasis completed, 2 kg sand-bag was placed on the groin for 6 hours and each patient was then confined to complete bed rest for about 24 hours. Of 11 patients, 5 patients (45%) demonstrated new pulmonary perfusion defects on the day following catheterization, but these defects disappeared within a week. None of 5 patients with pulmonary embolism were symptomatic, and there were no changes in chest X-ray films, or blood chemistry. Frontal plane QRS axis showed the right axis deviation more than 30 degrees in 2 cases. And arterial PO2 showed significant decline by more than 10 mmHg in 3 cases. Duration of manual compression was significantly longer (p<0.05) in patients who developed new perfusion defects. New perfusion defects could develop without right heart catheterization in 1 case. These data suggested that the prolongation of compressing the puncture site and/or subsequent hematoma caused by technical failure may be an important factor in the development of pulmonary embolism.

STUDY OF PULMONARY PERFUSION IN CARDIOVASCULAR DISEASES. T.Fuji,J.Hirayama,T.Kanbayashi,M.Hongo,K.Ookubo,K.Yamao, H.Ueda and M.Takizawa. Shìnshu University School of Medicine, Matsumoto.

On perfusion lung scintigram of patients with heart disease, hyperperfusion area is observed in the upper anterior lung field. So, semiquantitative estimation of regional pulmonary perfusion in the right lateral image as well as the left lateral, anterior and posterior image, was examined in 52 controls and 199 cases with cardio-vascular disease.

In the right lateral image, twelve regions of interest were setted, and counting ratios of the each region to the lower posterior region were calculated. The value of the upper anterior region (A2, A2/P2) was correlated with pulmonary artery wedge pressure, pulmonary artery mean pressure and pulmonary vascular resistance better than that of the other regions. A2 and A2/P2 were 1.01 ± 0.31, 0.86 ± 0.20 in control, 1.48 ± 0.56, 1.20 ± 0.29 in NYHA class 3, 2.26 ± 0.98, 1.30 ± 0.35 in NYHA class 4, 1.62 ± 0.75, 1.21 ± 0.33 in left heart failure, 1.62 ± 0.74, 1.12 ± 0.34 in mitral valvular disease, 1.32 ± 0.55, 1.05 ± 0.35 in aortic valvular disease and 1.33 ± 0.82, 1.14 ± 0.29 in myocardial infarction.

It seems that redistribution pattern of pulmonary perfusion in the right lateral image reflects pulmonary hemodynamics better than that of the other images.