PULMONARY PERFUSION SCINTOGRAPHY IN 106 CASES OF ADVANCED AGE
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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 were positive and in 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 analyses confirmed that the hemostasis in the both right and left lungs 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.

A new pulmonary function test for infants and children was devised using simultaneously Xe-133 ventilation scanning and Tc-99m MAA perfusion scanning. A long-closed circuit with a small total volume of 3 litters was developed for ventilation scanning. Distribution of regional ventilation in six zones of the lung was quantitatively assessed during inhalation and wash-out phase of Xe-133 administered at a dose of 5 mCi. Distribution of lung perfusion was also estimated after intravenous injection of 1-3 mCi of Tc-99m MAA. Clinical usefulness of the method was evaluated in 71 children with various cardio-pulmonary diseases. Of these, 34 cases were under 2 years old. In patients with VSD associated with pulmonary hypertension, a marked regional decrease in ventilation and perfusion was observed. The impaired function was improved after radical operation, suggesting that it was mainly due to the stricture of the airway and reversible change. In children who had received a lobar or partial lung resection, decreased ventilation and perfusion persisted for a long time after operation. The reduction was more prominent in patients of lobectomy than in those of partial resection and did not appear to be affected by operated age and post-operated days. This pulmonary function test proved to be a useful procedure for the assessment of pulmonary function in infants and children.