

## Lung Scintigraphy in Pneumoconiosis

S. MIMOTO, J. YAMADA, T. MASUOKA, K. TSUNASHIMA, K. SHONAKA

and Y. SATO

*Nihon Kokan Hospital, Kawasaki*

Lung scintigraphy was performed in 20 patients of pneumoconiosis and 5 persons without evidence of cardiopulmonary diseases. All of the subjects were employees of an iron foundry and a ship building factory. Scintigrams were obtained by injecting 300 microcuries of  $^{131}\text{I}$ -MAA intravenously to the subjects in supine position. Linear scanning of the lungs using the slit-type collimeter, chest x-ray, ESR, pulmonary function test and EKG were also taken in all individuals and findings of these tests were compared with that of lung scintigraphy.

Abnormalities indicative of disturbed blood circulation were noted in 9 of 20 patients. In these 9 patients, x-ray film of the chest showed lesions of PR4 in one, of PR3 in one PR2 in all others.

In all of the individuals in whom the pulmonary function test gave slightly abnormal results, the lung scintigram also revealed abnormalities of various degrees. The magnitude of abnormalities in lung scintigraphy did not, however, show a definite correlation with the MBC or %FEV1.0", the lack of

correlation probably being due to the fact that the pulmonary function was severely impaired in none of the subjects studied.

There was no appreciable difference in the ESR or findings of EKG or linear scanning of the lungs in patients with abnormal lung scintigram compared with the results of those tests in the individuals without any evidence of cardio-pulmonary diseases.

In some individuals, the radioactive MAA was injected with the subject in sitting position. When the radioactive MAA was injected with the subject in supine position, the area of decreased uptake of the material corresponded with lesions in chest x-ray films. When the radioactive MAA was injected to the subject in sitting position, however, the scintigram showed decreased uptake of the material in the apical portions of the lungs. It should be emphasized, therefore, that the intravenous injection of the radioactive MAA should be given with the subject in supine position in lung scintigraphy in patients with pneumoconiosis.

## Changes of Pulmonary Extravascular $^3\text{H}$ -Water Space Following Surgical Obstruction of Lymphatic Circulation

K. NAKAHARA, M. MAEDA and A. MASAOKA

*First Department of Surgery, Osaka University Medical School, Osaka*

Changes of the pulmonary extravascular  $^3\text{H}$ -water space (Vthol) was followed up by double isotope dilution method<sup>(1)</sup> after surgical obstruction of lymphatic circulation in dogs.

Further Vthol was compared with gravimetric extravascular water volume<sup>(2)</sup>. Correlation between Vthol and gravimetric values was statistically significant. ( $r=0.765$ ,  $p<$

$0.05$ ).

In the first and third day after surgical obstruction of lymphatic circulation at both sides of cervical venous angle without thoracotomy, the increase of Vthol was significant, but in the fifth day it decreased within the normal range.

From these data it was suggested that obstruction of lymphatic circulation resulted