The Value of Pulmonary Isotope Scanning in the Diagnosis of Pulmonary Circulation Disturbance


The Second Department of Surgery, Nihon University School of Medicine, Tokyo

We have classified pulmonary circulatory disturbance in cardiopulmonary diseases into two basic types, namely increase and decrease of the pulmonary vascular bed. These two basic types are further subdivided into functional, organic or combined increase or decrease. The pulmonary circulatory disturbance in pulmonary diseases is due to a decrease in the pulmonary vascular bed, whereas that in cardiovascular disease is manifested by an increase in pulmonary vascular bed. Pulmonary scanning with $^{131}$I-M.A.A. is a useful means of detecting abnormal distribution of pulmonary blood flow. When there is a decrease in the pulmonary vascular bed, whether it be organic or functional, the pulmonary isotope scan well reflected decreased pulmonary perfusion and the scanning data correlated with the results of cardiopulmonary function tests. Where there was an increase in the pulmonary vascular bed due to cardiovascular diseases, it was not possible to differentiate whether it is organic or functional from the lung scan alone; cardiopulmonary function tests were required to make this differentiation.

When the pulmonary circulatory disturbance progresses from increase to decrease in the pulmonary vascular bed, this change is irreversible and the change is reflected in the pulmonary isotope scan.

The Studies on Circulatory Defects in Pulmonary Scintigram using RI in Bronchial Asthma

(Pathophysiological studies on bronchial asthma VI)

T. HAGIHARA, T. IIZUKA, S. NAKAJIMA, S. NISHIJIMA, T. SUGIHIRA and R. SHIOZAKI

The First Department of Internal Medicine, Nihon University School of Medicine, Tokyo

The pathophysiological aspects of bronchial asthma were studied on 45 asthmatic patients with pulmonary scintigraming using IMAA, and investigating local pulmonary circulation (circulatory defects) in asthmatic attack and non-attack. The following results were obtained.

1. Circulatory defects in pulmonary scintigram were seen in all cases in asthmatic attack, and the stronger the attack, the higher the circulatory defects tended to increase. Its findings showed the tendency of decrease owing to weakened attack, but only 4 cases (8.1%) showed the same findings as normal cases.

2. Circulatory defects on pulmonary scintigram were revealed in all cases which showed the findings of pulmonary emphysema in chest X-ray film. Even if the findings of pulmonary emphysema in chest X-ray film were not shown, circulatory defects were seen in all cases in attack. In non-attack, they were seen in the cases of 87 per cents. The chest X-ray film was not always correlative to the circulatory defects.