ORIGINAL ARTICLE

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Evaluation by ventilation and perfusion scintigraphy in patients who developed postural hypoxemia in the supine position

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Ventilation and pulmonary perfusion scintigraphy were performed in 7 patients in whom postural change from the sitting position to the supine position decreased partial oxygen pressure in arteries (PaO_2) by 15 mmHg or more. Six of these 7 patients were obese. Five patients had organic pulmonary disease or space occupying lesions of the liver. On lateral supine-position images taken by using the continuous inhalation method for ^{81m}Kr ventilation scintigraphy, ventilation was reduced in the dorsal area corresponding to a gravity-dependent area, but on pulmonary perfusion scintigrams, there were no marked changes compared to normal adults. The mismatch of ventilation to perfusion may have caused hypoxemia. Reduced ventilation was correlated with reduced PaO_2. The distribution of ^{81m}Kr bolus gas inhalation suggested closure of the airway in the dorsal area at functional residual capacity (FRC), which means the resting expiratory level, in the supine position.

Key words: postural hypoxemia, obesity, ^{81m}Kr ventilation scintigraphy, ^{99m}Tc-MAA perfusion scintigraphy, lateral supine-position images