

Evaluation of Tl-201 SPECT for monitoring the treatment of pulmonary and mediastinal tumors

Ryuichiro NAMBA, Isamu NARABAYASHI, Ritsuo MATSUI, Kozo SUEYOSHI, Yasunobu NAKATA, Kojiro TABUCHI and Tsuyoshi KOMORI

Department of Radiology, Osaka Medical College

Tl-201 single photon emission computed tomography (SPECT) was performed in 88 patients with pulmonary or mediastinal tumors in order to evaluate its usefulness for the detection of disease and for the assessment of the effect of treatment. We also examined mediastinal and hilar lymph node metastasis from lung cancer. Tl-201 SPECT showed abnormal accumulation on delayed images in all lung cancer patients with tumor diameters more than 12 mm. In the 14 operated lung cancer patients, mediastinal and hilar lymph node metastases with diameters of more than 15 mm were imaged, but one with a diameter of 9 mm was missed. The retention index (RI) was 27.52 ± 31.58 in malignant tumors and -13.67 ± 8.15 in benign tumors ($p < 0.05$). The RI was significantly lower after treatment than before treatment. The interval until tumor recurrence or reactivation tended to be longer in patients who showed a significant decrease in the RI after therapy. These findings suggest the usefulness of the RI as an index of therapeutic efficacy.

Key words: Tl-201 SPECT, pulmonary and mediastinal tumors, therapeutic efficacy