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Annals of Nuclear Medicine Vol. 7, No. 3, 147–152, 1993

Thallium-201 scintigraphy in the evaluation of thyroid nodules A retrospective study of 246 cases

Mitsuru KOIZUMI, Hideji TAGUCHI, Masabumi GOTO,
Toshiharu NOMURA and Tsutomu WATARI

Department of Radiology, Dokkyo Medical University

There is controversy at present concerning the value of Tl-201 scintigraphy in the diagnosis of malignant thyroid nodules. The usefulness of Tl-201 scintigraphy in differentiating benign from malignant nodules was evaluated retrospectively. Tl-201 scintigraphy was performed in 101 patients with malignant thyroid nodules and in 145 with benign nodules. Early and late images were examined to compare Tl-201 uptake in nodules and normal thyroid tissue. The visual method resulted in 74% of sensitivity and 58% of specificity for the detection of malignant nodules including incidental cancers. Excluding incidental cancers, 87% sensitivity and 58% specificity were achieved. Small cancers, including incidental cancers less than 1.5 cm in diameter and small number of viable tumor cells in a large tumor also gave negative Tl-201 scintigraphic results. Forty-two percent of the benign lesions gave false positive Tl-201 scintigraphic results.

It is concluded that Tl-201 scintigraphy is a sensitive and useful method to use in diagnosing malignant thyroid nodules, but is not a specific method even with late scan, for the detection of malignant thyroid nodules.

Key words: thallium-201, thyroid malignancies.