

G. Thyroid and Parathyroid

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CLINICAL EVALUATION OF Tl-201 CHLORIDE SCINTIGRAPHY FOR DIAGNOSIS AND FOLLOW-UP STUDY OF DISTANT METASTATIC LESIONS FROM WELL-DIFFERENTIATED THYROID CARCINOMA. F. Tsuchiya, K. Kusakabe, Y. Kawasaki, Y. Tokuyasu, S. Nara, M. Maki, Department of Radiology, Tokyo Women's Medical college. T. Yamasaki, Division of Clinical Research, National Institute of Radiological Sciences.

Radioiodine scintigraphy is regarded as an effective means of diagnosing distant metastatic lesions from well-differentiated thyroid carcinoma. But this entails a preparatory period of about a month during which a total thyroidectomy is carried out a state of hypothyroidism.

We performed scintigraphy with Tl-201 Chloride in 22 cases (6 male, 16 female, mean age 47.3) who had distant metastatic lesions from well-differentiated thyroid carcinoma. We then compared our data with the results from diagnostic scintigraphy by means of radioiodine as well as with those from other diagnostic methods, and evaluated the clinical value of the Tl-201 Chloride scintigraphy. Scintigraphy with Tl-201 Chloride showed a positive accumulation on pulmonary metastatic lesions in 5 of 14 patients (12 of 20 examinations, or 60%), and on bony metastatic lesions in 11 of 11 patients (61 of 105 lesions, or 58.1%).

On the whole, there was no great difference in the results as between radioiodine and Tl-201 Chloride scintigraphy, but the latter proved useful in diagnosing large metastatic lesions, especially those of the multinodular pulmonary type.

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ALTERATION OF UPTAKE RATIO AND TUMOR/NON-TUMOR RATIO OF 201-THALLIUM IN THYROID TUMORS. T. Michigishi, N. Tonami, M. Matsudaira and K. Hisada Department of Nuclear Medicine, Kanazawa University Hospital, Kanazawa

Data of the radioactivity of the thyroid from 10 to 15 min.(early phase) and from 60 to 65 min.(delayed phase) after intravenous injection of 201-TlCl were recorded on computer. The radioactivity in the syringe was recorded before and after the injection to calculate the injected dose to the patients.

The uptake ratios at early and delayed phases of benign tumor were not different from those of malignant one. The alteration of uptake ratios between early and delayed phases of benign tumor did not also differ from that of malignant one.

The tumor/non-tumor ratio at early phase of the benign tumor was not different from that of malignant one. In the cases with the tumor/non-tumor ratio at delayed phase over 1.0, there was no difference of the ratio between benign tumor and malignant one. However, four tumors with the ratio at delayed phase under 1.0 were all benign. Eight of 14 cases with benign tumor and 9 of 13 cases with malignant tumor had greater tumor/non-tumor ratio at delayed phase than that of early phase.

From these results, the delayed image with 201-TlCl may not be useful for differentiation of malignant tumor from benign one.

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ACCUMULATION OF 99m-Tc-PHOSPHORUS COMPLEXES IN MEDULLARY CARCINOMA OF THE THYROID. C. Shigeno, M. Hino, M. Fukunaga, I. Yamamoto, S. Dokoh, R. Morita, K. Kasagi, J. Konishi, K. Torizuka, K. Ikekubo*, and T. Mori** Department of Nuclear Medicine, Kyoto University School of Medicine, Kyoto, and Nuclear Medicine* and Endocrine** Units, Kobe Municipal Central Hospital, Kobe

Four cases of tumor visualization by 99m-Tc-phosphorus complexes in patients with histologically proven medullary carcinoma of the thyroid(MCT) are presented. All four underwent surgery: postoperative clinical course was uneventful in three of them; in the remaining one case, however, postoperative repeat bone scan demonstrated the site and size of residual MCT tissue. Radiographical as well as microscopical evidence of tumor calcification was present in all four cases; all showed psammomatous calcified deposits in the tumor. 99m-Tc-phosphorus bone imaging may be useful for tumor visualization in the follow-up of the patients with calcified MCT.

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COMPARISON OF I-131 SCANS WITH Tc-99m MDP BONE SCANS IN BONY LESIONS OF WELL-DIFFERENTIATED THYROID CARCINOMA. M. Nakamura Department of Radiology, School of Medicine, Tohoku University, Sendai

I-131 and Tc-99m MDP bone scans were performed in order to evaluate their usefulness in detecting bony metastasis in 7 patients with thyroid cancer. 3 were female and 4 were male. Microscopic diagnosis was follicular adenocarcinoma in 6 cases and papillary adenocarcinoma in 1 cases.

14 metastatic bony lesions were analyzed and the findings were graded according to the magnitude of uptake as negative, slight, moderate and marked.

The results were as follows; I-131 scans: negative 0%, slight 14.3%, moderate 14.3%, marked 71.4%; Tc-99m MDP scans; negative 14.3%, slight 42.9%, moderate 35.7%, marked 7.1%.

This study showed I-131 scans were superior to Tc-99m MDP bone scans in delineating bony metastasis.