nuclide were performed as the R.O.I. curves (Region of Interest).

Result:

The uptake curves and the R.O.I. curves in the simultaneous measurement of two nuclides, showed difference according to the function and the region of thyroid.

Clinical Application of Thyroid Tumor Scanning with $^{197}HgCl_2$

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Various tumor scanning agents have been studied as a diagnostic method of malignant tumors. Recently, we applied scintillation scanning with $^{197}HgCl_2$ to the disease of the thyroid and found that $^{197}HgCl_2$ concentrated in thyroid cancer. The diagnostic usefulness of ^{197}Hg scanning for various thyroid disease was studied.

Nine patients with thyroid cancer shown cold nodule with ^{131}I scanning were scanned after injection of $^{197}HgCl_2$. The positive scanning of tumor could be obtained in 8 out of 9 patients with thyroid cancer. Only one case having cystic degeneration showed negative scanning. Since two of 13 patients with thyroid adenoma revealed positive scanning, it may be possible to differentiate benign and malignant tumor of the thyroid.

In chronic thyroiditis, positive delineation was obtained in 6 out of 7 patients. It is impossible to differentiate from thyroid cancer by ^{197}Hg scanning alone, but it may be gener ally possible to differnatiate both disease by ^{131}I scintigram. In all patients with hyperthyroidism radiomercury did not concentrate in the thyroid gland.

These findings suggest that ^{197}Hg scanning may be a valuable diagnostic method for the detection of thyroid cancer.

Radioimmunoassay of Serum Triiodothyronine in Thyroid Diseases

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Serum levels of triiodothyronine (T_3) were determined in normal snbjects and patients with various thyroid diseases by radioimmunoassay using Dainabot's assay kit. The sensibility of the assay was at the level of 0.125 ng/ml. The presisions of intra-assay and inter-assay were 6.7% and 11.0% respectively.

The concentration of T_3 was 1.33 ± 0.27