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Serial renal studies with Tc-99m-DTPA, Tc-99m-DMSA and I-131-hippuran are discussed and compared with other imaging techniques such as roentgenography, ultrasonography and CT in many clinical cases.

Clinical evaluation and advantage of radioactive imaging techniques in urogenital organs are reviewed.

A positive tumor image on AFP producing testicular tumor of nude mouse is showed and the possibility of "tumor specific positive imaging" with labeled anti-tumor-marker are suggested.

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CURRENT STATUS AND FUTURE OF THYROID IMAGING.
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Radionuclide imaging methods of thyroid and thyroid tumor were reviewed and re-evaluated. These methods were discussed, as compared with other diagnostic methods. I-131 TSH as a new diagnostic radiopharmaceutical is also reported with the view of imaging thyroid and thyroid tumor, having TSH receptor.

Concerning thyroid and primary thyroid tumor, it is necessary to re-evaluate radionuclide imaging methods, because the recent development of imaging instruments and radiopharmaceuticals is so remarkable.

Most important method to diagnose a thyroid nodule is palpation, but now using recent high resolution camera and I-123, it is not rare to detect a small lesion which is not palpable.

A comparative study of radionuclide (I-123, Tl-203) imaging technic and other diagnostic methods (palpation, ultrasonography, CT) was done, concerning the thyroid nodule.

Recently the thyroid tumor scintigraphy with Tl-201 chloride is popularized in Japan. Using our data, Tl-201 chloride scintigraphy was discussed. This scintigraphy have a high sensitivity in thyroid cancer, but high false-positive ratio was found in benign thyroid adenoma. In any way, the scintigraphy using Tl-201 chloride is especially useful for the detection of the distant metastasis of thyroid cancer.

Anaplastic thyroid cancer concentrate Ga-

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67 citrate in the lesion, but do not concentrate Tl-201 chloride. On the contrary, differentiated thyroid cancer do not concentrate Ga-67 citrate but Tl-201 chloride. It is concluded that the qualitative diagnosis of thyroid tumor is possible in some extent, using these radiopharmaceuticals.

The specific binding of radionuclide labelled TSH to thyroid and thyroid tumor recognized by our recent in-vivo study. H-3 TSH and I-131 TSH were found to concentrate in the rat thyroid tissue in higher ratio, as compared with other organs and surrounding extrathyroidal tissue. 7 patients with thyroid disease were studied by I-131 TSH scintigraphy. I-131 TSH image revealed hot areas corresponding 3 hot adenomas in 2 patients and several lymphnode metastases in 2 patients with thyroid cancer.

These results show the potential for imaging of the tumor, having hormone receptor.