Dynamic Thyroid Study Using Na ^{131}I and Perchlorate

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The Perchlorate Discharge Test was used in the detection of thyroidal synthetic disorder.

We observed serial thyroidal images and radioactivity change with the VTR on line system, in which -camera was connected directly with the videotape recorder.

We tried to approach to the patho-physiology of thyroidal diseases. Patients were administered 100 Ci of Na ^{131}I p.o. and thyroidal activity was measured 24 hr later, and at that time 150 ml of 0.1% $KClO_4$ was administered p.o. and the discharge pattern was recorded on VTR from 10 min. to 60 min. after the administration of $KClO_4$. On play back we observed serial ^{131}I radioactivity change in all lobes of thyroid image and particularly the region of interest settled on a cold area of thyroid image.

The researched cases consisted of 2 normal cases, 4 cases of Hashimoto' thyroiditis, 2 cases of Basedow's diseases, one case of single goiter and 2 cases of thyroid cancer.

In the normal and Basedow's disease cases, no radioactivity change was observed after 60 min. of $KClO_4$ administration.

This phenomenon indicated that the administrated ^{131}I was almost all organized. The cases of Hashimoto's thyroiditis showed the discharge value of 8–12% in all lobes of the thyroid gland following the administration of perchlorate.

Particularly the discharge of the hot area showed a marked value of 23–34%. In cases of Hashimoto's disease, although symptoms and signs have subsided, high discharge from the thyroid gland still remained. Therefore it was thought that the biosynthetic function was not still recovered. However, in cases of simple goiter, even in cases that were not treated, the discharge value was not as high as in Hashimoto's disease. Moreover the degree of the biosynthetic disorder of thyroid cancer depends on it's histological findings.

Clinical Evaluation of Thyroid-lymphography by Using ^{99m}Tc-Colloid

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Radioisotopical thyroid lymphography was performed on 30 cases with various thyroid disorders using ^{99m}Tc-Colloid and PHO/Gamma scintillation camera.

Following percutaneous injection of 0.5 mCi/less than 0.2 ml aliquots of ^{99m}Tc-Colloid into the center part of both thyroid lobes, a pinhole collimator with scintillation camera was placed at 15 cm distance from neck surface, and the radioactivity counting and scintiphotography

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