VII. Thyroid and Parathyroid

Statistic Studies on the Symptoms of Thyroid Diseases

Y. AZUMA, S. IZUMI, M. ARAI, H. FUKUMORI and H. AKAGI
Department of Radiology, Osaka Medical College, Osaka

The purpose of this study is to analyse the reasoning processes inherent in medical diagnosis of thyroid diseases, especially for the use of computers as an aid to diagnosis.

At this time, the basic data for this purpose were collected and the difference between the races was tried to find.

1) Number of patients used in this study was 1001 cases (from 1966 to 1970) with suspected thyroid diseases in which adequate followup information was available in our clinic.

2) Data about the signs, symptoms, laboratory tests shown in the list below were collected: age, sex, nervousness, heart sensitivity, increased sweating, increased appetite, weight loss, warm moist skin, fine finger tremor, lethargic movements, cold sensitivity, decreased sweating, decreased appetite, weight gain, increased lethargy, dry coarse skin, facial edema, pain in thyroid gland, eye signs, BMR, 3 hour $^{131}$I-uptake, 24 hours $^{131}$I-uptake, triosorb $(T_3)$, TBG $(T_4)$, $T_7$ and so on.

3) Testing the occurrence rate of thyroid disease in sex and ages, the difference was proved statistically in patients with hyperthyroidismus, hypothyroidismus, simple goiter, or thyroid cancer.

4) The results of signs, symptoms and laboratory tests of 1001 cases were compared to the data presented by L. B. Lusted 1968, and the difference between races (Japanese and Americans) was tested statistically.

The items in which the difference was found in races were nervousness, weight loss, finger tremor, facial edema in hyperthyroidismus, and dry coarse skin, decreased sweating in hypothyroidismus. As the result of laboratory data, in simple goiter, $^{131}$I-24 uptake in Japanese was lower and triosorb was higher. In hyperthyroidism 29.7% of Americans and 59.2% of Japanese showed over $+45\%$ BMR, while, 25% of Americans and 1% of Japanese were found in less than $-40\%$ in hypothyroidism. The other test data showed less change in Japan than that in Americans.

Studies on Proliferation of Follicular Epithelium of the Thyroid
Using $^{3}$H-Thymidine Autoradiography
Part 3 —On the Generation Time of Thyroid Epithelium of Rat—

M. MIYAKAWA, Y. KOIKE and F. IIDA
Second Department of Surgery, Faculty of Medicine, Shinshu University, Matsumoto

In the previous report it was confirmed using the $^{3}$H thymidine labeling method that the thyroid follicle develop from immature follicle to large mature follicle. There are two possible means to estimate the generation time of thyroid epithelium; one is mitosis
chaise method, another cumulative labeling method. On the thyroid, however, the mitotic figures are observed very rarely, so that the mitosis chaise method is not able to be applied, and the cumulative labeling method was chosen to this experiment. 2 μCi/g of ³H thymidine was given intraperitoneally for male rats in very 6 hours. The labeling index for all epithelial cells was estimated until 22 days after the first injection. The straight line drawn on each plot goes up very slowly and does not reach to plateau. Therefore, the exact generation time could not be calculated in this method. But it can be said that it may be over 42.5 days.

A Study of ⁷⁵Se-Selenomethionine Scanning on Secondary Hyperthyroidism

S. Mimoto, T. Masuoka and K. Tunashima
Nihon Kokan Hospital, Kawasaki

The subject was an 83 year old woman who had been made a diagnosis of secondary hyperthyroidism due to renal function impairment by a physician of four hospital. We injected intravenously 300 μCi ⁷⁵Se-selenomethionine to the patient without any premedication. Scans were made one and two hours following injection.

The scintigram revealed a small concentration of ⁷⁵Se-selenomethionine at the site of the left upper lesion of thyroid gland. We evaluated this hot area as the scintigram of a parathyroid gland. The patient was dais unfortunately after 140 days of this study and was made autopsy. The diagnosis of autopsy was made secondary hyperparathyroidism due to chronic renal ineficiency. And we found four tumors parathyroidglands at the neck.

One of them located at the left upper lesion of the neck coinciding with the hot spot of the scintigram of ⁷⁵Se-selenomethionine was the largest.

But histological examination of this tumor revealed lymph node, the others were parathyroid gland which had evidence of hyperparathyroidism.

Then we counted radioactivity level of these four tumors with scintillation counter.

The results were that the lymph node which showed the hot area on scintigram had the highest radioactivity per tissue weight than parathyroid gland. Abdominal lymph node and the another lymph node of the neck were counted radioactivity as certral study.

We obtained these lymph node had higher radioactivity than parathyroidglands.

The results suggest that concentration of ⁷⁵Se-selenomethionine is appeared the lymph node as same degree as the parathyroidgland when it passed relatively long time after injection of isotope.