

## The Influence by the Difference of the Experimental Condition to the PVA Sponge Test

H. OGAWA, K. ARATA and J. ANTO

*Tokai Laboratory Daiichi Pure Chemical Company*

We have found a way of making a diagnosis of thyroid functions by making  $T_3$ - $^{131}I$  stick fast to the PVA sponge. We got the adsorption of the PVA sponge incubated in  $T_3$ - $^{131}I$  physiological solution of sodium chloride (1ml) and serum. This sponge is a cylinder with a diameter of 0.9 cm and a length of 1.5 cm.

### *Concerning the Incubation Time*

The incubation time of the PVA sponge in  $T_3$ - $^{131}I$  physiological solution of sodium chloride (1ml) and serum (1ml) was changed from 20 minutes to 120 minutes. As the result we chose 60 minutes as an experimentally convenient time with the best error.

### *The quantity of serum*

In case of  $T_3$ - $^{131}I$  physiological solution of sodium chloride (1ml) and incubation time (60 minutes) the quantity of serum was changed from 0.3 ml to 1.5 ml. As the result we chose 1ml as an experimentally convenient quantity with the best error

### *The Incubation temperature*

Adhesion rate was increased in proportion

to the rise of temperature. But as the increase of adhesion rate was directly in proportion to the rise of temperature, the correction of the value was possible.

### *Weight of $T_3$*

The test gives right result if we use ordinary  $T_3$ - $^{131}I$  solution. But when the weight of  $T_3$  was more than  $\frac{1}{2} \times 10^{-4}$  mg, adhesion rate was increased.

### *The influence of PH and sodium iodide*

The test gives right result if the PH of  $T_3$ - $^{131}I$  physiological solution of sodium chloride is from pH 4.0 to pH 9.5. And moreover the test wasn't disturbed by coexisting with sodium iodide which was less than 1 mg.

In view of the results so far achieved, we can have the same result whenever PVA sponge is incubated in the ordinary  $T_3$ - $^{131}I$  physiological solution of sodium chloride and serum (1ml) for 60 minutes, and  $T_3$ -test is possible for clinical use, we think.

## Use of PVA Sponge Which Absorbed $T_3$ - $^{131}I$

H. OGAWA, K. ARATA and J. ANTO

*Tokai Laboratory Daiichi Pure Chemical Company*

The thyroid function test by using triiodothyronine- $^{131}I$  and resin-sponge shows the excellent results, and is adopted in many hospitals.

We found that not only resin-sponge but also semiformalized polyvinyl alcohol sponge (PVF) absorbs  $T_3$  and for the purpose of making the  $T_3$ - $^{131}I$  test simpler, we tried it by using 65% semiformalized and 72% semiformalized PVA sponges absorbed  $T_3$ - $^{131}I$

beforehand.

In this experiment we used pooled human serum and had the following results:

- (1) Remaining rate of  $T_3$ - $^{131}I$  in PVF changes by less than 1% per 10 minutes in case incubation time is more than 60 minutes, and by less than 1% per 0.1 ml in case the quantity of serum is more than 0.8 ml. As to temperature, we need not correct it when it is room tempera-

ture or 10–30°C.

- (2) It seems that 72% PVF contained  $T_3$ - $^{131}I$  is more stable than 65% PVF contained  $T_3$ - $^{131}I$ .
- (3) These PVFs contained  $T_3$ - $^{131}I$  are able

to be used clinically, and as the test of  $^{131}I$ - $T_3$  by using them will become simpler than the previous one because it can be easily made by adding only serum.

### Experience of Abrrant Thyroids

H. IRIE, H. KOGA, T. MAEDA, K. WATANABE, J. MATSUOKA, S. YOSHIMOTO,  
N. KASAHARA, M. KOGA, and H. KAWANAMI

*Department of Radiology*

Y. IKEDA

*Department of Otopharyngolaryngology, Faculty of Medicine,  
Kyushu University, Kyushu*

5 cases of aberrnat thyroid glands seen in Radioisotope-clinic Kyushu University Hospital from 1960 till 1965 are reported. In all cases thyroid glands are not at normal region of neck, but at tangeubasis region.

Their  $^{131}I$  scitigrms and roentgenogrms taken with 200 and 250 kvp. X ray were showed.

Case No., Name, Age, Sex, Chief complaint, Basal Metabolic Ratio,  $^{131}I$  Up Take Ratio (past 24 hours), Value of Triosorbe Test of the following are:

- Case 1. R.K., 13Ys, Female, Stopping feeling at nose, -8.5%, 4.9%.
- Case 2. N. I., 20.Ys., Male, Stopping feeling

at nose and pharynx, +10%, 2.1%, (at center of neck), 8.1% (tangeubasis region).

- Case 3. S. I., 32.Ys., Female, Stopping feeling at tangeubasis region, +11%, 3.4%.

- Case 4. K. K., 20.Ys., Female, Tumor at tonguebasis region, -9%, 18.4%.

- Case 5. H. S., 42.Ys., Female, Light dyspnea, -6%, 19%, 32.7%.

This disease had been diagnosed only by histological examination traditionally, but has been diagnosed easily by nuclear application recently.

### Statistical Observation of Thyroid-Scintigram

T. YAMAZAKI

*Toranomon Hospital*

D. ISHIKAWA, H. YASUKOUCHI and A. AKANUMA

*Department of Radiology, University of Tokyo, Tokyo*

Since the April of 1960 till the March of 1965, Thyroid-Scintigrams of about 2300 have been performed and classified into several groups in the Department of Radiology, University of Tokyo. The total Thyroid-Scintigram in each year, was devided by sex and that of female was about four times than that of male.

Next, an about 1200 of Scintigram, which had a clinical diagnosis, was devided by disease and that of Hyperthyroidism and

Nodular goiter are more frequent than others. Position, size and defect of a Scintigram have important clinical merits. About position of a normal thyroid-sintigram, a right lobe is higher than left lobe at the overpole in about the 75%. And a underpole of right lobe is lower or same level or higher than the underpole of a left lobe.

Therefore, symmetrical form of thyroid-scintigram is considered to be in less number.

About size of scintigram, normal thyroid