

- hepatic neoplasms but according to
- 4) Hypertrophy of the left lobe
12 of 31 cases (39%) were the disease of bile duct system.
 - 5) Hypertrophy of the left lobe and moderate visualization of the spleen.
13 of 17 cases (76%) were postnecrotic hepatic cirrhosis.
 - 6) Marked spleen visualization.
All 3 cases were Banti's syndrome.
 - 7) Atrophy of the right lobe, hypertrophy of the left lobe and the spleen visualization.
This is a typical pattern which we should like to emphasize.
37 of 38 cases (97%) were exclusively postnecrotic hepatic cirrhosis.
 - 8) Poor appearance of the liver, visualization of the spleen and the bone marrow.
Three of four cases were postnecrotic hepatic cirrhosis.
 - 9) Hypertrophy of the both lobes.
Generally no diagnostic specificity in this pattern but in mottled appearance of this pattern 6 of 7 cases were proved to be metastatic hepatic cancer. In the moderate visualization of the spleen in addition to hypertrophy of the both lobes, 4 of 6 cases were hepatic cirrhosis.
 - 10) A huge filling defect
55% of this pattern were primary hepatic cancer.
 - 11) A solitary filling defect
90% of this pattern were malignant

- this pattern no one could not differentiate whether primary or secondary.
- 12) Multiple filling defect
79% of this pattern were metastatic hepatic cancer.
As a rare case a hepatic tuberculosis and a polycystic disease of the liver showing this pattern were found out.
 - 13) Other interesting cases
Complete defect of the left lobe were seen in two benign tumor, hemangioma and cyst.
Huge defect of the right lobe and hypertrophy of the left lobe were noticed in two cases, the first of hemangioma of the liver and the second of the case with left lobectomy of the liver. Liver is easily movable in position and changeable in shape by extrinsic factors such as abdominal mass, ascites or plural effusion.
It should be emphasized that not only the localized liver diseases but also the diffuse diseases to some extent could be diagnosed according to the size, shape and position of the liver and the intra- and extra-hepatic distribution of ^{198}Au .
For example, when the typical pattern of atrophy of the right lobe, hypertrophy of the left lobe and visualization of the spleen is obtained, we may diagnose the case as postnecrotic cirrhosis.

A Preliminary Study on the ^{131}I Rose Bengal Test for the Liver Function

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The ^{131}I rose bengal (^{131}I RB) test for the liver function was reported by many investigators as one of the excellent method to secure of the liver function. Some analytical methods of the liver uptake and excretion curve of ^{131}I RB were also reported. However, above mentioned methods could not analyze enough the uptake and excretion

curves of the liver under the pathological conditions.

In this report, an analytical method of the ^{131}I RB uptake and excretion curves of the rabbit liver was examined on the materials of the normal and X-ray irradiated conditions.

Experimental method and results were as

follows;

20 μ C of ^{131}I RB in 1 cc of physiological saline solution was injected into the marginal ear vein of adult male rabbit, weighing ca. 2 Kg. After the injection of ^{131}I RB, radioactivity in the liver was measured by γ -spectrometer with the lead collimator for rabbit liver measurement.

Uptake and excretion curves of ^{131}I RB of the rabbit liver consisted of two phases, the initial phases by ^{131}I RB uptake and the followed phase by excretion of ^{131}I RB as described by Lowenstein (1956).

The excretion curve consisted of the first phase curve (E_1) and the second phase curve (E_2) in any case.

The ^{131}I RB uptake curve were differentiated into three exponential curves, uptake line (U), the second phase excretion line (E_2) and the excretion line of the difference between the first and second phase (E_1-E_2).

On the non-irradiated rabbits, the mean

time of T_U , T_{E_2} and $T(E_1-E_2)$ were 5.0, 62 and 16 minutes respectively.

The mean excretion time of the second phase T_{E_2} of liver irradiated animals was clearly prolonged after 200 R irradiation and the excretion time recovered to the normal state in 6 hours after irradiation. By 500 and 1000 R irradiation, the T_{E_2} was markedly prolonged and returned to normal state in 24 hours after irradiation. T_U and $T(E_1-E_2)$ were independent of the irradiation dose. The second phase excretion time (T_{E_2}) and its recover time depended on the dose irradiated.

The uptake curve (U) related to the translocation of the ^{131}I RB from blood to liver and the (E_1-E_2) curve was concerned with the excretion of the ^{131}I RB from blood to the excretion systems, such as urine secretion. The second phase (E_2) of the excretion curve showed the excretion function of the liver cells.

Diagnosis of the Infantile Jaundice by ^{131}I -Rose Bengal Test

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The differential diagnosis between the congenital biliary atresia and the infantile hepatitis with obstructive jaundice is perplexing only by usual laboratory diagnostic manouver.

In case of the atresia, the clear-cut differential diagnosis from the infantile hepatitis is essentially cardinal, because the delay of the diagnosis gives serious damage upon the progress of the disease.

In this report, we discussed the value of the clinical application of the ^{131}I -Rose Bengal test to the cases of the infantile jaundice admitted to Dept. of Keio Univ. Hospital.

Comparing with the other diagnostic procedures such as usual liver function test, the liver biopsy, the diagnostic operation or the clinical pictures, ^{131}I -Rose Bengal method is verified to have a most advisable diagnostic value to attain a clear-cut diagnosis.

Clinical Studies with ^{131}I -Labeled Rose Bengal in Hepatobiliary Diseases

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Besides the external counting over the liver, the disappearance curve of intravenous-