

## H) Digestive Organs (Liver and Biliary Tract)

### A Scintigraphic Study on Differential Diagnosis of Hepatoma and Metastatic Lesions

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On the basis of Au colloid liver scintigraphy performed on 27 patients who had been proven to have hepatoma on post-mortem examinations, the incidence of associated liver cirrhosis was studied, in addition to the incidence of hepatoma in clinical diagnosis in 142 cases identified as cirrhosis on liver scans.

The results were as follows:

Associated liver cirrhosis was detected in 25 patients out of 27, and sex ratio was 25 to 2.

Of 142 cirrhetic patients, 26 were found to be complicated by hepatoma:

Sex ratio of liver cirrhosis in this study was 104 to 38, while that of hepatoma was 23 to 3, similar figures as in the study on the proven cases.

These observations suggest that scattered areas of decreased radioactivity (or defect) on the scintigram may, in most cases, indicate hepatoma as considered from both clinical and pathological order of frequency, and that "defect" without scintigraphic findings indicating liver cirrhosis may not be regarded as hepatoma.

### Liver Scintigram of Primary Liver Carcinoma Complicated by Livercirrhosis

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About 1/3 of the livercirrhosis cases are complicated by primary liver carcinoma, while in about 2/3 of the primary liver carcinoma cases there is a complication of livercirrhosis, indicating that there is a close relationship between primary liver carcinoma and livercirrhosis. The liver scintigram of livercirrhosis is in many cases characterized by flying bat type picture and the uptake of RI is not uniform but variable. Therefore, when it is complicated by primary liver carcinoma, it is expected that some cases would be diagnosed as false negative.

During the three-year period from January 1969 to December 1971 a total of 338 autopsies were performed at this hospital, of which there were 41 cases of livercirrhosis. Of these, 13 cases were complicated by primary liver carcinoma, that is by mixed type liver carcinoma in one case, cholangiocarcinoma in one case and hepatoma in the remaining 11 cases. The histological picture of livercirrhosis was almost laennec type. Livercirrhosis without any complication was mostly postnecrotic cirrhosis. The scintigrams of 16 cases of livercirrhosis and 10

cases of primary liver carcinoma were studied.

There was no relation between the histological picture of liver cirrhosis and liver scintigram pattern. Of the 10 cases with the complication of primary liver carcinoma defect was noted in 8 cases and no difficulty was experienced in the reading. In the remaining two cases, the tumor was located in the lower margin of the right lobe and reading was difficult. The cases will be

presented.

In reading the liver scintigrams it is necessary to not only refer to the results of the liver function tests and radioimmunoassay by  $\alpha$ -fetoprotein but also to perform palpation and conduct angiography and PTC depending on the case.

Review was made with liver photoscintigrams obtained by  $^{193}\text{Au}$  colloid in all cases.

### **Comparative Study of Hepatic Blood Flow Index Measured by the Radioactive Au Coloidal Uptake and I C G from the Viewpoint of the Hepatic Histology**

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We studied the efficacy of K-Au, the hepatic blood flow index measured by external scintillation counting of the radioactive Au coloidal uptake, and K-IGG, hepatic clearance index of indocyanine green dye. At the same time we studied in comparison with the every histological finding of the liver.

11 cases of acute hepatitis, 10 cases of chronic hepatitis, 7 cases of pre-cirrhosis, 16 cases of hepatic cirrhosis, 8 cases of fatty liver observed by laparoscopy and hepatic needle biopsy were employed and K-Au, K-ICG values of all the cases were sought within one week before and after the biopsy.

Employed cases could be sorted out into three

groups 1, acute hepatitis 2, chronic hepatitis and pre-cirrhosis 3, hepatic cirrhosis by the K-Au value measurement, but the grouping inclination was not clear by the K-ICG value measurement. Grouping of the diseases had more certainty when both K-Au and K-ICG were used than when only K-Au was measured.

As for histological findings of the liver, K-Au and K-ICG values had correlation with the portal zone fibrosis and cell infiltration, and irregularity of hepatic lobular structure.

No mutual relations could be noticed between them and destruction of hepatic cells and abnormality degree of sinusoidal space.