defect corresponding to the radiation field. Scintigraphic findings were dependent upon total radiation dose and the duration between the time of radiation and the scan. The defect was observed 2 years after radiotherapy in the longest one. If the radiation dose is low, the defect was identified initially, but was not observed permanently.

We conclude that the initial defect in the liver scan is due to temporary functional loss of phagocytes and the persistent defect is contributed by irreversible damage of interstitium of the liver.

Liver Scanning For The Diagnosis of the Fatty Liver

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Fatty liver is diagnosed by recognizing fat deposition in the biopsy specimen of the liver tissue. This pathological condition tends to show somewhat different scan patterns from those of the chronic viral hepatitis or the hepatic disease of the other etiology. This study is to clarify statistically significant differences in scan findings of such diseases.

Radiopharmaceutical used is $^{198}$Au colloides. One hundred thirty one patients studied include 49 fatty livers, 25 alcoholic cirrhosis, 34 posthepatitic cirrhosis, and 23 cirrhosis of undetermined etiology. All patients received liver biopsies and laparoscopies.

Fatty liver was etiologically classified into 3 groups, alcoholic, diabetic or obestic, and others. While the posthepatitic cirrhosis often showed hepatic deformities in scans, 33 of 49 fatty livers showed nearly normal scan patterns.

The scan findings of the fatty liver with 3 different etiologies showed no difference between each other.

The spleen uptake of radiocolloides was generally lower in the alcoholic cirrhosis than in the posthepatitic cirrhosis. Of 25 patients with alcoholic cirrhosis, 17 or 70% showed spleen images of minus or plus one degree. This rate is twice of that of posthepatitic cirrhosis. Of 49 fatty livers, 46 or 94% showed minus to plus one degree of spleen images.

Etiologically classified 3 groups of fatty liver did not show any difference in the spleen uptake.

The area of the anterior liver image was measured with a planimeter. They were 180–300 cm$^2$ for fatty liver and for alcoholic cirrhosis, 100–180 cm$^2$ for posthepatitic cirrhosis. The enlarged scan images of fatty liver and alcoholic cirrhosis showed no correlation with the degree of fat deposition in the liver tissue.

Fatty liver usually shows enlarged liver scan images with little change of the configuration and relatively low radiocolloidal uptakes of the spleen and bone marrow. This characteristic scan pattern could be the key points to differentiate the fatty liver (and alcoholic cirrhosis) from the posthepatitic cirrhosis (and chronic hepatitis) which often gives hepatic deformity with high radiocolloidal uptakes of the spleen and bone marrow.