

EVALUATION OF COLD LESIONS IN LIVER COLLOID SCINTI-
GRAPHY WITH ^{99m}Tc -PI SCINTIGRAPHY

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Patients with Space Occupying Lesion(SOL) in liver scintigraphy by ^{99m}Tc -Sn colloid were evaluated on detailed structure of biliary system with use of ^{99m}Tc -PI. We found that ^{99m}Tc -PI was useful for diagnosis of liver tumor. 60 cases, all were diagnosed to have SOL in liver scintigrams were tested with ^{99m}Tc -PI. In the first stage, RI angiography was performed by 5 mCi of ^{99m}Tc -PI i.v. injected. Arterio-phase(10-30sec.), portal phase(30-60sec.) and liver blood pool phase(1-2min.) were visualized. In the second stage, serial hepato-biliary scintigraphy were studied till 60 min. after injection. These results were evaluated comprehensively and objectively.

- 1) In 10 out of 13 cases of diffuse liver disease that were indicated as SOL in liver scintigrams, the image of gallbladder or hepatic duct obtained by use of PI coincided with the SOL diagnosed by ^{99m}Tc -Sn colloid.
- 2) In 9 out of 34 cases in hepatoma, the same defects were obtained both by ^{99m}Tc -Sn colloid and ^{99m}Tc -PI scintigraphy. In 18 cases, accumulations were recognized with ^{99m}Tc -PI in area of SOL by ^{99m}Tc -Sn colloid. And in 7 cases, larger SOL than those visualized by ^{99m}Tc -Sn colloid were obtained with ^{99m}Tc -PI. Therefore, dissociated results were obtained in 25 among 34 cases with hepatoma.
- 3) 5 cases of metastasis suspected in liver scintigrams were indicated as false SOL by ^{99m}Tc -PI. In the cases of definite liver metastasis, no accumulation of ^{99m}Tc -PI was observed in both stages. Hepato-biliary scintigraphy with ^{99m}Tc -PI was useful to determine whether defect of portal hepatic area in liver scintigrams is SOL or false SOL presented by gallbladder and hepatic duct. Moreover, in some cases of hepatoma, ^{99m}Tc -PI accumulated in the area of SOL by colloid scintigrams. It seemed that tumor cells uptake and excrete the ^{99m}Tc -PI with the same mechanism as that of normal liver cells. Therefore we thought that degree of accumulation to hepatoma appears to be affected by that of differentiation of hepatoma cells with the ability to form file. We proved that ^{99m}Tc -PI was also useful as RI liver angiography; accumulation in the first phase indicated richness of vascularity of lesions, and serial scintigraphy offered additional informations for diagnosis.

COMPARATIVE STUDY OF HBs ANTIGEN, ANTIBODY, AFP AND CEA IN CASES OF LIVER SOLs CONFIRMED BY LIVER SCINTIGRAPHY.

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Recently, much attentions are directed to the relation between HB viral infection and primary liver cancer. Comparative studies of HBs antigen, antibody, AFP, CEA by RIA were done in the cases of liver tumors confirmed by liver scintigraphy during 1977 at our laboratory. Liver scintigraphies of 350 cases were performed, in which 31 cases of SOLs were confirmed by any one of the anterior, posterior and right lateral views. With other examinations and clinical findings, final diagnoses of the primary liver cancer were confirmed in 24 cases (male 20, female 4). The other cases of liver tumors were metastasis from non hepatic origin. Among the cases diagnosed as primary liver cancers, 12 cases showed typical pattern of the liver cirrhosis with splenomegaly and increased bone marrow uptake. The ages of the patients were from 30 to 78 years old, mostly from 60 to 65 years old. 14 cases in all 24 cases showed unquestionable hepatomegaly. Nine cases (43%) were positive of HBs antigen in the 21 cases, and eleven cases (52%) were positive of HBs antibody. Nineteen cases in 21 cases (95%) were positive of either HBs antigen or antibody, and 4 cases were positive of both HBs antigen and antibody. In general Japanese population, 1.3 - 2.6% were reported to be positive of HBs antigen, and 20% were positive of HBs antibody. The percentage of the positive HBs antigen or antibody in the primary liver cancers was significantly higher than the average Japanese population. In primary liver cancers, 15 of 24 cases revealed higher than 300m μ g/ml, 12 of 24 cases higher than 1000m μ g/ml of AFP, but only 2 cases showed higher than 5 ng/ml of CEA. In cases to liver metastasis, HBs antigen and antibody were examined only 3 cases of all 7 cases, and one case was positive HBs antigen, 6 of 7 cases showed higher than 5 ng/ml of CEA.

Conclusion: As reported in Asian and African areas, primary liver cancer examined in our hospital revealed significantly higher percentage of HBs antigen than the average population, and antibody contrast to other reports with non RIA method. Systematic every efforts should be directed to investigate, prevent and decrease HB viral infection.