Scintiphotosplenoportography: Its Clinical Usefulness

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Scintiphotosplenoportography (SSP) was performed in 154 instances in 136 patients by injecting RI bolus such as $^{99m}TcO_4^-$ or ^{133}Xe into the spleen and following its course by scintillation camera. In no patient significant complications such as severe pain or splenic hemorrhage were encountered. Various collaterals were clearly visualized. According to the pattern of collateral flow RI images were classified into 3 patterns (I, II and III), and then each pattern was subdivided into 3 subgroups (a, b and c).

Pattern I has no portosystemic collaterals. Among this pattern, pattern I-a is the normal course of portal circulation. Pattern I-b shows the tortuous splenic vein. Pattern I-c demonstrates the hepatopetal collaterals. Pattern II has portosystemic collaterals and the flow to the liver. On the other hand pattern III represents the diversion of splenic flow through the portosystemic collaterals and no liver image. Pattern II and III were subdivided according to the direction of collateral flow. In subgroup a, b and c, direction of collateral flow is cephalic, both cephalic and caudal, and caudal respectively. In 48 patients with chronic hapatitis, 8 patients have portosystemic collaterals (17%). In 49 patients with liver cirrhosis, only 4 patients belonged to pattern Ia. Twenty five patients belonged to pattern IIa. Finally portosystemic collaterals were observed in 38 patients (78%). No patient with idiopathic portal hypertension belonged to pattern Ia. In 3 out of 7 patients with carcinoma of the pancreas, pattern Ic was observed.

Therefore, SSP is useful for diagnosis of abnormalities of portal venous system. Furhter more combining SSP and data processing system permits the quantitative evaluation of portal circulation such as portal circulation time or regional hepatic blood flow.

The Diagnosis of Focal Hepatic Disease and Hepatobiliary Diseases by Both Nuclear Medicine and Ultrasound

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An electronic scanner (a linear type) was used, and compared with a nuclear medicine image in both focal hepatic disease and hepatobiliary disease.

In focal hepatic disease, the detection ratio of space occupying lesions with ultrasound (80%) was slightly lower than that with nuclear medicine (90%) in 41 patients, although ultrasound could find the focal lesions in three cases which nuclear medicine couldn't find any lesions. However, ultrasound could decide the existence of focal lesions in equivocal cases with nuclear medicine. In nature of focal lesions, ultrasound showed a great power in diagnosis of cystic disease of the liver, because the evaluation of cystic lesion was easily done by ultrasound. On the other hand, the evaluation among solid lesions, especially between primary hepatoma and secondary hepatic cancer was done by combined RI examinations although a little difference between primary hepatoma and secondary hepatic cancer was found on utlrasound image.

In obstructive jaundice, ultrasound was superior to nuclear medicine, because a intrahepatic bile duct dilatation was easily evaluated by ultrasound. Such findings were found in sixteen out of 18

cases (89%) with extrahepatic obstruction.

From the present study nuclear medicine imaging should be used as the screening procedure of focal hepatic disease, and on the other hand ultrasound should be used as a first procedure in differential diagnosis of obstructive jaundice. However, the combination of both examinations could offered more diagnostic efficacies.

Comparative Study on Small Defects in Hepatic Scintiphotogram and Liver Surface Findings in Peritoneoscopic Examination —Special Reference to Cirrhotic Patients

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The subjects studied were 128 cases with liver cirrhosis, 48 cases with hepatocellular carcinoma, 26 cases with metastatic liver tumor and 26 cases with chronic hepatitis, which were histologically confirmed, and 14 cases of other liver diseases. A lesion of 3 cm in diameter can be detectable by a high-resolution camera even differentiate the true focal defect from the physiological identation or extrahepatic compression.

In order to confirm small defects in hepatic scintiphotograms with ^{99m}Tc-Sn colloid or phytate, peritoneoscopic examinations celiac angiography and serial determination of serum AFP and CEA concentrations were performed.

In 52 out of 128 cases with liver cirrhosis (LC), small focal defects ($\phi < 3$ cm) could be deteted on hepatic scintiphotograms. In 29 out of 52 cases with LC, small focal defects could be confirmed as follow; 3 cases of hepatoma, 5 of a potato liver, 9 of postnecrotic and nodular liver cirrhosis, 2 of regenerative liver nodes, 2 of concavity of the surface for liver fibrosis after sublobular hepatic necrosis, 2 of a funnel-shape liver, 6 of inter lobular hypersegmentation, 1 of small metastatic tumor with LC, 1 of small liver cyst, 3 of hemagioma, 3 of rib impression, 1 of hemangioma with LC, 1 of dilatation of the common bile duct, and 4 of unknown origin.

Small focal defects on hepatic scintiphotogram in the patients with LC were composed of the postnecrotic liver nodule, liver fibrosis, funnel-shape liver and regenerative liver, in addition to various tumors, dilatation of the common bile duct, gall bladder fosa, and rib impression.

Correlation of Computed Tomography, E. R. C. P. and Radionuclide Examination of the Liver and Pancreas

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In this report, a diagnostic method of the liver and pancreas, that to be used together with radionuclide examination and computed tomography (histogram of EMI unit on 64 × 64 matrix), and the clinical results were described.

The data of computed tomography were performed by the gammacamera system with two discriminaters (Nuclear-Chicago PHO Gamma HP6406 type) and central processing unit (Nova 1200 16 kwds with moving head disk 4047A, Diablo 31, Tektronix, and magnetic tape recorder TMZ).

The subjects of this study were 97 cases of the liver, and 10 cases of the pancreas, which were examined together with computed tomography and radionuclide examination.