

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 ultra-

sound 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 indentation or extrahepatic compression.

In order to confirm small defects in hepatic scintiphotograms with $^{99m}\text{Tc-Sn}$ 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 detected 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 hemangioma, 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 discriminators (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.

Histogram of EMI unit on 64×64 matrix were made taking average of 25 matrix from data of 320×320 matrix by other computer system.

This results showed that histogram of EMI

unit by 64×64 matrix were useful in differential diagnosis of the liver diseases, but were not on pancreas diseases.

Basic Studies on the Liver Function Test with F-18 Labeled p-Fluoroacetanilide (p-FA) In Rats

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Drug metabolizing activity is one of the most important functions of liver. p-FA is accumulated into liver and metabolized by liver Cyt. P450 to give mainly two products. While parahydroxylation liberates ^{18}F -fluoride, the ultimate products of ortho-hydroxylation are glucuronide or sulfate of p- ^{18}FA . In order to achieve liver functional imaging based on Cyt. P450 activity, we synthesized p- ^{18}FA and studied its organ distribution and metabolism in rats.

Diazonium fluoroborate was prepared from p-aminoacetanilide by the ordinary method. F-18 was prepared by $^{20}\text{Ne}(\text{d}, \alpha)^{18}\text{F}$ reaction with NIRS cyclotron. By the isotopic exchange reaction in acetonitril, 30 mCi ^{18}F -diazonium fluoroborate was obtained, then to be converted to p- ^{18}FA . Radiochemical yield was 10%, with specific activity of 0.25 mCi/mg and preparation time was about 30 minutes.

Male Wistar rats were administered $10\mu\text{Ci}$ p- ^{18}FA intravenously or orally. Rats were pretreated with methylcholanthrene, PCB, SKF-

525A or not pretreated.

Bone uptake of F-18 activity was increased gradually in normal rats and about three times more rapidly in MC-pretreated rats, which is caused by defluorination reaction of p- ^{18}FA in liver. Therefore bone activity or urinary fluoride assay can determine the whole liver drug metabolizing activity. Cyt.P450 induced rats with MC or PCB showed rapid clearance of F-18 activity from liver. SKF-525A pretreated rats were on the contrary. Relative liver F-18 activity at three hours after i.v. injection for MC-, PCB-, No-, and SKF-525A pretreated rats were 19, 33, 100, and 125% respectively. Rapid clearance from induced rats are associated with increased liver Cyt. P450 activity and conjugation reaction. Rapid clearance of fluoride and conjugated products from liver, compared with p-FA, is the basis of liver functional imaging with p- ^{18}FA , especially enlightens the regional inducibility of drug metabolizing activity of liver.

Biliary Excretion of Bucolome in the Rat... A Possible Cause for Choleresis...

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Bucolome is known to be a potent choleretic in rats, dogs, guinea pigs and men. The mechanism for choleretic action, however, remains unknown. The osmotic choleresis of bucolome or its metabolite(s) excreted in the bile has been considered unlikely, since the biliary excretion of bucolome was reported to be very small. The authors investigated this possibility, since the information

was not sufficient to exclude this possibility.

^{14}C -bucolome was synthesized from Na ^{14}C -cyanate. Final purification was done using column chromatography (sephadex, LH-20, solvent, ethanol). In Wistar male rats, sodium salt of ^{14}C -bucolome mixed with carrier Na bucolome (dose, 10mg/100g, 20mg/100g) was injected i.p. The bile was collected every 15 min for 2 hrs. and the