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RETROSPECTIVE COMPARISON OF RADIONUCLIDE SCANS AND COMPUTED TOMOGRAPHY (CT) OF LIVER CIRRHOSIS BASED ALTERATIONS OF THE CAUDATE LOBE. A.Kajita, K.Miyoshi, Y.Hasegawa, S.Nakano, J.Kojima, M.Kumano and O.Ishida. Center for Adult Diseases, Osaka and Kinki University, School of Medicine. Osaka.

Radionuclide examinations and CT of the liver in 58 patients were compared retrospectively to evaluate their value as diagnostic tests and as indicators of morphological changes.

In cases of cirrhotic liver, the right lobe exhibited relative shrinkage, while the caudate lobe underwent enlargement. Radionuclide scans and CT of 35 proved cirrhotic livers, 5 hepatoma with cirrhosis, 4 cases of chronic hepatitis, 4 liver cysts and 10 normal livers were analyzed using the left to right lobe width ratio in the anterior view (RI) and the caudate to right lobe width ratio (CT). CT scans were examined in order to accurately identify the main portal vein.

The two ratios were well correlated and a linear relationship was found to exist between them, except in cirrhosis with atrophy of both lobes ( $r=0.69$   $p<0.05$ ). Using the two ratios, cirrhotic livers and cirrhosis with hepatoma could be separated from non-cirrhotic livers in cases of diffuse chronic liver diseases.

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DIFFERENTIAL DIAGNOSIS OF JUXTADIAPHRAGMATIC ABNORMALITIES BY LIVER SCINTIGRAPHY AND RI-ANGIOGRAPHY USING Tc-99m PHYTATE. M.Yamakawa, T.Nakajima, Y.Watanabe, M.Sakura, Saitama Cancer Center, Ina, Y.Sasaki, St. Marianna University School of Medicine, Kawasaki and T.Nagai, Gunma University, Maebashi.

Sequential abdominal images with 5 sec interval have been taken routinely in our institute after i.v. injection of Tc-99m phytate for liver scintigraphy. Usefulness of the RI-angiography in combination with liver scintigraphy for the differential diagnosis of juxtadiaphragmatic abnormalities was evaluated in 76 cases including 14 intrathoracic, 45 intraabdominal and 7 intrahepatic lesions. Smoothness of upper margin of the liver in liver scintigraphy indicates extrahepatic lesions. Absence of cold area between liver and lung with downward displacement of the liver are characteristic to emphysema and cardiomegaly. Elevation can be diagnosed by intrathoracic protrusion of the liver. Perihepatic halo is seen in massive ascites. Diminished lung perfusion and disappearance of costophrenic angle in RI-angiography indicate pleural effusion. Intrahepatic lesions show concave focal defect in the liver margin, of which vascularity can be assessed by RI-angiography.

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A NEW MEASUREMENT METHOD OF PROPORTION OF BLOOD SUPPLY BETWEEN HEPATIC ARTERY AND PORTAL VEIN (P/A RATIO) WITH XE-133

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When radioactive Xe-133 is administered intravenously, most of it is eliminated from the lung. Only a small part of it passes through the lung and flow into the liver and other organs. By use of the tracer in the liver, we were able to determine the hepatic circulation. Patients with liver diseases were studied before eating, after eating and after exercise. First, 20mCi of Xe in 1 ml saline solution were flushed into the antecubital vein. And the course of activity through the lung to the spleen and the liver, was detected by a gamma scintillation camera for 10 minutes and simultaneously recorded on a digital magnetic tape. From the time activity curve, by mathematic treatment, radioactivity of the input was determined, which had usually two peaks; the first was considered to be related to the blood flow mainly via the hepatic artery, the second to that via the portal vein. There is a predominant decrease of P/A ratio in cirrhotic patients. After dieting, there was a marked increase in the portal blood flow. After exercise there was a marked decrease in the portal blood flow.

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HEPATOBIILIARY SCINTIGRAPHY USING Tc-99m LABELED COMPOUNDS; AN EVALUATION OF CONGENITAL BILIARY ATRESIA AND NEONATAL HEPATITIS. Y.Ichiiya, S.Yakabe, Y.Oshiumi, I.Kamoi, T.Imoto, K.Matsuura and K.Ikeda. Department of Radiology, Department of Pediatric Surgery, Faculty of Medicine, Kyushu University. Fukuoka.

Hepatobiliary scintigraphy using Tc-99m labeled compounds (parabutyl IDA, Pyridoxylidene isoleucine and diethyl IDA) was performed in 46 infants and young children (57 studies); including the patients with 19 congenital biliary atresia (CBA), 11 neonatal hepatitis (NH) and 16 postoperative CBA. Preoperative differentiation of CBA and NH is important. In this series, 17 among the 19 CBA and 8 among the 11 NH were correctly diagnosed by presence or absence of bowel excretion of the radionuclide on scintigraphic images. Two CBA were falsely interpreted as having the bowel excretion due to patients' motion. Three NH had no bowel excretion, although they had the patent biliary systems. Eleven (6 CBA and 5 NH) also received scintigraphy using I-131 Rose Bengal. In comparison with I-131 Rose Bengal and Tc-99m labeled compounds, there was no difference in bowel excretion. Scintigraphic findings in postoperative CBA patients well correlated with their clinical courses and patients having no bowel excretion in scintigrams had poor prognosis.