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A RELATION BETWEEN HEPATIC BLOOD FLOW AND VARICES OF ESOPHAGUS IN HEPATIC DISEASE. K.Nagase, A.Tanaka, S.Ishida and H.Uchimura. Physics Laboratory, Juntendo University School of Medicine. Tokyo.

In the case of congenital atresia of bile duct, it is known that less disturbance in the hepatic function leads to a good result after the operation. Recently, with the increase of number of the survivors after the operation of congenital atresia of the bile duct, it become a serious problem that hepatic disturbance, especially the cirrhosis of the liver and the portal hypertension. We observed the hepatic blood flow using RI which can be used repeatedly in order to study simple the process of those cases. As the RI, we used Tc-99m which was bolus injection physiological sodium chloride solution in vein.

As the result, the count of the RI on a liver increased to a peak value following the injection and then gradually decreased in normal cases. However, it was found that the decrease after the peak was delayed in the case of the cirrhosis of the liver and especially in the portal hypertension.

Thus we conclude that the present method is a useful examination to discover the cirrhosis of the liver and the accentuation of the portal hypertension of a child.

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DETERMINATION OF REGIONAL BLOOD FLOW IN HEPATOMA. T.Kashiwagi and K.Kimura. Department of Medicine, Osaka Kosei-Nenkin Hospital and Division of Nuclear Medicine, Osaka University Hospital. Osaka.

Intrahepatic distribution of blood flow in 10 patients with hepatoma was determined using the Xe-133 clearance method and a scintillation camera with a computer system. Xe-133 saline solution (10-20 mCi) was injected into the hepatic artery via a catheter. Sequential radioisotopic images (time increment: 1 sec, total time: 120 sec) were obtained. After setting the hepatic region, Xe-133 clearance curves were extracted from the serial images every 6 x 6 mm element and regional blood flow for each element was calculated. The calculated regional blood flow values were displayed as a color functional image. The functional image has demonstrated that the regional blood flow in hepatoma regions is greater than that in regions without hepatoma. On the other hand, continuous infusion of Kr-81m into the hepatic artery via a catheter was performed in 4 patients with hepatoma. Kr-81m images have provided the perfusion images of the liver from time to time. Therefore it is considered that Kr-81m imaging is useful for evaluating the distribution of cytotoxic drugs in the liver in hepatoma patients treated with continuous infusion of cytotoxic drugs.

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CLINICAL VALUE OF RADIONUCLIDE ANGIOGRAPHY FOR THE DIAGNOSIS OF HEPATOCELLULAR CARCINOMA. K.Hirata, H.Endo, K.Natata, Y.Kawahara, M.Shigeyasu. Kurashiki Central Hospital. Kurashiki.

Radionuclide angiography was performed in 44 patients with hepatocellular carcinoma (HCC, 22), metastatic liver cancer (2), hemangioma (1), liver cyst (2), liver abscess (2) and liver cirrhosis (15). A bolus of 15 mCi of Tc-99m HSA was injected into the basilic vein and the liver region was imaged. The hypervascular lesion was imaged as the hot area within six seconds after the appearance of abdominal aorta by this method. These hot areas were found in 19 of 22 patients with HCC and in one with hemangioma. The smallest HCC positively imaged by this method was 2 cm in diameter. After the successful transcatheter embolization therapy of HCC, the hot area disappeared and so this method proved to be useful for the follow up of HCC therapy. In addition, cold area were found in two patients with metastatic liver cancer, one with liver cyst and one with liver abscess.

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CLINICAL EVALUATION OF LUNG UPTAKE ON LIVER SCAN WITH Tc-99m TIN COLLOID. H. Shirato\*, K. Itoh\*, C. Saito\*\*, M. Taneda\*\*, R. Koshiba\*\*, M. Furudate\* G. Irie\*. \*Hokkaido University, \*\*Sapporo General Hospital

The lung uptake of Tc99m-Sn-colloid on the liver scan were discussed. 113 scans of 3460 ones referred showed the lung uptake. 51 scans of 41 cases (positive group) in these were further selected according to the criteria to exclude unreliable factors. As a control group, 49 scans of 49 cases were also listed up from a computer data file of the nuclear medicine at random.

Disease distributions are not different between the positive group and control group. In survival rate at 30 days after the liver scan, a statistical difference was shown between the positive group and the control group. A demonstration of the lung on the radiocollid scan seems to indicate a poor prognosis which has been repeatedly reported. However, prognostic reliance to the lung uptake was not necessarily same in a malignant disease and non-malignant disease and depends on a grade of the lung uptake. A severity of the lung uptake was most related to serum colin esterase.