L. Digestive Tracts (Liver and Biliary Tract)

Investigation of 30 Hepatocellular Carcinoma Cases Detected During the Observation Period for Chronic Hepatitis or Liver Cirrhosis

Takeyoshi IMAEDA, Kouhei SENDA, Toshimitsu KATO, Shuichi ASADA, Hidetaka DOI
Department of Radiology, School of Medicine, Gifu University

During the last 11 years, we have experienced 30 cases developed into hepatocellular carcinoma in the follow-up of chronic hepatitis or liver cirrhosis.

We have detected 27 hepatocellular carcinoma out of these 30 cases by combined nuclear medicine procedures, such as liver scintigram, α-fetoprotein, carcinoembryonic antigen, HBs-antigen, HBs-antibody, except 3 cases with a small nodule (smaller than 1.0 × 1.0 cm) of hepatocellular carcinoma.

The changes of liver shape and size, spleen and bone marrow visualization on the follow-up scintigrams were analyzed, and also the changes of AFP, CEA, HBs-antigen and HBs-antibody titers were evaluated.

In 4 cases out of 27, their nodules with hepatocellular carcinoma were successfully resected by operation. The size of the smallest nodule was 4.0 × 3.5 × 2.5 cm.

It was concluded that those combined nuclear medicine procedures were very effective to detect a small hepatocellular carcinoma on its early stage when it would be resectable by surgical operation, and also these procedures should be performed at least one or two times every 6 months during the follow-up of chronic hepatitis and liver cirrhosis.

Diagnostic Efficacy of Multi Nuclear Scintigraphy on the Liver Cancer
—Especially, to Detect Primary and Metastatic Liver Cancer—

Yuh SAKATA, Makoto ISHIZAWA, Yoshihiko KOMATSU, Shigeteru TOMITA
The First Department of Internal Medicine, School of Medicine
Hirosaki University

From April in 1971 to November in 1977, 1,245 patients (overall 1,410 times) were studied with liver scintigraphy using 195Au- or 99mTc-colloid. For this study 550 cases, of which final diagnoses were confirmed by operation, biopsy or necropsy, were picked up.—224 with liver cancer, 114 with the other liver disorders, and 212 with normal liver.

In 242 cases of them space occupying lesions (SOL) were found—in 61 with primary hepatomer, 163 with metastatic liver cancer, and 18 with other miscellaneous conditions. 83.3% of cases with primary hepatoma had solitary or bilateral SOL and 62.2% showed moderately or strongly increased shadow of spleen. On the other hand, 62.1% of cases with metastatic liver cancer had multiple SOL and 80% showed slight or negative splenic shadow. Cases with the other miscellaneous conditions had no typical findings.

67Ga-citrate scan, from December in 1975 to November in 1977, was studied on 74 patients—14 with hepatocellular carcinoma, 6 with cholangioma, 42 with metastatic liver cancer, and 12 with cirrhosis of the liver in which SOL were suspected. Definite accumulation of the 67Ga was noted in the lesions of 24 out of 74 total cases—all of 14 with hepatocellular carcinoma, 10 of 42 with metastatic carcinoma which histology was identified as the metastasis from the undifferentiated or poorly differentiated type origin. 75Se-selenomethionine scan was studied on 18 cases—2 with hepatocellular carcinoma, 5 with
cholangioma, 6 with metastatic liver cancer, and 5 with cirrhosis of the liver.

Definite accumulation was noted in the lesion of only one with hepatocellular carcinoma of 18 total cases.

The combination studies with both $^{99m}$Tc-colloid and $^{67}$Ga-citrate scintigraphy were quite informative in differentiating hepatocellular carcinoma from other focal lesions in the liver, and in detecting histology of primary lesion of the metastatic liver cancer.

Using Hepatic Scintigraphy to Examine Primary Hepatocellular Carcinoma


*Department of Radiology, **Department of Gastroenterology Surgery, Department of Medicine, Tokyo Women's Medical College

We have discussed the diagnostic value hepatic scintigraphy for Primary Hepatocellular Carcinoma after Hepatectomy.

(Method and Objection) We have researched 15 cases during the last 10 years. The equipment used was TOSHIBA 3 inches dual scanner, 5 inches PICKER MAGNA scanner. Using $^{198}$Au-Colloid, $^{99m}$Tc-phytate. The liver was separated into 4 segments (posterior, anterior, medial, lateral), 2 areas (superior, inferior) and the cancerous part, the non-cancerous part and the size of cancer detected separately by the machine mentioned above.

(Results) Of the 15 cases examined, 11 were of simple tumor, 4 were multiple. For the sizes of tumors vary from 2.0 × 1.5 cm to 19.0 × 11.0 cm. The probability for correct diagnosis using the machine is 9 out of 15, that is 60%. Only 5 cases were tumor size smaller than 5.0 5.0 cm. The probability for correct diagnosis is 1 in 5, that is 20%. For non-cancerous part, there are 8 cases of liver cirrhosis, and 7 cases of non-cirrhosis. The probability for correct diagnosis for the 8 cases are 50%, and for the 7 cases, 71.4%. There are 4 cases where the tumor is located in 1 segment and 1 area. Here the machine can not correctly diagnose. When tumor is found in 2 segment and in the inferior area, the probability for diagnosis by are machine is 33.3%.

(Conclusion) In relation to the operation, when such a devise as many directions by camera is used sequential venous injection is necessary instead of the traditional methods to obtain a correct diagnosis.

Significance of Liver Scintigraphy from Surgical Point of View: Its Preoperative Evaluation in Patients with Gastrointestinal Cancer

Nobuo OGATA, Yukio NAGAMACHI, Akira TANIGUCHI, Yasuji NISHIDA, Norio AKIYAMA, Mitsuhsa MAEDA, Toshihiro HIRASAWA and Takuji NAKAMURA

Department of Surgery I, Gunma University School of Medicine, Maebashi

The preoperative liver scintigraphy using scinticamera was performed in 207 patients with digestive diseases. An intravenous injection of $^{131}$I, $^{198}$Au colloid and $^{99m}$Tc was used. Patients suffering from primary hepatoma were excluded in this study. A total of 92 patients with gastrointestinal cancer underwent laparotomy. The site of primary lesions and occurrence of liver metastases (%) were as follows: (a) stomach, 4/52 (7.7%); (b) colon and rectum, 9/28 (32.1%); (c) biliary tract, 2/4 (50%); (d) small intestine, 1/3 (33.3%); (e) esophagus, 0/3 (0%) and pan-

Presented by Medical*Online