H. Digestive Tracts
(Liver and Biliary Tract)

67Ga Citrate Uptake and Serum \( \alpha \)-Fetoprotein (AFP) in Hepatoma

T. Sakamoto, M. Takahashi, M. Abe, Y. Onoyama and K. Toritsuka
Department of Radiology
K. Hamamoto, T. Mori and T. Kosaka
Central Clinical Radioisotope
T. Suzuki, Y. Matsumoto and K. Honjo
First Department of Surgery
Kyoto University School of Medicine, Kyoto

67Ga citrate scintigraphy and measurement of serum \( \alpha \)-Feto-protein using single radial immunodiffusion method were performed in 70 cases with carcinoma of the liver (26 hepatoma, 5 cholangioma and 39 metastatic carcinoma of the liver).

Alpha-Fetoprotein level in 16 cases of hepatoma was increased more than 10 \( \mu g \) per ml. serum \( \alpha \)-positive hepatoma), but in 10 cases less than 10 \( \mu g \) per ml. \( \alpha \)-negative hepatoma).

About two-thirds of hepatoma showed increased uptake of 67Ga citrate markedly accumulated in \( \alpha \)-negative hepatoma rather than in positive hepatoma. In 54 cases of \( \alpha \)-negative liver tumor, 7 cases which showed highly increased uptake of 67Ga citrate were hepatoma. There was no relationship between hepatoma with cirrhosis or without cirrhosis and 67Ga citrate uptake within the lesion. 67Ga citrate uptake was highly accumulated in the lesion which was hypervascularized on arteriogram and histologically well differentiating in Edmondson's classification.

It is our conclusion that 67Ga citrate scintigraphy is a useful screening method in differentiating \( \alpha \)-negative hepatoma from other carcinoma of the liver.

Serum Fetoprotein and Liver-Scintiphotos of Liver-Cancer

A. Nihonsugi, A. Urabe and K. Hasegawa
Department of Internal Medicine, Osaka Red Cross Hospital, Osaka

By radio-isotope-immunoassay method serum \( \alpha \)-fetoprotein was determined about 370 cases of liver-deseases, among which 15 cases of 20 histologically confirmed hepatomas showed the values over 20 m\( \mu g / \)ml, but those of most of liver-diseases except hepatoma were less than
222 m\(\mu\)g/ml. Follow-up studies of 10 cases of hepatomas showed that the values of AFP in 8 cases increased progressively, but those of the rest (2 cases—one of which had a small hepatoma of 2 cm diameter confirmed by autopsy, and no space-occupying lesion in the liver-sciintiphotos), were negative over the clinical courses, while the values of AFP of metastatic cancers showed only transient initial increases, and then negative responses. Namely, follow-up study of 11 cases of metastatic cancers showed transient initial increases of AFP in 4 cases, and negative response in 6 cases, one of the rest showed a peculiar clinical course: a 66-year male had a gastric cancer with hepatomegaly, bloody ascites and positive response of AFP on admission, and after being treated by 5-FU hepatomegaly and ascites disappeared, serum AFP became negative, and then a few months later hepatomegaly again developed, serum AFP became positive response. A peculiar clinical course of hepatoma was presented: Hepatoma of 71-year male, diagnosed with liver-sciintiphotos and contrast angiography, showed temporarily negative response of serum AFP without any changes of periodically taken liver-sciintiphotos during his clinical course.

A Study of Radioimmunoassay of \(\alpha\)-Fetoprotein in Hepatocellular Carcinoma and other Diseases

K. KUSAKABE, T. YAMAZAKI and O. TAKEUCHI

Department of Radiology

T. AMOU

Institute of Gastroenterology

Tokyo Women’s Medical College, Tokyo

The detection of \(\alpha\)-fetoprotein in serum has been found helpful in the diagnosis of primary hepatocellular carcinoma.

A sensitive method for measuring the plasma \(\alpha\)-fetoprotein has been developed with the radioimmunoassay technique.

The results of \(\alpha\)-fetoprotein by single radial immunodiffusion method and radioimmunoassay are compared in 150 patients who were diagnosed hepatitis, hepatoma, metastatic liver tumor and other diseases.

The scintigram findings with 198-Au-colloid and 75-Se-selenomethionine were also compared to \(\alpha\)-fetoprotein radioimmunoassay data in these patients.

Result

1. 55 cases with hepatitis and 47 cases liver cirrhosis showed less than 150 m\(\mu\)g of \(\alpha\)-fetoprotein per ml serum. 5 cases showed about 100 m\(\mu\)g/ml in which 1 case of acute hepatitis was 1150 m\(\mu\)g/ml and 1 case of chronic hepatitis was 540 m\(\mu\)g/ml.

2. In the 3 cases with gastric cancer and 1 case with cancer of prostate, \(\alpha\)-fetoprotein increased about 100 to 1000 m\(\mu\)g/ml.

3. In 15 cases of 17 patients with hepatoma \(\alpha\)-fetoprotein increased up to 320 m\(\mu\)g/ml, while 2 cases showed 46 and 18 m\(\mu\)g/ml.