

num; 11 cases of primary lung cancer, 5 cases of metastatic lung cancer, 2 cases of malignant lymphoma and 10 others.

By PHO/CON, localization of ^{67}Ga deposit was divided to 3 groups; 1) mediastinal region, 2) hilar region, 3) lung field. The localization of lesions in each group was compared with the findings of CT image.

In group 1) and 2), mediastinal lymphnodes were tried to identified.

The tomoscan and CT were well correlated in almost all cases. In some post irradiation cases, garium scintigraphy was negative and CT image was able to detect the lesion.

The RI tomoscan, PHO/CON, can facilitate the localization of Ga accumulation by tomographic manner and it appears to be possible to identify subdivided mediastinal lymphnode groups by combination of the tomoscan and CT.

Comparison Studies on Diagnoses of Hepatocellular Carcinoma by Multiplane Tomographic Scanner and Scintillation Camera, and Diagnosis by Computed Tomography

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Forty-nine patients with liver tumors were examined by multiplane tomographic scanner (PHO/CON) and scintillation camera and 8 patients with hepatocellular carcinoma among the above 49 patients were further studied by computed tomography using ACTA 0-100 (CT). Two patients among the above 8 patients were performed autopsy.

PHO/CON was superior to scinticamera in obtaining clearer images of space occupying lesions. The liver lesions were detected in all of the 8 patients with hepatocellular carcinoma by

using PHO/CON and in only 4 patients in the case of CT.

The autopsy disclosed that the hepatic lesions almost corresponded to the cold areas on PHO/CON, while on CT it was often difficult to detect the tumor lesions, because there was probably no clear distinction in X-ray absorption between cancerous lesions and non-cancerous portions. However, clearer outline of the lesions might be detected by using both PHO/CON and in some cases.

Retrospective Comparison of Radionuclide Imaging and Computed Tomography of the Intrahepatic Mass Lesions

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Forty-four patients with intrahepatic mass lesions were proven at either autopsy or surgery, or on angiography, were studied by both radionuclide imaging and computed tomography (CT). These two examinations were performed with intervals less than 2 weeks on both primary and secondary liver cancers and less than 4 weeks on

cystic liver diseases. Of 44 cases, 18 were primary liver cancers (hepatocellular carcinoma: 16, hepatoblastoma: 2), 18 were secondary liver cancers and 8 were cystic liver diseases (simple cyst: 4, polycystic disease: 4).

Radionuclide images were obtained 30 min. after intravenous injection of 2mCi $^{99\text{m}}\text{Tc}$ phytate,

from 3 projections using gamma camera. CT images were obtained using ACTA 0-100 and to enhance the contrast, all cases but one had rapid intravenous injection of 65% meglumine diatrizoate (100 ml).

In primary liver cancers, detectability by radionuclide imaging (89–100%) was much higher than that by CT (50–60%). As with this result, we think of some factors as follows: information obtained by our available CT is sometimes limited by motion artifacts and the initial positive enhancement of the contrast material can not be expected because of its long scan time. We guess also further factors as follows: the attenuation value of the tumor tissue may be equal to that of the surrounding liver tissue and the prolonged positive enhance-

ment of the contrast material may not be expected because of even opacification through the whole body. From our experience it seems that the detection of primary liver cancers excluding cholangioma by CT may be much due to the necrotic change within the tumor. Therefore, it can be said that radionuclide imaging still remains useful in screening out the primary liver cancers.

In secondary liver cancers and cystic liver diseases, small mass lesions which failed to be detected by radionuclide imaging, were clearly delineated by CT. CT is useful for the detection of these kinds of mass lesions.

In addition, CT is of much help to exactly localize mass lesions in the liver for the purpose of the surgical procedure.

Comparison between CT and Radionuclide Imaging on Abdominal Lesions

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We made a comparative study of X-ray computed tomography (CT) and liver scintigraphy on the detectability of 82 cases of hepatic lesions and the determination of their extension.

Our 82 patients were consisted of 12 cases of hepatoma, 6 of metastatic liver tumor, 7 of hepatic cyst, 9 of other hepatic tumor, 5 of liver cirrhosis and 45 of other lesions.

CT was superior to radionuclide imaging in 20 cases in detecting hepatic lesions (hepatoma 2, metastatic liver tumor 2, hepatic cyst 3 and other lesions 13). In 4 cases of them, the lesion couldn't be detected by radionuclide imaging. In 16 cases with the detected lesion, it was difficult to determine whether their lesions were intrahepatic or extrahepatic.

Radionuclide imaging was superior to CT in

2 cases of hepatoma. Both cases could be detected, but couldn't be determined their extension by CT.

On the whole, CT was superior over radionuclide imaging on the detectability of localized hepatic lesions and the determination of their extension. However, the radiation dose of CT is far more than that of radionuclide imaging, and no information about hepatic function can be obtained by CT.

From this comparative study, we conclude that these two examination should be complementary and one cannot completely be substituted for another. So, we have to exactly know the difference between the two methods and make most of each specific merits for the diagnosis of hepatic lesions properly.