

COMPARATIVE STUDY OF COMPUTED TOMOGRAM AND RI SCINTIGRAM IN LIVER DISEASES

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Out of 74 computed tomographed cases with liver diseases, 20 cases in which diagnosis was almost completely differentiated by surgical operation, etc. were studied in comparison with scintigrams. The 20 cases included 4 with hepatoma, 3 with hepatocirrhosis, 7 with liver metastasis, 1 with liver abscess, 1 with bileduct dilatation, and 4 with liver cyst.

1) In Hepatoma, computed tomography was found to contribute little to differential diagnosis, because the difference in density was not so clear in contrast to normal tissues, while in scintigrams, their findings were well visualized as space occupying lesion.

In the present paper, scintigrams and tomograms taken in one case are demonstrated. The tests were performed 2 and a half years after resecting 80% of the liver on account of liver cancer. A part of the remaining left lobe enlarged enormously, invading the removed right lobe.

2) In a case with liver cyst, succesful detection of the lesions by both scintigram and CT could be performed to the same accuracy. However, in polycystic liver, CT was superior to scintigram in terms of diagnosability. In other words, the lesions could be clearly demarcated as a low density area within the entire liver.

3) In liver abscess, though encountered only once, the lesions could be better visualized by CT than scintigram.

4) Liver metastasis could be observed as a low density area with irregular boundary. Clear differentiation from polycystic liver was possible.

5) Dilatation of intrahepatic bileduct due to jaundice, etc. may occasionally be observed as irregular, large and small sized, low density areas. In such case, differential diagnosis from liver metastasis is rather difficult. However, CT value of the former seems to be slightly lower than that in liver metastasis.

COMPARISON BETWEEN THE LIVER SCINTIGRAMS AND THE CT IMAGES

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Among the 123 cases of the hepatic disease studied by the liver scanning and the CT, 77 cases were analysed in this study. These 77 cases include: the hapatitis, 18 cases; the liver cirrhosis, 22 cases; the liver cysts, 5 cases; the liver abscess, 3 cases; the primary hepatoma, 9 cases; and the metastatic liver tumors, 20 cases.

The liver scanning was carried out after the intravenous injection of ^{99m}Tc phytate by using the Toshiba Gamma-camera GCA 102S. Three scintigrams including frontal, dorsal and right lateral views were obtained. CT images were obtained by the EMI 5005, using the contrast enhancement technique on the cases suspicious of the localized hepatic lesion. In the cases of the diffuse hepatic diseases, the CT did not reveal any specific findings. On the other hand, the scintigram was effective in describing the coarse and sparse uptake of the radionuclides and also the uptake of the spleen and bone marrow which reflects the decreased liver functions. In the localized hepatic lesions, the CT described the mass in all 9 cases of the hepatoma, but scintigram failed to reveal the mass in one case which was diagnosed to be liver cirrhosis. In one case of the metastatic liver tumor, the metastatic deposit confirmed by the angiography could not be shown by either scintigram or CT. In 3 cases of the liver abscess, both scintigrams and CT could confirm the lesion, but the CT was more effective in the diagnostic accuracy than the scintigram. In 5 cases of the liver cysts, the scintigram was effective in 4 cases, and CT revealed the mass in all 5 cases. In one case which the scintigram failed, the CT showed a small lesion. In these 5 cases, the CT was also superior to the scintigram in the diagnostic accuracy. Even in the localized hepatic lesions, the liver scintigrams have shown unexpectedly fewer cases of the false negative, as the multi-direction scannings were obtained and viewed carefully, although the the scintigrams has limitation of the machine's detective ability and could not pick up smaller lesions.