Scintigram of Carcinoma of the Liver

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^{198}Au liver scanning is a useful method to detect a space occupying lesion such as carcinom of the liver. Photoscintigram using Gaussian filter is discussed to evaluate limitation of the detection of space occupying lesion and accuracy of its contour on liver scanning in comparison with conventional photoscintigram.

The photoscintigram was performed by a Shimazu scintiscanner (SCC-130W type, 2 detectors, $3 \times 2''$ crystal, a 19 hole honeycone collimater, F.D 10 cm).

Variation of count rate was demonstrated proportional to distribution of density on film.

The photoscintigram could detect accurately a space occupying lesion in phantom changed as much as variation of count rate was close to each other. If the variation of count rate was 10%, it was shown as the density of 0.1 on film. Relationship between count rate and density on film was linear from 100 to 200 c.p.s., and the density on film was from 1.2 to 2.0.

^{198}Au liver scanning and angioscanography using ^{131}I-MAA were performed in 41 cases: 38 cases with carcinoma of the liver and 4 cases with cyst of the liver. Three types of space occupying lesion were classified: massive, multiple nodular and diffuse types. However, a diagnosis of carcinoma of the liver was not established only by ^{198}Au liver scanning. Enlargement, deformity and displacement of the liver were recognized as indirect signs of tumor of the liver, especially on slow growth of tumor of the liver.

The angioscanography disclosed positive scan of 88% in primary carcinoma of the liver, 27% in metastatic carcinoma of the liver, and no positive scan in cyst of the liver. Therefore the angioscanography was useful to establish a diagnosis of carcinoma of the liver.

Visualization of the Spleen in the Liver Scan

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The photoscintigram using Gaussian filter that shows the difference of density on film in proportion to the variation of count rate can detect a space occupying lesion measuring 3 cm in diameter in the liver, and its contour is superior to conventional photoscintigram. The angioscanography using ^{131}I-MAA is effective to establish a diagnosis of malignant tumor of the liver.

The splenic visualization occurred in 41 (54.8%) out of 75 cases without past histories of the hepatic disorders and without abnormal functioning of the liver such GOT and GPT.

It has been reported that the visualization of the spleen means an abnormal functioning of the liver. Splenic visualization on the liver scan seemed to be occurred in the case of splenomegaly, and it would be related with increased blood flow to the spleen and enhanced functioning of the reticuloendothelial system of the spleen.