liver volume and surface area demonstrate the actual volume and area, remains the problem. However, our results suggest that this method is very useful in following the clinical course of patients with liver diseases.

Evaluation of Scintigraphic Technique for Liver Imaging

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Scintigraphic technique for liver imaging employed at Hokkaido University Hospital during Janualy, 1968 to August, 1976 were evaluated.

The material reviewed consists of 4552 examinations. The radionuclides used were ^{198}Au-colloid, ^{99m}Tc-S-colloid, ^{99m}Tc-Sn-colloid and ^{99m}Tc-phytate.

One-third of the scanned images obtained by using ^{198}Au-colloid showed poorer resolution compared with the images of scinticamera with or without blended filter using ^{99m}Tc-phytate.

It was rather diffidult to find optimal settings when obtaining blended images, and more than a half of which appeared to be unsatisfactory for diagnostic purpose.

Whereas, the images without blended filter produced relatively satisfactory result in cases that the focussing were correct. No significant difference, however, was seen among these three methods, as far as the diagnostic accuracy was concerned.

The phantom experiments demonstrated no observable difference between scanned images with ^{198}Au and these with ^{99m}Tc, but the images by scinticamera revealed superior result with ^{99m}Tc probably due to the different use of collimator.

It was revealed that the images by camera showed better resolution when increasing radioactivity, and that 300,000 counts appeared to be optimal for routine use.

We are routinely performing scintigraphic examinations for the liver from A-P, P-A, right lateral and left lateral directions, either with rectilinear scanner using ^{198}Au-colloid or with scinticamera using ^{99m}Tc-phytate. ^{99m}Tc-Sn-colloid is also used in cases of studying the more detail the spleen.

The blended filter is not in use at present.

Diagnosis of Primary Hepatoma by Radioisotope Image Processing with a Digital Filter and Estimation of Serum AFP

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Recently digital computer system is commonly used for scintillation camera data processing. Correction of scintillation camera field inequality is one of important problem. But, clinical evaluation of the correction system is not established. In order to reduce the effect of the deteriorating cases or to enhance the information contained in image, a digital filter using the high speed Hadamard transform of RI image is presented.

The observed image is expressed by the convolution of true radioisotope distributions and the impulseresponse of instruments. For improving the resolving power of the system, the Hadamard transform of observed digital image is performed as follow:

$[G'(u, v)]=[H(u, v)][g'(u, v)][H(u, v)]$, where $g'(u, v)$