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SEGMENTAL ASSESSMENT ON RADIONUCLIDE IMAGES OF THE LIVER. H. Oyamada, S. Terui, H. Kawai, H. Fukukita. National Cancer Center Hospital. Tokyo.

The cases having SOL (space-occupying lesion), the segment of which has been already confirmed by other modalities such as echography, X-ray CT, angiography, etc., are examined from the standpoint of understanding the extension of the segment by identifying the location of the above SOL on both ordinary scintigrams and SPECT (single photon emission computed tomography) images. In this study we followed the Couinaud's segmentation.
Subsequently, we came to a conclusion that, in fairly many cases, segmental assessment of the liver might be possible, and the ordinary scintigrams and SPECT images were complementary to each other. In addition to this, we realized that the segmental expressions of the liver in the previously published articles concerning nuclear medicine were partly incorrect. Concretely, they are the borderlines between the right anterior segment and right posterior segment on the anterior, right lateral and posterior views. The borderline between the superior area and inferior area of the left lateral segment is also incorrect on the anterior view.
Although radionuclide images are inferior to other modalities in the resolution, we do think that this kind of effort will bring about improvement of diagnostic capability in the field of hepatic nuclear medicine.

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COOPERATIVE STUDY ON THE CLINICAL EFFICACY OF SPECT IMAGES OF THE LIVER. H. Oyamada (Efficacy Committee in the Medical and Pharmaceutical Committee, Japan Radioisotope Assoc.; Natl. Cancer Ctr.), M. Iio (Chairman of the Committee; Tokyo Univ.), K. Machida (Vice-chairman; Tokyo Univ.), T. Iinuma, T. Matsumoto (Natl. Instit. Rad. Sciences).

Recently, single photon emission computed tomography (SPECT) has gradually become popular and good results have been reported from many places. Under these circumstances, the Efficacy Committee has decided to evaluate the clinical efficacy of SPECT images in detection of SOL of the liver on the basis of cooperative group study, which is composed of representative hospitals in Tokyo and its suburb.
This time we present our fundamental policy together with the protocols. In this series, we take segmental considerations about the location of SOL. The scintigraphic segmentation has been proposed by one of us (H. Oyamada). This work is performed in cooperation of G. Uchiyama (Yamanashi Med. College), K. Uno (Chiba Univ.), K. Kawakami (Jikei Med. College), A. Kubo, Y. Takagi (Keio Univ.), K. Kusakabe (Tokyo Women's Med. College), Y. Tateno, T. Yamazaki (Natl. Instit. Rad. Sciences), T. Nakajima (Saitama Cancer Ctr.), J. Nishikawa (Tokyo Univ.), H. Murata (Toranomon Hosp.), and N. Yui (Chiba Cancer Ctr.).

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CLINICAL EVALUATION OF RI, US COMBINATION STUDY FOR ABDOMINAL DISORDERS. M.Noguchi, S.Ohtsuka,Y.Sasaki,H.Kurosawa,Y.Miura and Y.Maruyama. Toho University. Tokyo.

Combinated examination of ultrasonography added to RI liver scan was performed on 69 cases to evaluate its usefulness.
Methods and materials: Liver scan was performed after intravenous bolus injection of 5mCi of Tc-99m-phytate. Sequential dynamic images and four projections of static image were taken. Immediately after RI study, ultrasonography was performed at the same laboratory. Image interpretation was made by the same examiner. The composite images were analyzed and classified into two categories as useful and not useful. The useful cases were further divided into A. provided new information, B. provided additional information and C. confirmed findings of nuclear medicine. The useless cases were classified into D. did not confirm findings of nuclear medicine and E. caused confusion or erroneous clinical decision. The cases included 26 hepatic disorders, 8 biliary diseases, 3 pancreatic diseases, 24 other malignant lesions and 8 others.
Results: Number of the cases classified into A,B,C,D,E was as follows, 13,10,36,17, and zero respectively. The examples of A were detection of gall stones, pancreatic tumor, lymphadenopathy, SOL in the liver, slight dilatation of bile ducts and mild ascites. B included nature of lesions identified and number of lesions increased.

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CAVERNOUS HEMANGIOMA OF THE LIVER:DIAGNOSTIC VALUE OF Tc-99m IN VIVO LABELED RBC ANGIOGRAPHY. T.Hamada,K.Sugimura,N.Ishido, K.Yamasaki,K.Hashimoto,K.Nabeshima, I.Narabayashi,S.Nishiyama,S.Kimura,K.Ito and S.Imoto. Kobe University School of Medicine, Kobe National Hospital and Kobe Steel Hospital, Kobe

Radionuclide Angiography was performed with Tc-99m-labeled in vivo blood cells in 5 patients with hepatic cavernous hemangiomas and in 5 with hepatoma, including the analysis of time-activity curve in the regions of tumor and liver.
Cavernous hemangiomas in all cases presented perfusion defects in the early flow study and showed accumulation of radionuclide in the delayed blood-pool study. Time-activity curves of cavernous hemangiomas showed gradual increase in radioactivity for a few to more than ten minutes after radionuclide injection. It was apparently different from that of the normal liver which showed no increase in activity in the blood-pool phase. Hepatomas presented increased perfusion in the early blood-pool studies, but no apparent accumulation of radionuclide like cavernous hemangioma in the delayed blood-pool study. Time-activity curve revealed no increase in activity in the blood-pool phase.
Cavernous hemangiomas showed specific time-activity curves reflecting decreased perfusion and increased blood volume of the lesion. Tc-99m labeled RBC angiography may be useful in diagnosis of hepatic cavernous hemangioma as a non-invasive technique.