
Single-photon ECT of liver was performed on patients with diseases of liver, and detectabilities of mass lesion of liver were evaluated on conventional scintigram, ECT and X-ray CT. Multiprojective data were obtained by using a rotating table on which patients stand before the gamma camera or using a detector which rotated around the long axis of patients who lie in a gantry. The size of the liver in long axis was lengthened at the standing position on rotating table. The ECT images of the liver with a rotating table and using a detector which rotated around the long axis of patients were made almost the same observation. The ECT images of liver with 5-10 mCi of Tc-99m-phosphate or Tc-99m-Sn-colloid were displayed and at the same time, multiprojection images were performed on the ECT data. Two hundred and forty-nine cases were examined by ECT, and 76 cases in 249 cases were analyzed with conventional scintigram, ECT and X-ray CT. The false negative was 6 cases (16.2%) with conventional scintigram but it decreased to 2 cases (5.4%) with ECT. The detectabilities of mass lesions were raised by using conventional scintigram and ECT at the same time. ECT should be used in the routine examination.


We have a project to develop a preparation for liver scanning agent for ECT. For this purpose, we study microspheres (aggregated human serum albumin) labelled with short-lived, positron emitters such as Ga-67. On the fundamental and basic research for this labelling is studied used with Ga-67 which is F-ray emitting isotope instead of Ga-68, and with Ga-68 itself. We report on the optimum labelling conditions (pH, temperature, and incubation time), the physiological and chemical properties such as adhesion to glass, the tissue distribution and the images with conventional scanner.

THE CLINICAL USEFULNESS OF LIVER EMISSION COMPUTED TOMOGRAPHY USING GAMMA-CAMERA. K. Yamanoto, T. Mukai, K. Minato, N. Tamaki, Y. Ishii and K. Torizuka. Kyoto University School of Medicine Dept. of Radiology and Nuclear Medicine, Kyoto.

For these several years, we have evaluated basic study and clinical application of the single photon emission computed tomography (ECT). By using rotating gamma camera, we have become to be able to examine ECT routinely. We attempted to evaluate the clinical efficacy of ECT examination for the detection of intraparenchymal space occupying lesions.

In phantom study, ECT images could resolve at least the cold spot of 1.5 cm in diameter at every depth, which could not be revealed by the conventional scintigram. For Tc-99m-phosphate (3 mCi) liver scintigraphy, it took about 15 min. to acquire the sufficient counts, which was permissible time for routine use. The smallest liver tumor detected by ECT in clinical use was 10 mm in diameter. The three dimensional location of the tumor could be understood more easily by the observation of transaxial, sagittal and frontal sections. In conclusion, ECT using rotating gamma camera proved to be a practical method by potentiating conventional liver scintigraphy without increasing radiation dose of patients.