Several fundamental experiments on transverse section scintigram were performed using a point source in different energies, and the resolving power was improved about 5 to 10%. Also the good uniformity was obtained. In a phantom study using an Alderson mock liver a 3 cm-sized cold area could be well demonstrated as clear defect on transverse section image. Clinical trials of the normal brain and liver also were demonstrated.

Clinical Experiences of Tomo Scinticamera for the Liver and Brain Diseases

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We have experienced 53 tomo scintigraphies (Pho/Gamma HP type, Nuclear Chicago) of the liver and brain since 1972 in Kitasato University Hospital.

Method: 2 mCi of $^{99m}TcS_7$ was given intravenously for tomo scintigraphies of the liver. 30 minutes later the scaning was started, and 2–5 inches depths tomo scintigraphies was obtained by one inch interval.

Conditions were as follows: Table Mode on, Bed rotation 2 and tomo collimator was used. The brain tomo scintigraphy was obtained 1–4 inches depths by one inch interval after the administrations of 10 mCi of $^{99m}TcO_4$-intravenously.

Results: By this method it was almost impossible find small metastatic liver tumors which were difficult to detect by the present photo scintigraphic technique. However there were a few cases which were suggested the presence of small metastasis of the liver by the tomo scintigraphy.

The depth of the tumor was detected easily by this method, especially it was effective for the drainage of the liver abcess.

We found it was particularly useful to determine the location of the brain tumor when the radiation therapy was considered in postoperative period.

Compared to the parallel hole collimator, the tomo collimator was thin, and showed less resolution ability.

We think further improvement is necessary for clinical diagnosis of the liver and brain diseases.

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