

A Portable Scanner

S. MAMMOTO, H. KAKEHI, G. UCHIYAMA and K. SAEGUSA

Department of Radiology, Chiba University School of Medicine, Chiba

A easily removable, small sized and less weighed rectilinear scanner has been constructed. Generalized use of the new scanning agents, short lived lower energy gamma emitter, allows us to make a scanner smaller and simpler than ever.

Two inch thick, 2 inch diameter sodium iodide crystal with thin lead shielding gives lighted detector assembly. Three kinds of thin septal collimators were home-made by the Harris' method. Resolutions and sensitivities of three home-made and a ready-made collimators were compared with each other by using the point and extended sources of several kinds of gamma energies. Tested

KeV), ^{203}Hg (279 KeV), ^{131}I (364 KeV), and nuclides are ^{125}I (27, 35 KeV), ^{57}Co (122 ^{198}Au (412 KeV). Organ phantom scans suggested how to choose the collimator specifically for each case.

Several patients who were not able to transport to the scanner room were scanned. The myocardial scan with ^{131}Cs and the thyroid scan with ^{131}I were proved to be as good as the conventional scan. Though the liver and the kidney scan with ^{198}Au and ^{203}Hg respectively were not so good as the conventional scan, they were useful enough for the urgent purpose.

SCINTILLATION CAMERA

H. YASUKOCHI, T. MIYAMAE, D. ISHIKAWA and S. LIN

Department of Radiology, Faculty of Medicine, University of Tokyo, Tokyo

After the 6 years experience on domestic 5" crystal scintillation camera, we had a conclusion that this apparatuses will not be utilized clinically mainly by for its small crystal size. Recently another scintillation camera with 11.5" crystal was set and used for clinical purpose. Some experience on this scintillation camera will be reported here.

SENSITIVITY:—The characteristics of this apparatus is its high sensitivity that lead to get dynamic scintigrams using mCi order of $^{99\text{m}}\text{Tc}$.

On heart dynamics, the valuable scintigrams will be received serially with one second intervals on right side cavity of the heart and with 2—5 seconds intervals on left side. The right to left shunt is easily detectable, but the dynamics in left side is rather difficult to diagnose because its long bolus.

Renal dynamics will be detected by 3—5

second interval serial scintigram, they show aortic and renal patterns of $^{99\text{m}}\text{Tc}$ dynamics. On these organs the ^{131}I -hippuric acid scintigrams are also valuable to detect the focal function. In these organs, conventional scanner and renogram studies are also valuable.

It is difficult to detect brain dynamics by $^{99\text{m}}\text{Tc}$ but stational scintigrams of brain are clearly detectable within one minute exposure. Therefore multidirectional scintigrams are easily detected without patient loads. The details of scintigram by camera are sometimes more valuable than scanner's.

RESOLUTION:—Resolution by multihole collimator shows less accuracy compared with that of conventional scanner, but pinhole collimator's in short distance shows better results. Therefore thyroid scintigram is suggested by this apparatus.

Some large organs just as liver and lung