

A) Apparatus

Remodeling of the Whole Body Scanner

H. OYAMADA

National Cancer Center

S. NAKANISHI, M. TODA, F. MARUOKA and I. NODA

Shimadzu Seisakusho Ltd.

Recently, we have made a whole body scanner of a dual probe type, having some newly designed attachments for better handling in daily works.

The probes (5 inches crystal) are vertically opposed and can move for 30 cm on both sides from the center and 190 cm longitudinally. The scan speed can be changed from 20 cm/min to 500 cm/min continuously. The spacing is provided for 1.5, 3.0, 4.5, 7.5, 9.0, 15.0 and 30.0 mm. The recording system is composed of two channels of each dot and photo record. The image ratio is provided for 1/1, 1/3 and 1/5. The scanning table contains X-ray cassette for determining exact localization.

The newly developed attachments are as follows:

1) Program scanning attachment.

The program scanning attachment is designed for the scanning of the area of interest, which results in saving the scanning time. The attachment is composed of photo luminescence diode and photo transistor, and attached to one of the dot recording heads. The area of interest is demarcated with black ink on the scintigram paper.

When this attachment reaches to the black line, the photo transistor recognizes the changes of the brightness of the reflected light on the scintigram paper, which comes from the photo luminescence diode; resulting in advancing the space. Thus, only the area of interest can be scanned without scanning unnecessary area.

2) Display of total counts or counts after rate down.

While the scanning is being done, the total counts or counts after rate down are displayed. This enables us to calculate the activity in the area of interest in combination with the program scanning. This is particularly important to determine the radiation dose to the lesions in treating the thyroid carcinoma with radioactive iodine.

3) Simultaneous recording of profile scan pattern with the scintigram.

While the scintigram is taken, integrated counts from each line are plotted on the recorder chart, offering the more exact profile pattern.

The above-mentioned newly developed attachments are considered to be very useful.

Automatic R.I. Injector and Remote Controlled Gamma Imaging Table

M. KANEKO, C. YAMAMOTO, M. WATANABE and A. MISHIMA

Department of Radiology, Nagoya University School of Medicine, Nagoya

In order to reduce the radiation dose to the personnel working in nuclear medicine laboratories, an automatic R.I. injector was devised and reported before. This injector was modified for

the convenience of routine works. The source of ^{99m}Tc was shielded with lead. The leakage dose was reduced to 20% even nearby handling of the injector. Dose is much more reduced by