

good quality image in a short period of time by raising the detecting efficiency. This paper sets forth the principle of this system, studies the performance and indicates the clinical data.

A linear scanning table is installed under GCA-202 Gammacamera attached with parallel hole collimator, and the table is moved at constant speed along X-axis direction of the field of view. The image displayed on CRT is moved in X-direction synchronized with this movement, and this is recorded on Polaroid film or on X-ray film of life-size adaptor. The field of view of Gamma-camera is divided into rectangle by means of splitter and the CRT displays the brightening

spots only inside the rectangle. The size can be set to any size.

We have checked how the position resolution, linearity, and uniformity of image change when the X-direction width Δx of rectangle is changed from 5 cm to 20 cm. Position resolution becomes better as Δx becomes smaller but detecting efficiency becomes less in proportion to Δx . If the tabletop is scanned two times in X-direction, it is possible to measure the width of 50 cm of Y-axis direction. Whole-body scanning is performed using ^{99m}Tc pyrophosphate and good whole-body image is obtained in 10 minutes.

A New Approach for Profile Scanning

M. TODA, S. NAKANISHI and Y. HIROSE

Shimadzu Seisakusho Ltd., Kyoto

By this time, to investigate the RI distribution of human body, a bed for profile scanning and a slit collimator have been used.

But by using a whole-body scanner with focused collimators, We can get not only a scintigram of whole-body, but also a profile scanning data. Profile scanning with focused collimators is better than that of slit collimators at resolution and uniform sensitivity because of their good spatial resolution.

Method: In this case, two integrators are prepared. While one integrator accumulates the counts over one transverse scanning, the other one holds the output proportional to the accumulated counts over a previous scan line until the end of the transverse scanning. At this moment, The output terminal is switched to the output of the former integrator which holds the output at this

time and the latter one releases its hold to begin accumulation over next scan line.

Result: Slit collimators used for profile scanning have poor spatial resolution for longitudinal direction and have non-uniform sensitivity to transverse direction because of different solid angle. On the other hand, focused collimators have very good spatial resolution to all direction and by moving these collimators to transverse direction, it is possible to make the sensitivity distribution uniform over the transverse direction.

Conclusion

- (1) Profile scanning with focused collimators is better than that of slit collimators at resolution and uniform sensitivity.
- (2) By applying this method to whole-body scanner, we can get a scintigram of wholebody and a profile scanning data simultaneously.