Remodeling of Scintiscanner for Subtraction

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Purpose: Recent diffusion of nuclear medicine is striking and various data of nuclear medicine have been applied to clinical use extensively. Hepatic scintigram in 'in vivo' measurement is indispensable. However, pancreatic scintigraphy which is relatively easy has hardly been employed in routine test probably due to diagnostic and reading problem. We attempted to devise subtraction scintigraphy using simultaneous double tracer method to facilitate the reading of pancreatic scintigram and to develop new diagnostic capacity.

Method: Upon incorporating two kinds of tracers simultaneously (e.g., ^{198}Au-colloid and ^{75}Se-selenomethionin), the count of one tracer was properly reduced with use of the divider circuit of the dot controller in the double probe type 2-channel scintiscanner, and subtraction was made at one to one pulse rate. The result was processed by the rate meter and scintiphoto controller to produce a subtraction scintiphotogram. The other photo controller was used to select and record either the divisor or the divident. Moreover, the scanner was remodeled so as to be usable as an ordinary scanner by means of the change-over of switch.

Results: With ^{198}Au and ^{75}Se placed under the detector, reasonable subtraction was possible but statistical variation became an issue when the result of subtraction approached zero. Though there were some difficulties in clinical application such as setting of conditions, this method was tested anyhow and subtraction scintigram became available.

Conclusion: Though subtraction is unavailable with most of the 2-channel scintiscanner, it becomes available by simple change of wiring. (In our case, only coaxial cables and a rotary switch were added.)

Scinti-roentgenphotofluorography

(RIX photofluorography)

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In order to get anatomical information the trial was made to overlap the image of scinticamera with photofluorogram. The thyroid of the patient intaken with radioactive isotope laid on the scintigraphic table was imaged with Polaroid camera with parallel collimeter of the scinti-