

C) Measurement B

(in vivo)

Some attempts to improve the photo-recording system of scintiscanner

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It has been said that the photo-recording method is most excellent for scintigram-recording. However, it still has a few points to be improved, that is, the difficulty in finding out the optimum recording condition, the S-shaped characteristics of film density to count to be recorded and no common base for the comparison of scintigram quality.

We made some attempts to improve those drawbacks.

Methods

(1) Recording method in which each succeeding dot to be recorded does neither overlap nor has space between them.

By conventional method, the film density is obtained by total amount of exposure given by overlapping of each succeeding dots, but by our new method, we record 3×1 mm size of dot each after 1 mm scan, the density of which is proportional to counts in 1 mm scan interval.

(2) Use of percentage standard deviation as a common base of comparison of scintigram. As the common base of comparison, we used percentage standard deviation of film density which

is same as that of counts in 1 mm scan interval.

(3) Linealization of film density to counts characteristics.

We digitized the analog output voltage, which is proportional to the counts in 1 mm scan, into ten levels and then each output is added with proper weighting factor by a adder circuit to produce analog voltage which produces a dot with density proportional to the counts.

Conclusions

By these new attempts, the following points are achieved.

(1) It became possible to compare the quality of scintigram upon the common base of standard fluctuation of scintigram density.

(2) The film density to counts to be recorded, was compensated to have linear relationship, so that the higher ability of defect detection is expected.

(3) This system can be easily used as a display system of computer processed scintigram data.

(4) The recording condition setting became very easy.