Summary

Method of Evaluating the Shielding Effect of Syringe Shields and Plungers

Yoshizumi FUKUNAGA*, Nobuhiro MATSUOKA**, Tadashi MAE***
and Toshihiko KOUNO****

**Department of Investigating Examination, Osaka Perfectural Nakamiya Hospital*
***Department of Radiology Osaka Hospital, Anti-Tuberculosis Association Osaka Branch*
****Department of Pharmacon Radiological Technology, Sakai Municipal Hospital*
*****Department of Nuclear Medicine, Han-nan Chuuou Hospital*

The opportunities to use the syringe-type radiopharmaceuticals being supplied by manufacturers to conduct examinations in the ordinary clinical practice of nuclear medicine have recently increased, and the radiation doses to the fingers of those performing the examinations has been reduced. However, not much is known about the shielding effect of the syringe-type syringe shields and plungers. In order to evaluate their shielding effect, we devised a method in which leakage rates are calculated from the counts of the image data acquired with a 2-detector scintillation camera and compared with the values and graphs. The values made it possible to determine and compare single-direction leakage rates, whereas the graphs made it possible to determine and compare 360°-direction leakage rates. This method is convenient, enables satisfactory result to be obtained in any institution, and appears to make it easy to understand the shielding effect. The validity of this method was confirmed in a comparative assessment with a survey-meter.

Key words: Shielding effect, Plastic plunger, Tungsten plunger, Leakage rate, 2-detector-type scintillation camera, 360°-direction leakage rates.