

Summary

Evaluation of Parathyroid Imaging Methods with ^{99m}Tc -MIBI —The Comparison of Planar Images Obtained Using a Pinhole Collimator and a Parallel-hole Collimator—

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Parathyroid scintigraphy with ^{99m}Tc -MIBI was performed using two kinds of collimators, namely, a pinhole one and a parallel-hole one, to evaluate which one was more suitable for the detection of hyperfunctioning parathyroid lesions. In the studies using ^{99m}Tc source, the pinhole collimator showed better efficiency and spatial resolution in the distance where the parathyroid scan are actually performed. In the phantom study, the nodular activities modeling parathyroid lesions were visualized better on the images obtained

using the pinhole collimator. In clinical studies for 30 patients suspicious of hyperparathyroidism, hyperfunctioning parathyroid nodules were better detected when the pinhole collimator was used. In conclusion, the pinhole collimator was thought to be more suitable for parathyroid scintigraphy with ^{99m}Tc -MIBI than the parallel-hole collimator.

Key words: ^{99m}Tc -MIBI, Pinhole collimator, Parallel-hole collimator, Hyperparathyroidism.