

Tc-99m-MIBI scintigraphy for detecting parathyroid adenoma and hyperplasia

Ali S. ARBAB,* Kiyoshi KOZUMI,* Akihiro HEMMI,** Keiji TOYAMA,* Takao ARAI,*
Tatsuya YOSHITOMI* and Tsutomu ARAKI*

**Department of Radiology, **Department of Pathology, Yamanashi Medical University*

We performed scintigraphy with technetium-99m-methoxyisobutylisonitrile (MIBI) in 10 patients with parathyroid adenoma (7 lesions) or hyperplasia (9 lesions). Correlation between an amount of accumulation of MIBI and histological types of the lesions were evaluated with special reference to an amount of oxyphilic cell in the lesions. Selected lesions were also evaluated for mitochondrial density by electromicroscopy and showed increased mitochondrial density in the oxyphilic cells. All lesions equal to or above 220 mg showed positive scintigraphic results despite differences in cell types. Undetected lesions were all equal to or below 100 mg. The scintigraphic results for 2 lesions with abundant oxyphilic cells were both positive although those for 11 lesions with abundant chief cells only 6 were positive, probably because these lesions were smaller in the hyperplasia group. In conclusion, MIBI uptake in parathyroid lesions was not dependent on the cell type but either on the size or functional state of the lesions.

Key words: Tc-99m-MIBI, parathyroid adenoma, parathyroid hyperplasia, hyperparathyroidism, parathyroid scintigraphy