

Tc-99m MIBI SPECT in Detecting Metastatic Papillary Thyroid Carcinoma in Patients with Elevated Human Thyroglobulin Levels but Negative I-131 Whole Body Scan

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摘要

Abstract

Papillary carcinomas are the most common thyroid malignancies. They invade the regional lymphatics and metastasize frequently to local lymph nodes in the neck. Distant metastasis, generally to the lungs, is also common. The aim of this study is to evaluate the effectiveness of single photon emission computed tomography (SPECT) with technetium-99m methoxyisobutylisonitrile (Tc-99m MIBI) in detecting metastatic lesions in patients with papillary thyroid carcinoma (PTC) after nearly total thyroidectomy and radioiodine (I-131) treatment who present with elevated serum human thyroglobulin (hTg) levels but negative I-131 whole body scan (WBS). METHODS: Twenty patients of PTC who underwent nearly total thyroidectomy and I-131 treatments were included in this study. All of the 20 patients had negative I-131 WBS results and elevated hTg levels (hTg $\geq$ 20 microIU/mL) under thyroid-stimulating hormone (TSH) stimulation (TSH $\geq$ 30 microIU/mL). Technetium-99m MIBI SPECT was performed to detect metastatic lesions. RESULTS: Technetium-99m MIBI SPECT demonstrated lesions in 10 patients. Technetium-99m MIBI SPECT failed to demonstrate lesions in nine patients including small lymph node and lung metastases. CONCLUSIONS: This study showed that Tc-99m MIBI SPECT is a useful tool to detect metastatic lesions in PTC with elevated hTg but negative I-131 WBS. However, small lymph node and lung metastases may be missed in Tc-99m MIBI SPECT. In the latter circumstance, other imaging studies should be included in the follow-up protocol.