

Tc-99m-MIBI scintigraphy for recurrent hyperparathyroidism after total parathyroidectomy with autograft

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The aim of this study is to assess the sensitivity of Tc-99m-MIBI for the pre-operative localization of hyperfunctioning parathyroid glands in patients with persistent or recurrent hyperparathyroidism (HPT) after total parathyroidectomy (PTX) with autograft. **Patients and Methods:** Tc-99m-MIBI scintigraphy was performed on 7 patients (3 men and 4 women; aged 32 to 62) on hemodialysis with persistent or recurrent HPT after PTX due to secondary hyperparathyroidism. Tc-99m-MIBI of 370 MBq was injected intravenously. Double-phase planar images were acquired at 15 min and 120 min-postinjection. SPECT images of the chest in an early phase were also obtained. **Results:** All patients underwent surgery after scintigraphy. The enlarged parathyroid grafts were removed in 4 patients. An unusual location of parathyroid hyperplasia was found in 2 patients. In one patient, the abnormal graft coexisted with an ectopic parathyroid in the mediastinal region. Tc-99m-MIBI was able to identify all hyperfunctioning parathyroids correctly (100% sensitivity). In one case, a focus of the increased uptake in SPECT was considered as a false positive. The remnant of ectopic parathyroid in the mediastinum was only detected by SPECT images. **Conclusion:** Tc-99m-MIBI parathyroid scintigraphy is useful for the pre-operative localization of persistent or recurrent HPT following total PTX with autograft.

Key words: Tc-99m-MIBI, hyperparathyroidism; recurrent, autograft, ectopic