^{99m}Tc-MIBI in Differentiated Thyroid Carcinoma

TO THE EDITOR: We read with interest the recent article by Miyamoto et al. (*1*) discussing the usefulness of ^{99m}Tc-methoxyisobutyl isonitrile (MIBI) scintigraphy for detecting metastases from differentiated thyroid carcinoma. Their results supported the previous experience of Sundram et al. (*2*), Nemec et al. (*3*) and Fridrich et al. (*4*) concluding that ^{99m}Tc-MIBI scintigraphy (a) seemed suitable for the assessment and follow-up of metastases in patients with thyroid carcinoma, (b) was easily available and (c) avoided the necessity of withdrawing from hormone therapy for lesion imaging.

We would like to draw attention to the fact that data obtained in patients suffering from severe metastatic thyroid carcinoma cannot be applied to the routine follow-up of near-totally thyroidectomized patients with a thyroid remnant on ^{131}I scintigraphy but without detectable metastases. Indeed, we prospectively examined 31 thyroidectomized patients without known metastases (21 with papillary carcinoma and 10 with follicular carcinoma) with ^{99m}Tc-MIBI and ^{131}I scintigraphies performed 4–6 wk after total or near-total thyroidectomy (group 1: n = 20) or 6 mo later (group 2: n = 11). These investigations were always performed 4 wk after withdrawal from the substitutive therapy.

^{99m}Tc-MIBI (740 MBq [20 mCi]) imaging, which was centered on the neck, was performed 5, 30, 60, 90 and 120 min after injection using a gamma camera equipped with a low-energy pinhole collimator. In addition, planar views centered on the neck, thorax and superior abdomen were obtained using a large-field-of-view gamma camera equipped with a parallel-hole collimator between 30 and 60 min after the tracer injection. ^{131}I whole-body scans were performed conventionally 3–4 d after administration of ^{131}I (111 MBq [3 mCi]) using a large-field-of-view gamma camera equipped with a high-energy parallel-hole collimator.

^{131}I scans showed the presence of residual thyroid tissue in all patients, whereas a positive scan with ^{99m}Tc-MIBI was obtained only in 20 patients (64%). In addition, ^{99m}Tc-MIBI scans showed fewer foci of residual tissue than did ^{131}I scans (one with ^{99m}Tc-MIBI versus two or more with ^{131}I in most patients). The proportion of positive ^{99m}Tc-MIBI scans was 80% (16/20) in group 1 and dropped to 45% (5/11) in group 2. All positive ^{99m}Tc-MIBI scans in group 1 were visualized 5 min after tracer injection. This proportion dropped to 63%, 50% and 40% at 30, 60 and 120 min, respectively. These data also confirm the importance of early imaging (*1*).

We conclude that ^{99m}Tc-MIBI scintigraphy is of limited value in the follow-up of uncomplicated cases of thyroid carcinoma. The ^{99m}Tc-MIBI imaging does not replace ^{131}I scintigraphy. The ^{99m}Tc-MIBI scan may be used but as a complementary tool in cases of metastatic thyroid carcinoma.

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Attribution of Use of Perchlorate in Parathyroid Scintigraphy

TO THE EDITOR: In the July 1998 issue of the *Journal of Nuclear Medicine*, Lyngby (*1*) shares his experience with a procedure for consecutive thyroid and parathyroid scintigraphy in a single day. The idea presented to the readers is that sodium perchlorate (200 mg) injected intravenously will clear the ^{99m}Tc-pertechnetate activity from the thyroid, opening the possibility for parathyroid scintigraphy with ^{99m}Tc-sestamibi or ^{99m}Tc-tetrofosmin only 20 min later.

This procedure for thyroidal discharge was developed at The National Hospital, Oslo, Norway. A prospective study for evaluating the method will soon be completed, and, as at Molde Hospital, our experiences are excellent. At a national meeting during the evaluation period, the method and our experiences were shared with other nuclear medicine departments (*2*). We are happy that Lyngby is satisfied with our procedure; however, the source of the procedure is not mentioned in his letter.

REFERENCES

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