Uptake of $^{99m}$Tc-tetrofosmin, $^{99m}$Tc-MIBI and $^{201}$Tl in malignant thymoma

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$^{99m}$Tc-tetrofosmin, Thallium-201-chloride ($^{201}$Tl) and $^{99m}$Tc-MIBI imagings were performed in a patient with malignant thymoma. Tracer uptake in the primary tumor was demonstrated. The tumor-to-background ratios of planar and SPECT imagings were 1.60 and 1.98 for $^{99m}$Tc-tetrofosmin, 1.12 and 2.09 for $^{201}$Tl, and 1.19 and 1.80 for $^{99m}$Tc-MIBI, respectively. In another patient $^{99m}$Tc-tetrofosmin and $^{201}$Tl imagings were performed. Not only the primary tumor but also the direct invasions and metastatic lesions (bone metastases) were clearly detected. The tumor-to-background ratios of planar and SPECT imagings were 2.31 and 2.78 for $^{99m}$Tc-tetrofosmin and 2.45 and 3.58 for $^{201}$Tl, respectively. In $^{99m}$Tc-tetrofosmin scintigraphy we acquired delayed images, and the tumor-to-background ratios of planar and SPECT delayed images were 1.20 and 1.86, the retention ratios were −1.11 and −0.92 and the retention indices were −48.1 and −33.1, respectively. Our preliminary results suggest that $^{99m}$Tc-tetrofosmin is useful in detecting not only the primary tumor but also metastatic lesions from malignant thymoma.

Key words: thymoma, $^{99m}$Tc-tetrofosmin, $^{201}$Tl, $^{99m}$Tc-MIBI, SPECT