

Perfusion and mechanical analysis with technetium-99m 2-methoxy-isobutyl-isonitrile in a case of dilated cardiomyopathy

Tohoru TAKEDA,* Hinako TOYAMA,** Nobuyoshi ISHIKAWA,* Takeshi MASUOKA,*
Ryuichi AJISAKA,* Kaname IIDA*, Motohiro SATOH,* Wu JIN,* Takumi SAITOU,*
Takayoshi YAMANOUCHI,* Yasuro SUGISHITA* and Yuji ITAI*

**Institute of Clinical Medicine, University of Tsukuba*

***Positron Medical Center, Tokyo Metropolitan Institute of Gerontology*

With technetium-99m 2-methoxy-isobutyl-isonitrile ($^{99m}\text{Tc-MIBI}$), regional wall thickening in a patient with dilated cardiomyopathy was analyzed by the first component Fourier method. The regional wall thickening was compared with thallium-201 and $^{99m}\text{Tc-MIBI}$ SPECT imaging. Thallium-201 SPECT images showed mildly reduced perfusion in the posterior wall and redistribution in the septum, whereas $^{99m}\text{Tc-MIBI}$ images showed heterogeneous accumulation around the left ventricular circumference. By means of phase analysis, diffusely decreased wall thickening and discontinuity of percent wall thickening in neighboring segments were observed throughout the left ventricle. Regional wall motion and wall thickening correlated roughly. However, discrepancies between the mechanical function and myocardial perfusion, and discrepancies in regional myocardial perfusion between thallium-201 and $^{99m}\text{Tc-MIBI}$ were observed.

Key words: technetium-99m 2-methoxy-isobutyl-isonitrile ($^{99m}\text{Tc-MIBI}$), single photon emission computed tomography (SPECT), wall thickening, phase analysis, dilated cardiomyopathy