Longitudinal, base-to-apex myocardial perfusion abnormalities in patients with coronary artery disease

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Abstract

Gould et al reported that diffuse coronary artery narrowing causes graded, progressively decreasing perfusion along the base-to-apex, longitudinal axis of the heart after dipyridamole. However, frequency and severity of longitudinal perfusion abnormality is unclear in patients with coronary artery disease who undergo coronary arteriography. We performed positron emission tomography with ^{13}N anmonia in patients with coronary artery disease who underwent coronary angioplasty of diseased vessel. ^{13}N anmonia PET was performed at rest and after dipyridamole. The infarcted territories were excluded for analysis. All analyzed myocardial territories were perfused by coronary artery with less than 75% luminal narrowing. Longitudinal perfusion abnormalities were greater in myocardial territory which is perfused by angioplasty-performed vessel compared with that perfused by non angioplasty-performed vessel. Then, we performed positron emission tomography with ^{13}N anmonia in patients with chronic

total occlusion of the coronary arteries. However, those patients frequently demonstrated myocardial perfusion defect corresponding to the diseased coronary arteries. Therefore, we could not analyze the longitudinal perfusion abnormalities due to perfusion defect. The patients with chronic total occlusion of coronary arteries would not be suitable for the analysis of the longitudinal perfusion abnormalities.