

## Evaluation of transmyocardial laser revascularization (TMLR) by gated myocardial perfusion scintigraphy

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TMLR is a novel treatment for patients with coronary artery disease. It comprises the creation of transmyocardial channels thought to improve myocardial perfusion. Gated Tc-99m sestamibi scintigraphy was used to evaluate changes in myocardial perfusion after TMLR. Twelve patients underwent TMLR using a carbon dioxide laser. Sestamibi scans were carried out following a standard protocol prior to and 1, 3, 6, and 12 months after TMLR. Both visual and semi-quantitative assessment showed improvement in 4 patients, deterioration in 2 patients, and no change in the remaining 6 patients each. However, visual and semi-quantitative assessment were concordant in 6 patients and discordant in 6 patients. In 3 of these, semi-quantitative assessment suggested a better outcome, and in 3 patients visual assessment gave better results. Our findings in a small group of patients suggest that about a third benefited from TMLR. Gated myocardial perfusion scintigraphy using technetium-99m sestamibi is suitable for visual evaluation of changes in the lased area over time, but does not allow semi-quantitative evaluation in the patient population typically treated with TMLR. Further investigations using optimized imaging protocols, including positron emission tomography and three dimensional image presentation, are warranted.

**Key words:** myocardial perfusion scintigraphy, sestamibi, ischemic heart disease, myocardial revascularization