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## Clinical Nuclear Medicine

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## Gated myocardial perfusion SPECT in patients with a small heart: Effect of zooming and filtering

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## Abstract

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Underestimation of left ventricular end-diastolic volume (EDV), end-systolic volume (ESV) and overestimation of ejection fraction (LVEF) in patients with a small heart is a problem with the gated myocardial perfusion SPECT (GSPECT). Thirty patients with a small heart underwent rest Tc-99m sestamibi GSPECT using acquisition zooms of 1.45 and 1.78 consecutively. After reconstruction by filtered back-projection using different cut-off frequencies of Butterworth filter, LVEF, EDV and ESV were computed using a quantitative gated SPECT (QGS) program. Increasing in zooming or filter cut-off frequency resulted in higher EDV and ESV but lower LVEF. Differences in LVEF between 2 acquisition zooms were decreased by sharper cut-off frequencies. A higher zooming and/or a sharper filter might be suggested for quantitative GSPECT in patients with a small heart. © 2007 Lippincott Williams & Wilkins, Inc.

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## Author keywords

Ejection fraction; Filtering; Gated SPECT; Left ventricular volume; Small heart; Zoom

## Indexed Keywords

EMTREE drug terms: methoxy isobutyl isonitrile technetium tc 99m

EMTREE medical terms: adult; aged; article; clinical article; female; heart left ventricle ejection fraction; heart left ventricle enddiastolic volume; heart muscle perfusion; human; male; quantitative analysis; single photon emission computer tomography

MeSH: Coronary Circulation; Gated Blood-Pool Imaging; Heart; Humans; Models, Statistical; Myocardium; Perfusion; Systole; Technetium Tc 99m Sestamibi; Time Factors; Tomography, Emission-Computed, Single-Photon; Ventricular Dysfunction, Left  
Medline is the source for the MeSH terms of this document.

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