Background
This study was performed to validate preoperative right ventricular measurements obtained from multislice spiral computed tomography data sets in comparison with magnetic resonance imaging.

Methods
Before cardiac surgery, 25 patients (among them 12 patients with compromised right ventricular function) underwent contrast-enhanced retrospectively electro-cardiogram-gated multislice spiral computed tomography and cine magnetic resonance imaging in a standardized fashion. Right ventricular end-diastolic, end-systolic and stroke volume, ejection fraction, and myocardial mass were calculated according to the slice summation method. Measurements obtained with both modalities were compared using Pearson's correlation coefficient (r), Student's t test for paired samples, and Bland-Altman analysis.

Results
The right ventricle was completely visualized with invariably adequate image quality on all multislice spiral computed tomography and magnetic resonance images. For all measurements a close correlation between multislice spiral computed tomography and magnetic resonance imaging was found (end-diastolic volume, r=0.93; end-systolic volume r=0.95; stroke volume, r=0.91; ejection fraction, r=0.96; mass, r=0.94). Mean values of all measurements did not differ significantly between both modalities, and limits of agreement were in an acceptable range.

Conclusions
When compared with magnetic resonance imaging as a reference method, multislice spiral computed tomography seems to be an accurate and reliable noninvasive technique for evaluating right ventricular measurements.