

# 学位論文審査結果の要旨

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<p>(学位論文審査結果の要旨)</p> <p>Quantitative assessment of myocardial strain with displacement encoding with stimulated echoes MRI in patients with coronary artery disease</p> <p>【主論文審査結果の要旨】 著者らは論文において下記の内容を述べている。</p> <p><b>OBJECTIVES:</b> To determine the diagnostic value and reproducibility of strain assessment with Displacement Encoding with Stimulated Echoes (DENSE) MRI in patients with suspected coronary artery disease (CAD).</p> <p><b>METHODS:</b> DENSE MRI was obtained on short-axis planes of the left ventricle (LV) in 24 patients with suspected CAD. e1 and e2 strains of LV wall were quantified. Cine MRI was acquired to determine percent systolic wall thickening (%SWT), followed by late gadolinium enhancement (LGE) MRI. The diagnostic performance of e1, e2 and %SWT for predicting the presence of LGE was evaluated by receiver operating characteristics (ROC) analysis.</p> <p><b>RESULTS:</b> Myocardial scar on LGE MRI was observed in 91 (24%) of 384 segments. The area under ROC curve for predicting the segments with LGE was 0.874 by e1, 0.916 by e2 and 0.828 by %SWT (p=0.001 between e2 and %SWT). Excellent inter-observer reproducibility was found for strain (ICC=0.962 for e1, 0.955 for e2) as compared with %SWT (ICC=0.790).</p>			

## CONCLUSIONS

DENSE MRI can be performed as a part of routine cardiac MR study and allows for quantification of myocardial strain with high inter-observer reproducibility. Myocardial strain, especially e2 strain is useful in detecting altered abnormal systolic contraction in the segments with myocardial scar.

本研究において宮城は、DENSE MRIによる心筋 strain 計測が cine MRI を用いた壁厚増加率計測と比較して高い検者間再現性を示し、さらに e2(circumferential) strain が梗塞領域における局所の収縮異常を鋭敏に検出できることを示した。

よって本論文は、局所心筋の収縮機能異常を定量的に評価するうえで学術上極めて有益であり、学位論文として価値のあるものと認めた。

### 【掲載雑誌名および著書名】

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