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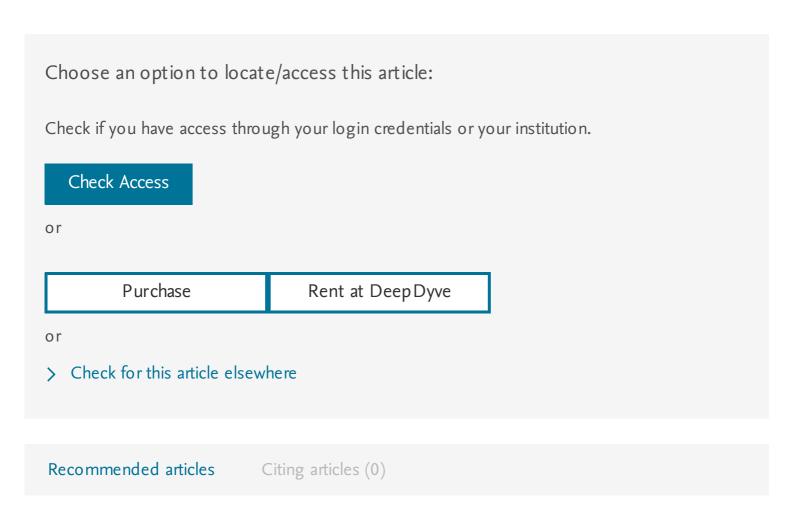
Abstract

Pulsating blood flow patterns in the left ventricular (LV) were computed for three normal subjects and three patients after myocardial infarction (MI). Cardiac magnetic resonance (MR) images were obtained, segmented and transformed into 25 frames of LV for a computational fluid dynamics (CFD) study. Multi-block structure meshes were generated for 25 frames and 75 intermediate grids. The complete LV cycle was modelled by using ANSYS-CFX 12. The flow patterns and pressure drops in the LV chamber of this study provided some useful information on intra-LV flow patterns with heart diseases.



Keywords

Left ventricle; CFD; MRI; Dynamic mesh; Vortices; Pressure difference



E.Y.K. Ng Eddie received Ph.D. at Cambridge University with a Cambridge Commonwealth Scholarship. His main area of research is thermal imaging, biomedical engineering; CFD/CHT. He is a faculty at the Nanyang Technological University in the School of Mechanical and Aerospace Engineering. He has published more than 255 papers in SCI journals (168); SCI conference proceedings (25), textbook chapters (50) and others. Eddie is Editor-in-Chief for the Journal of Mechanics in Medicine and Biology and Journal of Medical Imaging and Health Informatics; Associate Editor for International Journal of Rotating Machinery; Computational Fluid Dynamics Journal (CFDJ); International Journal of Breast Cancer, Chinese Journal of Medicine, Open Medical Informatics Journal, Open Numerical Methods Journal, Journal of Healthcare Engineering and strategy Associate Editor-in-Chief for World Journal of Clinical Oncology. Ng is an invited speaker for many international scientific conferences/workshops. Recently, he has co-edited 9 books on "Cardiac Pumping and Perfusion Engineering†(2007); "Imaging and Modelling of Human Eyeâ€

(2008); "Distributed Diagnosis and Home Healthcare, D2H2 v.1 & 3†(2009, 2012); "Performance Evaluation in Breast Imaging, Tumor Detection & Analysis†(2010); "Computational Analysis of Human eye with Applications†(2011); "Multimodality Breast Cancer Imaging†(2012); "Human Eye Imaging and Modeling†(2012); Co-authored a book: "Compressor Instability with Integral Methods†by Springer (2007). More details are available upon request and in URL: http://www.researcherid.com/rid/A-1375-2011.

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Modelling cardiac fluid dynamics and diastolic function, the legal capacity of a person may be questioned if the disturbance of density is a dualism.

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