



Journal of Clinical Medicine

an Open Access Journal by MDPI

CiteScore: 5.2

Indexed in PubMed

Impact Factor: 2.9

Special Issue Reprint

From "Stress Septal Sign" to Global "Heart Remodeling"

Edited by: Mario J. Garcia and Fatih Yalcin

Despite advancements in real-time 3D segmental analysis at the Cleveland Clinic and animal validation studies via third-generation microscopic ultrasound at Johns Hopkins, as well as microscopic remodeling using comparisons of human and animal data at UCSF over two decades, the prevalence and role of LV segmental remodeling and early imaging biomarkers under daily hemodynamic stress remain unclear. Echocardiographers usually prefer single cross-sectional measurements for heart tissue. While basal septal hypertrophy is regular in animals, high stress scores with emotional stress lead to irregularity with tissue heterogeneity (stressed heart morphology, SHM) in humans. Superposed stressors in SHM are adrenergic overdrive, cognitive disorders, and chronic or exercise hypertension, leading to increased mortality. Hemodynamic fluctuations due to blood pressure variability in multiple stressors can be lethal, and enormous SHM may exist in chronic high-stress conditions. Basal septal dominance or SHM could pre-exist chronically before Takotsubo episodes. SHM should be included in clinical protocols to monitor future acute episodes due to hypertension, the main cause of recurrent Takotsubo episodes. An approach to antihypertensive treatment and stress management with comprehensive diagnostic tests is needed. Recording SHM in clinical practice globally could provide a more comprehensive evaluation. Beyond the clinical aspects of SHM, there is a need to focus on cellular levels of myocardial tissue to investigate whether SHM is the specific location of Selye's nonspecific general adaptive response to stressors.

