

Editorial



Expanding Role of Left Atrial Strain in Valvular Heart Disease

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► See the article “Prognostic Impact of Left Atrial Strain After Mitral Valve Repair Surgery in Patients With Severe Mitral Regurgitation” in volume 52 on page 205.

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Myocardial strain, a measure of tissue deformation, is expressed as a percentage change in the length of the myocardial tissue. Strain imaging, using 2-dimensional speckle tracking echocardiography, has emerged as a non-invasive and reliable marker for estimating myocardial function. The role of strain is evolving in various cardiovascular diseases, mainly focusing on the early detection of subclinical myocardial disease.¹⁾ Left ventricular (LV) strain is a well-known early marker of myocardial injury or subclinical LV systolic dysfunction in cardio-oncology and a prognostic marker of acute and chronic heart failure. Left atrial (LA) strain has emerged as a novel marker for grading LV diastolic dysfunction or the severity of various cardiomyopathies (CMP) such as hypertrophic CMP and infiltrative CMP.²⁾

Early detection and timely intervention are fundamental issues in valvular heart disease (VHD); to improve postoperative clinical outcomes, intervention should be performed before irreversible myocardial structural or functional changes occur.³⁻⁵⁾ Recent studies on asymptomatic severe aortic stenosis (AS) showed that subclinical myocardial dysfunction with impaired LV global longitudinal strain (LVGLS) and a preserved LV ejection fraction (LVEF) was associated with AS progression and the need for AV intervention.⁶⁾ Furthermore, among patients with primary mitral regurgitation (MR), LVGLS demonstrated an additional role in predicting long-term prognosis over LVEF or LA size.⁷⁾ Considering that current American Heart Association/American College of Cardiology and European Society of Cardiology/European Association for Cardiothoracic Surgery guidelines recommend valvular intervention in severe AS or primary MR patients with LV systolic dysfunction,^{3,4)} using LV strain as a parameter for early detection and intervention would be reasonable.

However, there are relatively few studies on LA strain in VHD, especially in severe MR. Oh et al.⁸⁾ reported the prognostic role of LA global longitudinal strain (LAGLS) on cardiovascular events in 338 patients treated with MV repair surgery for severe MR. In the retrospective study, the authors demonstrated that preoperative LAGLS was an independent predictor of long-term postoperative outcomes even in patients with a smaller LA size. There has been increasing evidence that LA function is an important prognostic factor in various cardiovascular diseases; it could be applied to MR because LA is the main receiving chamber. The current study results are consistent with those of recent small studies that described the role of LAS in MR.^{9,10)}

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However, the results of this study should be interpreted with caution. In patients with severe MR, the LA and LV chambers are affected by volume overload; therefore, the additional role of LA strain over LV strain should be investigated thoroughly. As already mentioned as a limitation, preoperative LVGLS was not included in the current study. Recent studies of LA strain might be the start of a long journey in positioning LAS in VHD, and there would be far more to investigate regarding the structural remodeling of VHD and timely intervention.

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