Mitral annular disjunction and cardiac magnetic resonance

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Mitral annular disjunction (MAD) is the improper systolic acceptance of the posterior leaflet to the atrial wall[1]. First line to the diagnosis is transthoracic echocardiography in the long axis view on the mitral valve using highest frame rate or sagittal view on cardiac magnetic resonance (CMR)[1]. The distance between mitral-annulus and systolic bulge of ventricular myocardium range 5-10 mm is diagnostic and it is associated with morphological and functional remodeling of the left ventricular myocardium[1,2]. Prevalence of MAD varies due to the different cut-offs, imaging modalities and ec, and in a general population, is 8.7%[3]. In patients with mitral valve prolapse the prevalence of MAD is 20-58%[1]. While MAD with prolapse is common and associated with ventricular arrhythmias, isolated MAD without prolapse, has been described on CMR[2,3]. CMR can also identify prolapse using cine images, but the most important advantage of this technique is risk stratification of arrhythmias due to incremental prognostic value of late gadolinium enhancement over mitral valve prolapse severity[2]. Several studies suggested association between late gadolinium enhancement (LGE) at the mid wall of papillary muscles and inferobasal region of left ventricle with complex arrhythmias[1-4]. The origin of ventricular arrhythmia can be deduced according to the distribution of LGE on CMR[1,2]. CMR should be done in all patients who survived sudden cardiac death or sustained ventricular arrhythmia before devices, to clarify the etiology and also in patients with unexplained syncope or nonsustained ventricular arrhythmia, to assessment of left ventricle size and function, severity of mitral regurgitation, leaflet thickness and also when is poor echocardiographic window[1]. CMR imaging provides excellent morphological information and helps in the assessment of fibrosis[4]. Myocardial fibrosis determined according to LGE at CMR was associated with adverse outcome in patients with mitral valve prolapse without moderate-to-severe mitral regurgitation or left ventricular dysfunction[2].

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