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Images in Cardiology

A rare cause of mitral regurgitation: Posterior mitral leaflet aneurysm with perforation



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A rare cause of mitral regurgitation: Posterior mitral leaflet aneurysm with perforation.

A 65 year-old woman with history of mitral valve prolapsus was referred to our clinic for the assessment of one-week history of progressive dyspnea and palpitation. Cardiovascular examination revealed 3-4/6 pansystolic murmur at the apex. There was no infective endocarditis sign on physical examination. Laboratory markers for inflammation and blood cultures were negative. Transthoracic echocardiography (TTE) showed severe mitral regurgitation (MR) and a mobile mass (Fig. 1A) on the posterior mitral leaflet which looks like mitral valve prolapsus. Transesophageal echocardiography (TEE) revealed posterior mitral leaflet aneurysm (PMLA) and echo drop-out (Fig. 1B) suggesting perforation on the top of aneurysmal sac and two eccentric regurgitant jets caused by perforation of aneurysm (Fig. 1C) and coaptation defect due to the mass effect of aneurysm. Three-dimensional transesophageal echocardiographic (3D TEE) imaging clearly

showed PMLA and aneurysm perforation (Fig. 2A) at the region of the P2 scallop of the posterior mitral leaflet and aneurysmal sac collapsed in diastolic frames (Fig. 2B). (Supplementary material online, Video 1)

Supplementary video related to this article can be found at <http://dx.doi.org/10.1016/j.ihj.2015.02.032>.

Mitral valve aneurysms (MVA) are diagnosed as a localized saccular bulging of the mitral leaflet towards the left atrium with systolic expansion and diastolic collapse. Although they are commonly associated with endocarditis; connective tissue diseases, degenerative changes or congenital disorders have been suggested for the etiopathogenesis of MVAs. PMLA is rarely reported compared to the anterior leaflet aneurysm which is commonly encountered in the course of aortic valve endocarditis and may be misdiagnosed as chordal rupture, other cardiac masses, vegetation or mitral valve prolapse as in our case. Perforation of the PMLA that may result in clinically significant MR was very rarely reported. Thrombus formation or vegetation within the aneurysm are other probable causes complicating the clinical course.

2D TEE is an excellent technique for diagnosing MVA and especially 3D TEE can play pivotal role in determination of surgical procedure by providing detailed anatomical demonstration of the mitral valve and precise localization of the perforation.

Conflicts of interest

All authors have none to declare.

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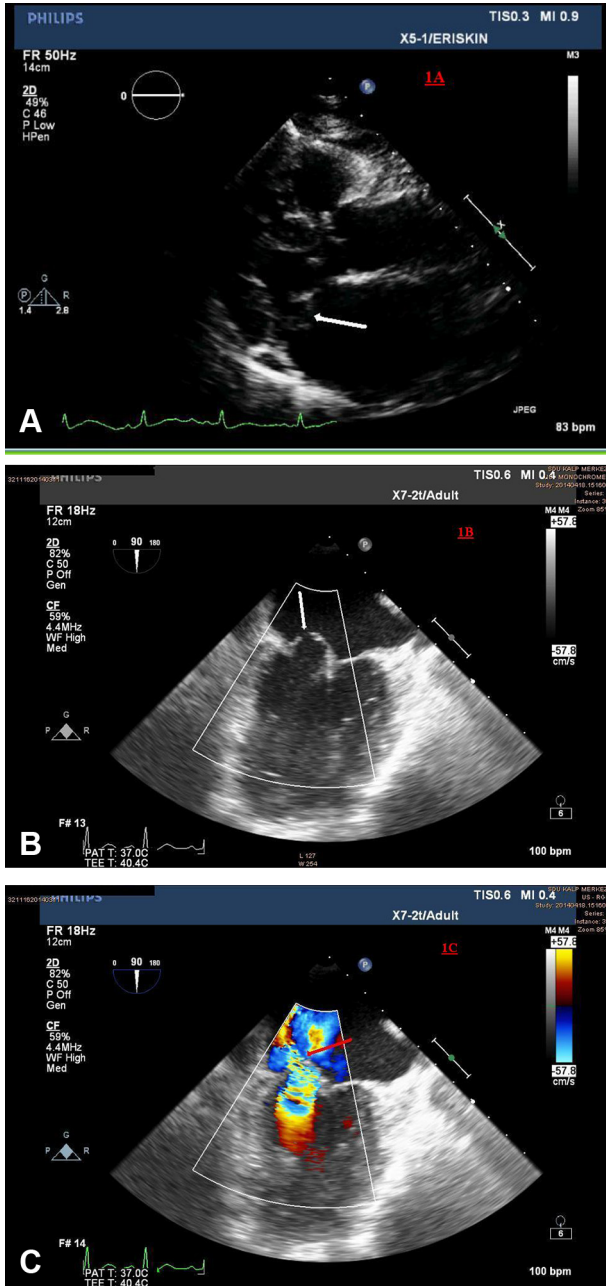


Fig. 1 – (A) Transthoracic parasternal long-axis view showing a mobile mass (arrow) on the posterior mitral leaflet resembling mitral valve prolapsus. **(B)** Transesophageal two chamber view revealing a posterior mitral leaflet aneurysm and echo drop-out (arrow) suggesting perforation on the top of aneurysmal sac and **(C)** an eccentric regurgitan jet (red arrow) at the site of echo drop-out.

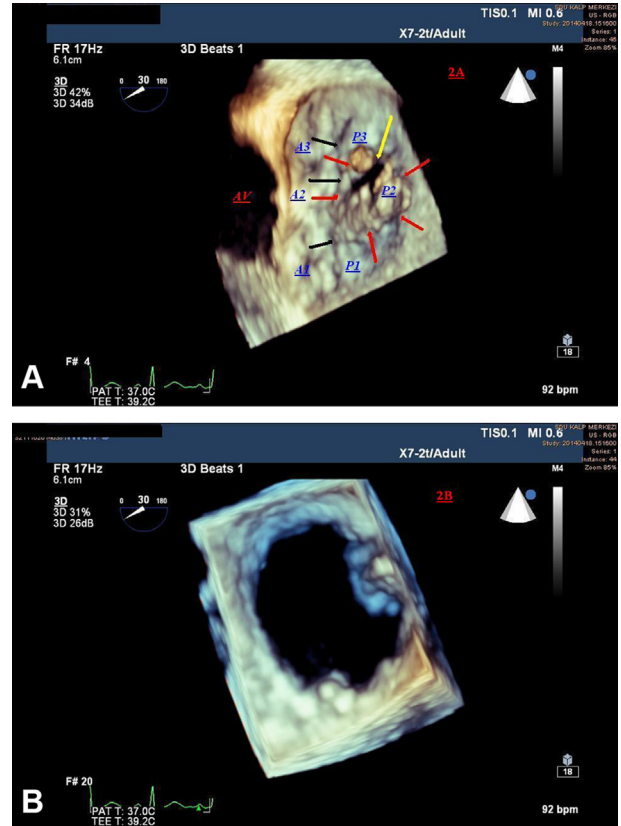


Fig. 2 – (A) On left atrial perspective, three-dimensional transesophageal echocardiographic imaging revealed a localized saccular bulging (red arrows) towards left atrium at the region of the P2 scallop of the posterior mitral leaflet and perforation (yellow arrow) on the sac during systole and **(B)** diastolic collapse of aneurysmal sac. Black arrows show mitral commissure. AV; Aortic valve, A1-3: Anterior mitral leaflet scallops, P1-3: Posterior mitral leaflet scallops.