

Images in This Issue
Cardiovascular Disorders



Mitral Annuloplasty Ring Dehiscence Diagnosed by Three-Dimensional Echocardiography

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Disclosure

The author has no potential conflicts of
interest to disclose.

An unidentified male successfully resuscitated from cardiac arrest was admitted to our clinic for post-resuscitation care. Due to his unidentified status, we could not access any previous medical records.

Chest radiography showed marked cardiomegaly with pulmonary congestion (**Fig. 1**). Thoracotomy scar was present on the right anterior chest wall. Transthoracic echocardiography revealed hyperechoic linear shaped mass originated from posterior mitral annulus on the left atrial side (**Fig. 2A and B, Video 1**). Severe mitral regurgitation was present. Although there was no definite evidence of cardiac surgery such as midline sternotomy wires or mediastinal surgical clips (**Fig. 1**), echocardiographic findings were suggestive of mitral annuloplasty ring dehiscence (**Fig. 2A and B, Supplementary Video 1**). The real time three-dimensional transesophageal echocardiography (3D TEE) confirmed the mitral annuloplasty ring dehiscence from the atrial perspective (**Fig. 3, Supplementary Video 2**).

He was eventually identified and found to have undergone a robotically assisted minimally invasive mitral annuloplasty.



Fig. 1. Chest radiography on admission. Chest radiography showed marked cardiomegaly with pulmonary congestion. Although thoracotomy scar was present on the right anterior chest wall, chest radiography demonstrated no evidence of previous cardiac surgery including midline sternotomy wires or mediastinal surgical clips.

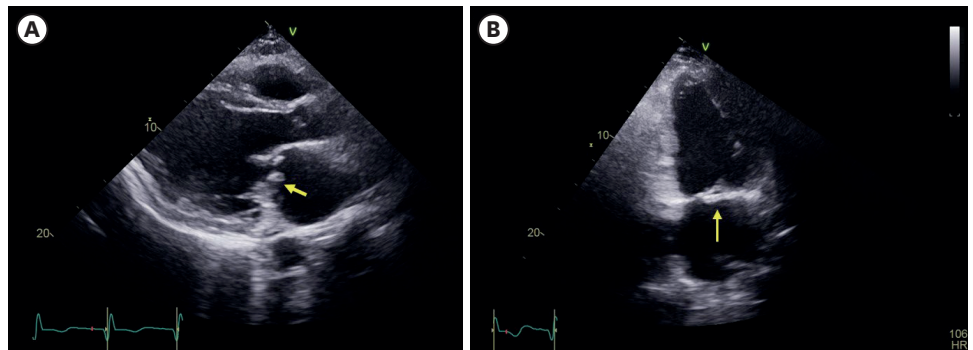


Fig. 2. Transthoracic echocardiography. Parasternal long axis view (A) and apical 2 chamber view (B) of the transthoracic echocardiography showed linear shaped mass (yellow arrow) originated from posterior mitral annulus with severe mitral regurgitation.

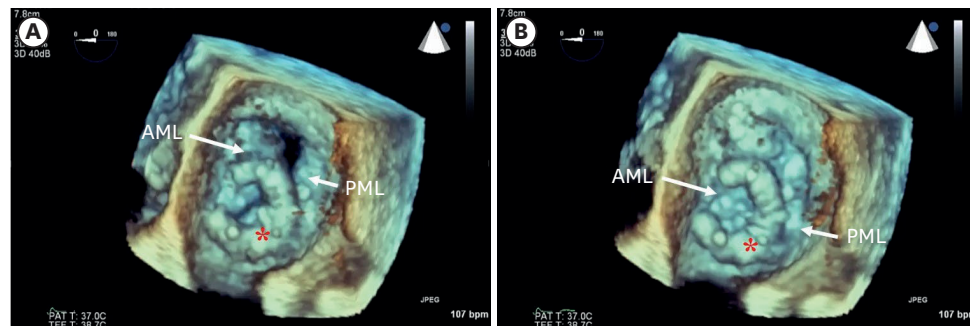


Fig. 3. Real time 3D TEE. Real time 3D TEE confirmed the mitral annuloplasty ring dehiscence (red asterisk). (A) Real time 3D TEE image of diastolic phase. (B) Real time 3D TEE image of systolic phase. 3D TEE = three-dimensional transesophageal echocardiography, AML = anterior mitral leaflet, PML = posterior mitral leaflet.

Recently, minimally invasive operative techniques have been applied in cardiac surgery.¹ Although, using transthoracic echocardiography, we could get limited data from the unidentified patient, 3D TEE provided the exact anatomy of mitral valve and mitral annuloplasty ring dehiscence. 3D TEE could precisely provide full structural information.^{2,3} Even in the absence of previous medical records, 3D TEE has incremental value in identifying the cardiac pathology and assisting the accurate diagnosis with detailed anatomic information. The present case suggests the utility of 3D TEE in the evaluation of cardiac pathology.

Ethic Statement

This report was reviewed and approved for publication with exempt of informed consent by the IRB of Ajou University Hospital (AJOU-IRB-EX-2023-127).

SUPPLEMENTARY MATERIALS

Supplementary Video 1

Transthoracic echocardiography.

[Click here to view](#)

Supplementary Video 2

Real time three-dimensional transesophageal echocardiography.

[Click here to view](#)

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