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Ruptured Mitral Valve Aneurysm: A Rare Complication of Mitral Valve Endocarditis

Marta Fontes Oliveira, MD, Maria Trêpa, MD, Inês Silveira, MD, Sofia Cabral, MD, and Severo Torres, MD

Cardiology Department, Centro Hospitalar Universitário do Porto, Porto, Portugal

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Address for Correspondence:
Marta Fontes Oliveira, MD
Cardiology Department, Centro Hospitalar Universitário do Porto, Rua Heróis de França 701, 1ºesq, 4450-159 Matosinhos, Portugal.
E-mail: marta.fontes.oliveira@gmail.com

ORCID iDs
Marta Fontes Oliveira
https://orcid.org/0000-0002-6691-9146
Maria Trêpa
https://orcid.org/0000-0002-7624-7750
Inês Silveira
https://orcid.org/0000-0002-3120-4175

Conflict of Interest
The authors have no financial conflicts of interest.

A 69-year-old male patient admitted to the hospital with congestive heart failure. Physical examination presented signs of left heart failure, and cardiac auscultation disclosed a grade III/VI pansystolic murmur at the apex. Transthoracic echocardiography showed a large saccular bulge originating from the anterior mitral valve leaflet with severe mitral regurgitation, and multiple valvular and subvalvular vegetations (**Figure 1**). Transesophageal echocardiography confirmed the diagnosis of complicated endocarditis of the mitral valve with large ruptured anterior mitral valve leaflet aneurysm (2.2 × 2.5 cm) producing severe mitral regurgitation (**Figure 2**). Aortic valve was clear of vegetations although it presented with mild to moderate aortic regurgitation. Blood cultures were positive for *coagulase negative staphylococcus*. A few days later, the patient underwent cardiac surgery for mitral and aortic valve replacement. The patient completed a 6-week antibiotic regimen following surgery and was then successfully discharged with no signs of heart failure.

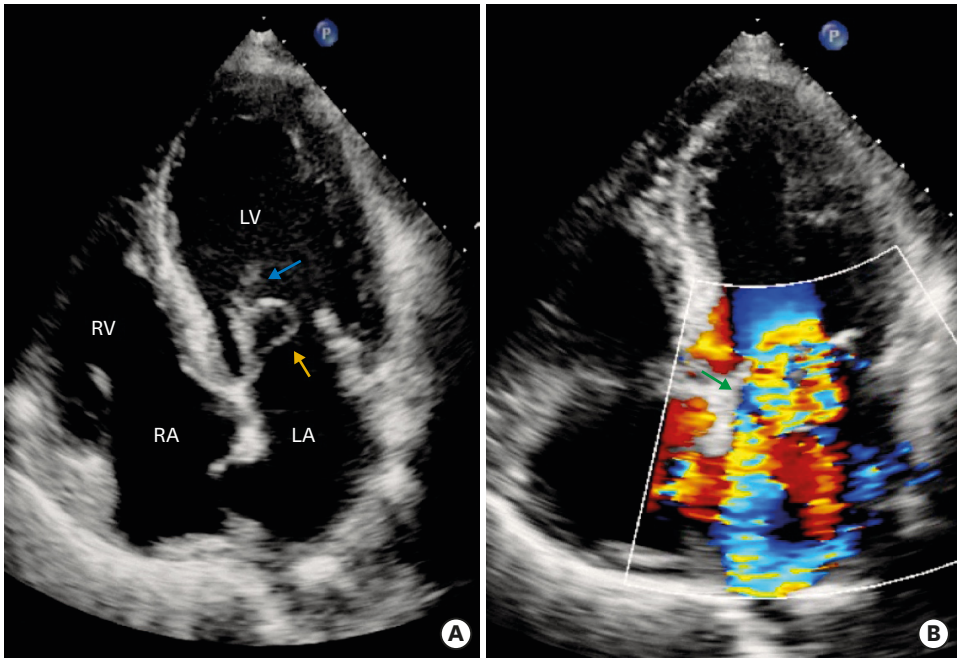

Figure 1. Transthoracic echocardiogram (apical 4-chamber view). (**A**) Saccular bulge on the atrial side of the anterior mitral valve leaflet (orange arrow) and vegetations (blue arrow). (**B**) Color Doppler image showing mitral regurgitation jet through the ruptured aneurysm (green arrow). LA: left atrium, LV: left ventricle, RA: right atrium, RV: right ventricle.

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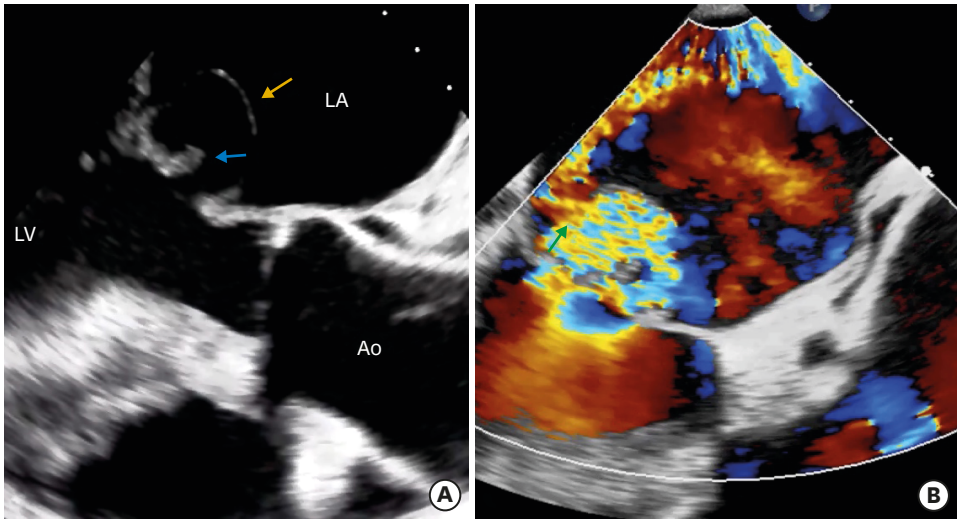

Figure 2. Transesophageal echocardiogram (3-chamber view). (**A**) Anterior mitral valve leaflet with large ruptured aneurysm (2.2 × 2.5 cm) (orange arrow) and a large moving mitral vegetation (blue arrow). (**B**) Transesophageal echocardiogram (2-chamber view). Color Doppler image showing severe mitral regurgitation through the ruptured aneurysm (green arrow). Ao: ascending aorta, LA: left atrium, LV: left ventricle.

Mitral valve aneurysms are rare and potentially fatal. Although they can occur in a non-infectious setting, most frequently they are a consequence of infective endocarditis and affect the anterior leaflet of the mitral valve.[1] It is thought that infection causes leaflet degeneration through localized inflammation, dissection and consequent expansion of the valvular tissue towards the left atrium.[2] Although conservative management with close follow-up may be possible in some aneurysms, mitral valve replacement surgery should be promptly considered in complicated cases.[3]

This case highlights the importance of appropriate imaging for early detection of valvular complications and timely surgical intervention to achieve favorable outcomes.

SUPPLEMENTARY MATERIALS

Movie 1

Transesophageal echocardiogram (3-chamber view). Large ruptured aneurysm (2.2 × 2.5 cm) in the anterior mitral valve leaflet with a large moving vegetation inside. Ao: ascending aorta, LA: left atrium, LV: left ventricle, MVA: mitral valve aneurysm.

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Movie 2

Transesophageal echocardiogram (2-chamber view). Color Doppler image showing severe mitral regurgitation through the ruptured aneurysm. LA: left atrium, LV: left ventricle, MR: mitral regurgitation, MVA: mitral valve aneurysm.

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