

Multimodal Imaging of a Mitral Paravalvular Abscess

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A 63-year-old woman who presented with a 2-week history of fever and fatigue was found to have persistent group B β -hemolytic streptococcal bacteremia. A transesophageal echocardiogram (TEE) showed a mobile mass adhering to the mitral valve (MV). Two- and 3-dimensional TEE revealed a large echodense structure in the left atrium, adhering to the intra-atrial septum and posterior MV leaflet, along with a retrocardiac mass (Fig. 1). The patient was referred

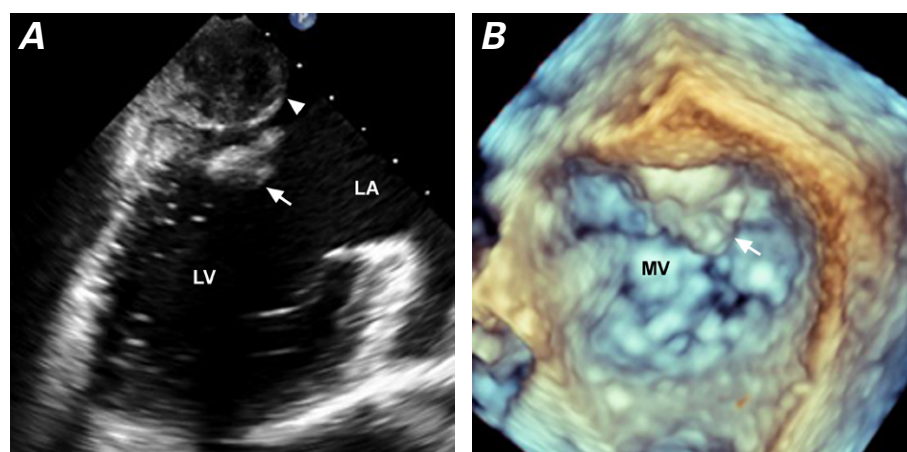


Fig. 1 **A)** Two- and **B)** 3-dimensional transesophageal echocardiograms show vegetation on the posterior mitral valve leaflet (arrows) and reveal a retrocardiac mass (arrowhead).

LA = left atrium; LV = left ventricle; MV = mitral valve

Supplemental motion images are available for [Figures 1A and 1B](#).

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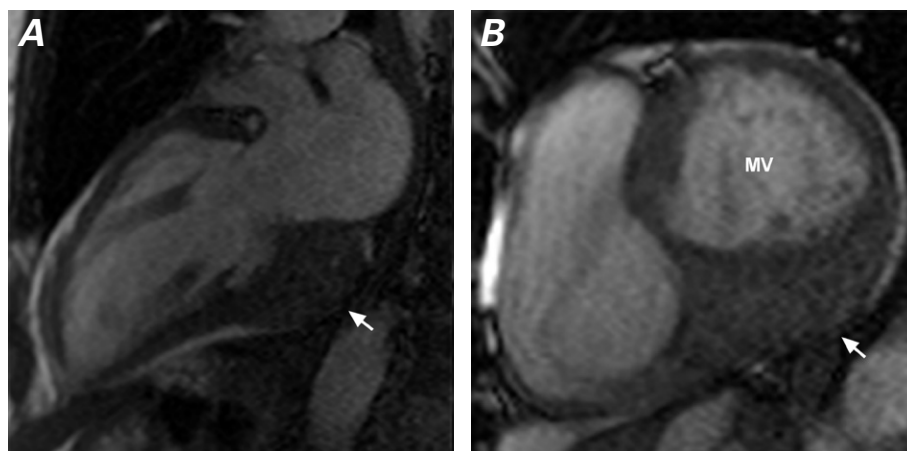


Fig. 2 Steady-state free-precession magnetic resonance images in **A)** vertical long-axis and **B)** short-axis views show a mitral paravalvular mass (arrows).

MV = mitral valve

Supplemental motion image is available for [Figure 2A](#).

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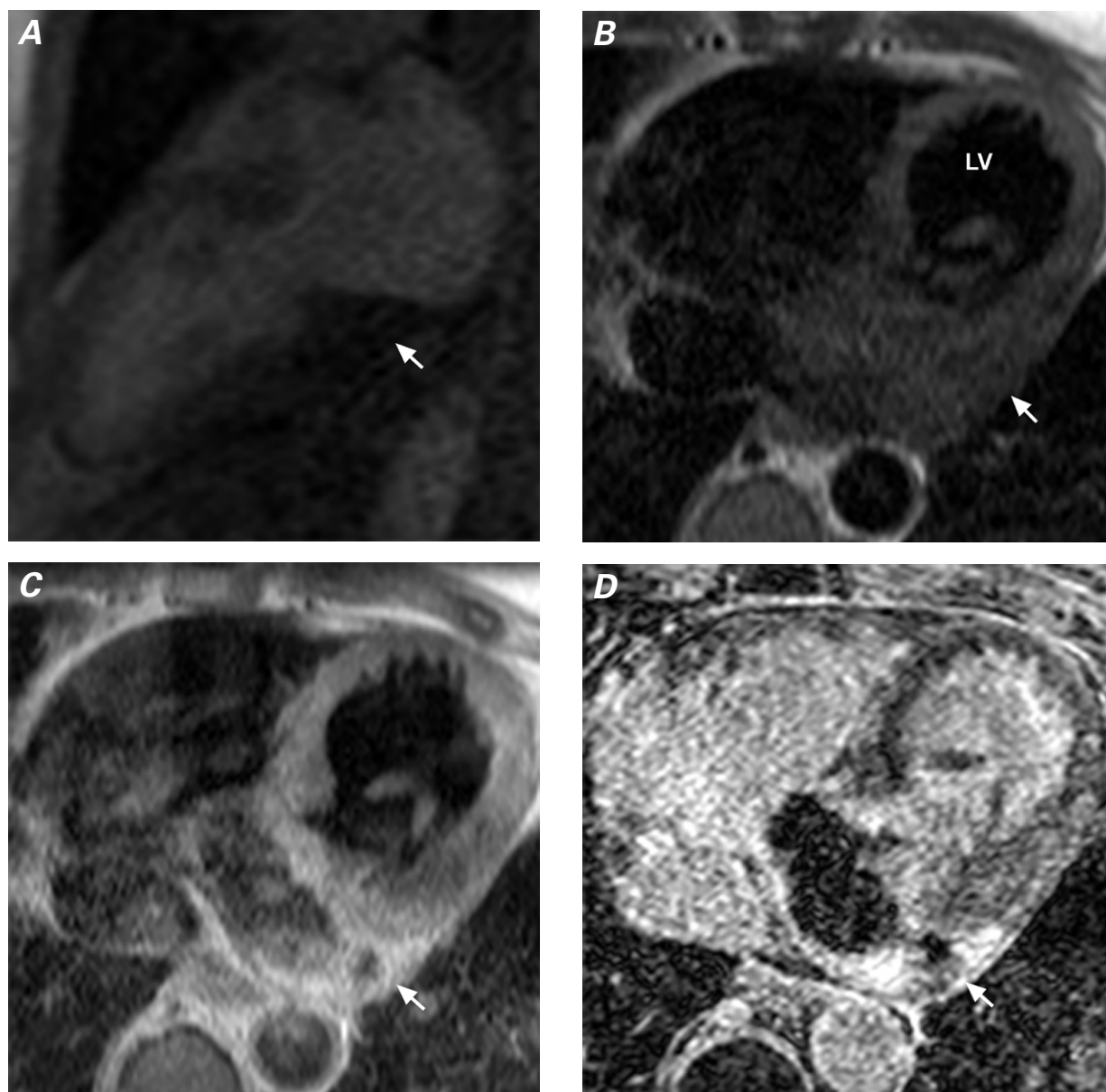


Fig. 3 Cardiac magnetic resonance reveals the mitral paravalvular abscess (arrows) by means of **A**) dynamic perfusion, **B**) pre- and **C**) post-contrast T1-weighted double-inversion recovery, and **D**) delayed enhancement modes.

LV = left ventricle

[Supplemental motion image is available for Figure 3A.](#)

for cardiac magnetic resonance imaging. Steady-state free-precession images with T1 weighting showed a thickened posterior MV leaflet with vegetation, severe mitral regurgitation, and a myocardial mass involving the basal inferior wall of the left ventricle (LV) (Fig. 2). Dynamic first-pass perfusion images revealed a hypoperfused mass with no enhancement when compared with normal myocardium (Fig. 3A). Double-inversion-recovery (DIR) images with T1 weighting revealed mild heterogeneity of the mass (Fig. 3B). Pre- and post-contrast DIR and late-gadolinium-enhanced images with T1 weighting showed substantial peripheral

enhancement with central hypointensity (Fig. 3C and D). The diagnosis was mitral paravalvular abscess (PA). The patient underwent débridement of the large abscess, along with MV replacement and reconstruction of the MV annulus and portions of the left atrial and LV wall with bovine pericardial patch.

Comment

Paravalvular abscess, a well-known sequela of infective endocarditis,¹ is much more prevalent in the aortic valve than in the MV.² Hence, PA of the native MV is

considered to be a rare finding. Along with TEE (the imaging method of choice in establishing a diagnosis³), multimodal imaging can help to confirm the diagnosis and determine the extent of a PA preoperatively, as in our patient.

References

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