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CLINICAL VIGNETTE

Late left atrioventricular disruption: an unusual complication of mitral valve replacement after endocarditis

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Late development of left ventricular (LV) rupture after mitral valve (MV) replacement is a rare clinical condition associated with a poor prognosis. The diagnosis of this complication may be difficult, and a multimodality imaging approach is extremely useful for its characterisation. We report a case of a 35-year-old man who presented with heart failure due to an acute native MV endocarditis. Echocardiography showed a ruptured anterior MV leaflet with severe mitral regurgitation, and a periannular abscess in anatomical relation with left atrial appendage. Antibiotic therapy was started and an urgent surgery was performed, in which the MV was replaced with a mechanical prosthetic valve. After an uneventful year, the patient was admitted again with an acute pericarditis. Echocardiography evaluation (transthoracic and transoesophageal) revealed a large cavity (39 × 33 mm) with systolic expansion in the basal segment of anterolateral LV wall, immediately below the prosthetic mitral annulus plane, communicating with the LV through a neck of 13 mm (Fig. 1A–C, asterisk), suggesting the presence of a late left atrioventricular groove disruption. In addition, two paraprosthetic leaks were visualised, leading to at least moderate regurgitation (Fig. 1D). During follow-up, LV ejection fraction decreased slightly to 58% and mild LV dilatation developed. An additional anatomical characterisation with cardiac computed tomography (CT) was performed, confirming left atrioventricular groove rupture adjacent to the prosthetic MV (Fig. 1E–G, asterisk), leading to a slightly antero-superior displacement of the left coronary artery, and in close relationship with the circumflex artery (pointed out with an arrow in Fig. 1G). This CT anatomical characterisation of the surrounding structures was essential in surgical treatment planning. The patient was successfully submitted to LV repair and prosthetic MV replacement with improvement in clinical status.

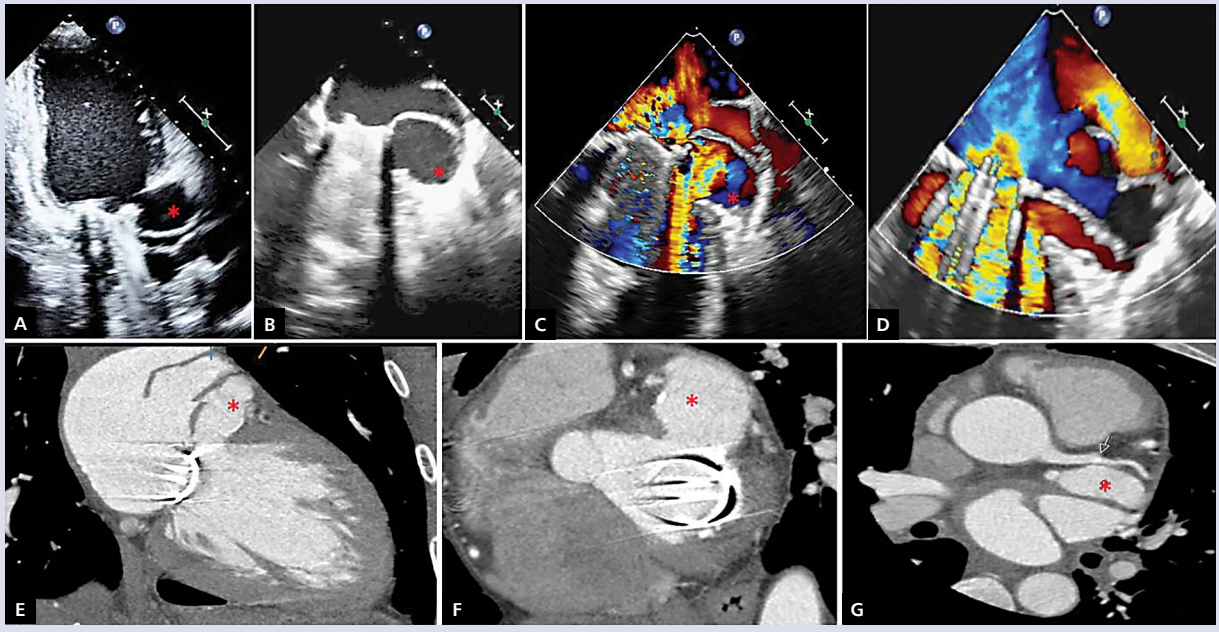

Figure 1. Transthoracic (**A**) and transoesophageal echocardiography (TEE) (**B, C**) images revealing a large cavity (*) of 39 × 33 mm with systolic expansion in the basal segment of the anterolateral left ventricular (LV) wall, below the prosthetic mitral annulus plane, communicating with the LV through a neck of 13 mm, suggesting the presence of a left atrioventricular groove disruption; **D.** TEE with colour Doppler showing moderate regurgitation due to the presence of two paraprosthetic leaks; **E–G.** Cardiac computed tomography images of the previously described aneurysmal cavity (*) showing the anatomical relation with mitral valve annulus and circumflex artery (pointed out with an arrow), essential to delineate the surgical approach

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