

Unusual case of infective endocarditis after Dor procedure

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A 66-year-old male patient was referred to our unit in a severe condition (New York Heart Association [NYHA], class IV) with suspicion of infective endocarditis. In 1988, he suffered from anterior ST-segment elevation myocardial infarction (MI) resulting in apical aneurysm formation, which was subsequently treated by the Dor procedure (left ventriculoplasty; endoventricular circular patch plasty) without any coronary artery intervention (FIGURE 1A). On admission, transthoracic echocardiography showed an akinetic left ventricular (LV) aneurysm (3.8×8.7 cm), incorporating apex and subapical segments separated from the LV by a previously implanted patch. Due to patch dehiscence of 4 cm in length and with numerous vegetations, there was a spontaneous blood flow between LV and aneurysmal cavity (FIGURE 1B–1D). Cardiac magnetic resonance (CMR) imaging confirmed the presence of a true LV apical aneurysm (surface, 62 cm²) and patch dehiscence (FIGURE 1F; Supplementary material, Figure S1). On admission, blood samples were drawn, and cultures of

Staphylococcus aureus were grown. Coronary angiography showed a proximally occluded left anterior descending artery (LAD) without a visible distal vascular bed. After 14 days of targeted antibiotic treatment (cefazolin, rifampin), the heart team decided to perform cardiac surgery. Following cardiopulmonary bypass, aneurysmal pouch incision revealed a massive thrombus and dehiscence patch in two-thirds of its circuit. The patch and aneurysm were excised, and the ventriculotomy orifice was closed with double 2-0 sutures. After the surgery, episodes of paroxysmal atrial fibrillation were successfully treated with amiodarone. Control echocardiographic and CMR examinations revealed successful reconstruction of the LV with reduced volumes (Supplementary material, Figures S2 and S3). At 1-year follow-up, the patient is stable and free of exercise intolerance (NYHA class I) or arrhythmia.

MI may have serious consequences; in 10% to 35% of patients, especially in those with anterior MI, it results in LV aneurysm formation.¹ There

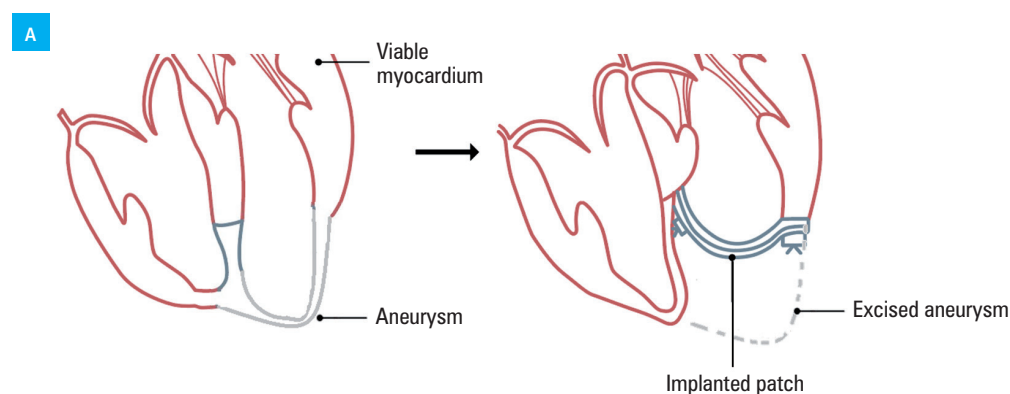


FIGURE 1 A – scheme of the Dor procedure; the aneurysm is entered and a circular patch is sutured at the border between viable and infarcted muscle; the excess aneurysm wall is resected, leaving a residual portion that is closed over the patch from the pericardial side

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Received: April 15, 2018.
Revision accepted: May 25, 2018.
Published online: June 5, 2018.
Conflict of interest: none declared.
Pol Arch Intern Med 2018;
128 (7-8): 480-481
doi:10.20452/pamw.4279
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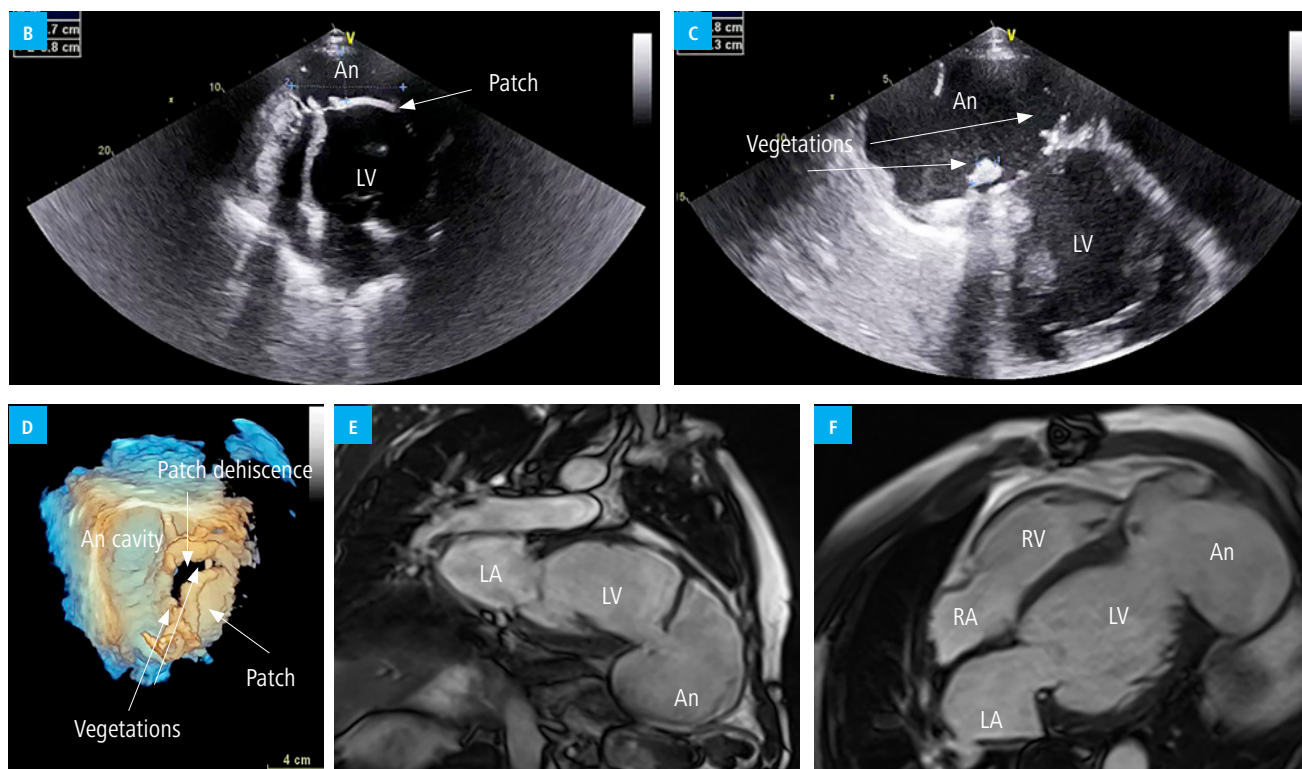


FIGURE 1 **B** – preoperative transthoracic echocardiography: apical 4-chamber view, true left ventricular (LV) aneurysm (An; 8.7×3.8 cm) separated from the LV by dehiscent Dacron patch; **C** – preoperative transthoracic echocardiography: modified apical view, dehiscent patch in the LV with numerous vegetations (the largest measuring 1.3×0.8 cm); **D** – preoperative 4-dimensional transthoracic echocardiography: apical view from the side of the An, visible dehiscent patch with thickened margins and vegetations; **E, F** – preoperative cardiac magnetic resonance imaging (steady-state free precession) demonstrating communication between the LV and An. Abbreviations: LA, left atrium; RA, right atrium; RV, right ventricle

are 2 types of aneurysms: true, containing the entire wall thickness, and protruding or false, resulting from rupture of the LV wall usually within 5 to 10 days from acute MI and contained by the surrounding pericardium.² The majority (90%) of true aneurysms are located in the apex or anterior wall.³ The formation of aneurysm results in increased wall tension; moreover, based on the Laplace's law, it leads to an increase in LV dilation and disturbs its contractility. One of the cardio-surgical methods of LV reconstruction, effective for large anteroseptal or posterobasal ventricular aneurysms, is the Dor procedure, which results in improved LV geometry (physiological, less spherical) and function. The procedure is usually performed with LAD grafting, which improves outcomes: the 5-year survival reaches 85%.⁴ In a study by Wang et al,⁵ the Dor procedure significantly improved the shape and function of LV, although at 1-year follow-up patients who underwent the procedure due to akinetic aneurysm formation demonstrated a more spherical and enlarged LV but its function remained unchanged.

Our case highlights the problem of infective endocarditis after cardio-surgical procedures. To our knowledge, this is the first report of infective endocarditis after the Dor procedure. Owing to multiple imaging techniques that enabled proper diagnosis, targeted antibiotic treatment, and cardio-surgical intervention, the patient's condition improved and resulted in over 1-year survival.

SUPPLEMENTARY MATERIAL Supplementary material is available with the article at www.pamw.pl.

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