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IMAGES IN CARDIOLOGY

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Pseudoaneurysm of the left ventricle after repairing a ventricular septal defect complicating acute myocardial infarction

A 74-year-old woman who was a current smoker was admitted with anterior ST-elevation myocardial infarction. A loud pansystolic murmur was audible at the left sternal edge and a small apical ventricular septal defect (VSD) was identified by echocardiography (ECHO). The patient had a single left anterior descending artery stenosis demonstrated at coronary angiography. The apical VSD was surgically closed with a bovine pericardial patch, and a left internal mammary artery graft was fashioned to the left anterior descending artery.

Three readmissions followed over the next 5 months with a left basal empyema growing Gram-positive cocci. At ECHO, a small residual VSD was identified with a large left pleural effusion, requiring therapeutic thoracocentesis. After 1 year, the patient was readmitted with left ventricular (LV) failure. ECHO showed a large extracardiac echo-free space adjacent to the apical LV bovine pericardial patch with two colour Doppler jets between the two, confirming the presence of a pseudoaneurysm of the left ventricle. Significant impairment in LV systolic function and mitral valve insufficiency was also present. A contrast-enhanced thoracic CT scan confirmed a LV false aneurysm of 7.5 cm maximum transverse diameter. Gradual clinical stabilisation followed and 3 years later the patient remains stable and leads an active life, including international travel. The images show a contrast-enhanced thoracic CT (panel A) with two-dimensional ECHO (panel B) and colour Doppler (panel C).

The incidence of pseudoaneurysm of the LV is <1% of all myocardial infarctions as a result of cardiac rupture. This case demonstrates that after cardiac surgery a stable outcome is possible.

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Panel A Contrast-enhanced thoracic CT scan showing the enhancement of the pseudoaneurysm measuring 7.5 cm maximum transverse diameter.

Panel B Echocardiograph showing five-chamber view outlining the pseudoaneurysm and the mitral valve.

Panel C Colour-enhanced echocardiograph showing the colour jet flowing from the left ventricle to the pseudoaneurysm.