Incidental post-surgical pseudoaneurysm of the left ventricle: an unexpected finding

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A 48-year-old female, with a history of ostium primum atrial septal defect repair, had a closure of a residual shunt and repair of a regurgitant left atrioventricular valve complicated by excessive intraoperative bleeding from an unknown source, which was successfully managed conservatively. Post-operative transthoracic echocardiograms (TTE) were unremarkable. The follow-up cardiovascular magnetic resonance (CMR) scan 4 years later, demonstrated an incidental distal anterolateral wall, thin-walled and akinetic outpouching, communicating with the left ventricle through a narrow neck. Following gadolinium administration, no intracavitary thrombus was identified. Late phase enhancement of the wall was not typical for infarction. The subsequent cardiovascular computed tomography (CCT) scan demonstrated normal coronary arteries and close proximity of the outpouching to the left anterior descending artery. Six-month follow-up contrast TTE did not demonstrate the outpouching. Features were suggestive of post-surgical pseudoaneurysm, possibly from inadvertent trauma/incision during surgical manipulation given its anterolateral location. Follow-up (5 years) has been uneventful with conservative management.

Cardiac pseudoaneurysm is a rare entity resulting from myocardial rupture contained by pericardial adhesions, defined by the absence of any element of normal myocardial wall. It is most commonly seen as a complication of myocardial infarction or cardiac surgery. Differentiation from true aneurysm is crucial for management. Multimodality imaging has an important diagnostic role. A thin, akinetic wall, and narrow-communicating neck are characteristic features. Detection with TTE may be difficult due to field-of-view limitations. Delayed pericardial enhancement on CMR has been suggested as a characteristic feature. CCT can rule out coronary artery disease and provide a roadmap for intervention.

Incidental post-surgical pseudoaneurysm of the left ventricle. (A) End-diastolic two-chamber CMR-balanced steady-state free precession cine image demonstrates a thin-walled 2 × 3 cm outpouching (asterisk) of the distal anterolateral wall, with a narrow 3 mm neck (arrow) to the left ventricle. (B) Corresponding end-systolic image demonstrates that there is no outpouching wall thickening or motion. (C) Late gadolinium enhanced image shows outpouching wall enhancement (arrows). (D) The left ventricle long-axis CCT view confirms the presence of the outpouching (asterisk) and demonstrates adjacent linear pericardial enhancement (arrows), which extends to normal myocardium areas. (E) Curved multiplanar reformat CCT image demonstrates normal LAD (arrow) close to the outpouching (asterisk). (F) Three-dimensional volume rendered CCT image depicting the relationship of the outpouching with the LAD. CMR, cardiovascular magnetic resonance; CCT, cardiovascular computed tomography; LAD, left anterior descending artery.