Cardiac magnetic resonance characterization of an iatrogenic left ventricular apical pseudo-aneurysm

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A 68-year-old woman underwent successful emergency repair of a type A aortic dissection (Panel A). Post-operative course was complicated by persistent fever. An ECG-gated CT aortic angiogram confirmed the clinical suspicion of intra-thoracic collection, but also identified a left ventricular apical pseudoaneurysm or diverticulum (Panels B and C). Transthoracic echocardiogram demonstrated an echo-free sac with thin walls at the apex (Panel D) with normal contractility of the adjacent myocardium. Direct communication with the left ventricular chamber was confirmed by colour Doppler examination (Panel E). Cardiac magnetic resonance (CMR) showed focal late-gadolinium enhancement of the walls of the sac of pseudoaneurysm, supporting an iatrogenic aetiology over congenital diverticulum (Panels F and G) with a small amount of pericardial fluid. The patient returned to the operating theatre for surgical repair. The pseudo-aneurysm was identified and reinforced with the bovine pericardium (Panel H). The ventilation catheter used to relieve excessive ventricular pressure during the initial surgery (Panel I) was considered the most likely culprit for the myocardial injury. Despite this unusual complication, the patient made an otherwise uneventful recovery. This case demonstrates the unique ability of CMR to characterize the myocardium, confirming the iatrogenic origin of an asymptomatic apical pseudoaneurysm and assisting in clinical management.

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