

"M I" LATE? - A CASE OF VENTRICULAR SEPTAL AND CONTAINED FREE WALL RUPTURE

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"Case Vignettes"

Mechanical complications of acute myocardial infarction (MI) have decreased in prevalence with the advent of thrombolytic agents and acute revascularization. Accurate determination of the timing of symptom onset is prudent to recognize mechanical complications. We present a case of ventricular septal and left ventricular contained free wall rupture complicating late presenting inferior MI.

A 49-year-old male presented to the emergency department with a 1-week history of left-sided chest pain. He was hemodynamically stable on arrival with a benign cardiac exam. His presenting electrocardiogram showed ST elevations in inferolateral leads. Emergent cardiac catheterization revealed complete occlusion of the right coronary artery. He underwent drug-eluting stent placement with antegrade TIMI III flow. Subsequent transthoracic echocardiogram (TTE) showed a left ventricular (LV) ejection fraction (EF) of 35-40%, reduced right ventricular (RV) function, and an inferolateral pseudoaneurysm with a left ventricular apical thrombus. CTA chest confirmed a pseudoaneurysm of the inferior wall of the left lateral ventricle measuring 3.3 x 2.1 x 2.1 cm. On urgent intraoperative intervention, he was also found to have a ventricular septal rupture (VSR), involving the inferobasal septum. Surgical repair of the defects was performed using a pericardial patch (images L contained free wall rupture, R pericardial patch). Repeat intra-operative transesophageal echocardiogram (TEE) revealed unchanged LVEF; however, the RV, of which a large portion had been replaced with patch, remained severely dysfunctional. He was unable to be weaned from cardiopulmonary bypass, and underwent placement of a right ventricular assist device RVAD [RA-PA with oxygenator] and intra-aortic balloon pump. The postoperative course was complicated by multiorgan failure including liver failure and requirement of continuous renal replacement therapy. Despite transfer to a quaternary center and initiation of VA extracorporeal membrane oxygenation, he expired.

Our case illustrates the importance of high suspicion for mechanical complications with late-presenting MI. VSR incidence is 0.2% of all MI patients seen 1-7 days post-infarction and should be considered in patients with a new murmur, heart failure, or cardiogenic shock. A pseudoaneurysm occurs when a full thickness cardiac rupture, involving all three layers of the cardiac tissue, is contained by the surrounding pericardium or scar. They are mostly asymptomatic, reported in less than 0.1% of MI patients, and are highly prone to rupture if left untreated. About one-third of all VSRs are associated with pseudoaneurysms. It is important to educate patients on the importance of early presentation at symptom onset to avoid these complications.

