

Follow Up in a Case of Cardiac Contusion Using Cardiovascular Magnetic Resonance

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A 29-year-old man with a history of cardiac contusion was referred for a cardiac magnetic resonance (CMR) study. Seven years previously while driving, he had been struck in the chest by a concrete block dropped through the windscreen of his car. On admission his ECG revealed right bundle branch block and left axis deviation. Three days later, the QRS duration had normalized, but there was anterior ST segment elevation. Subsequently, there was a large rise in serum creatine kinase, and transthoracic echocardiography revealed septal and apical hypokinesis. A thallium myocardial perfusion scan revealed fixed defects corresponding to the areas of hypokinesis and coronary angiography demonstrated unobstructed epicardial arteries. He was treated with an angiotensin converting enzyme inhibitor and has made an asymptomatic recovery. Recent CMR study revealed a dilated left ventricle with mildly impaired global systolic function. The interventricular septum and the mid anterior wall were hypokinetic. Late gadolinium-enhanced imaging revealed areas of subendocardial enhancement corresponding with hypokinetic segments in the mid anterior and septal walls. Furthermore akinesia and near transmural uptake was noted in the apical septum and mid inferior segments (Fig. 1). Delayed gadolinium-enhanced imaging has been shown to detect myocardial injury (necrosis or fibrosis) with unsurpassed spatial resolution and has been used to detect myocardial infarction and myocardial fibrosis in non-ischaemic cardiomyopathies. This is the first case to demonstrate the use of this technique to identify permanent myocardial damage caused by cardiac contusion.

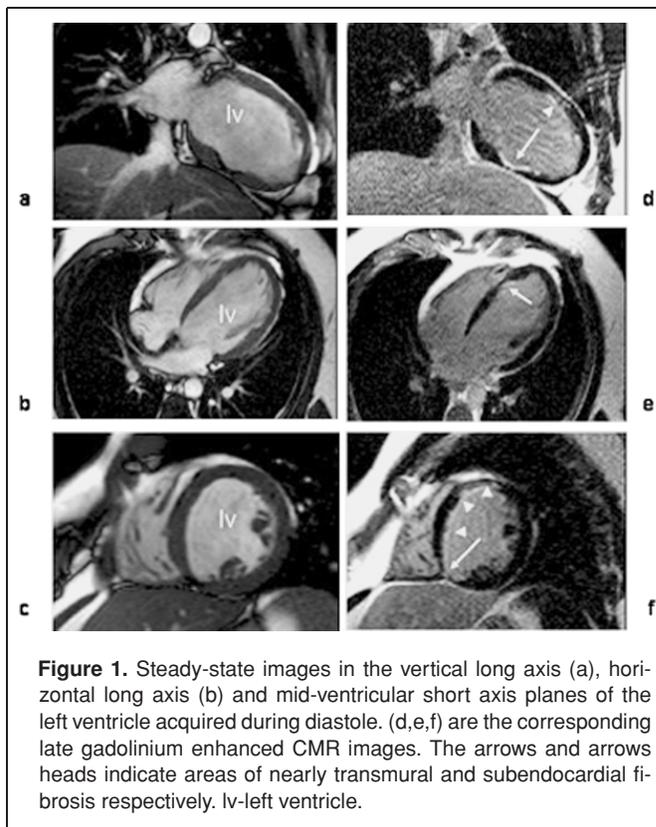


Figure 1. Steady-state images in the vertical long axis (a), horizontal long axis (b) and mid-ventricular short axis planes of the left ventricle acquired during diastole. (d,e,f) are the corresponding late gadolinium enhanced CMR images. The arrows and arrow heads indicate areas of nearly transmural and subendocardial fibrosis respectively. lv-left ventricle.

Keywords: Cardiac Trauma, Late Gadolinium Enhancement, Myocardial Infarction.

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