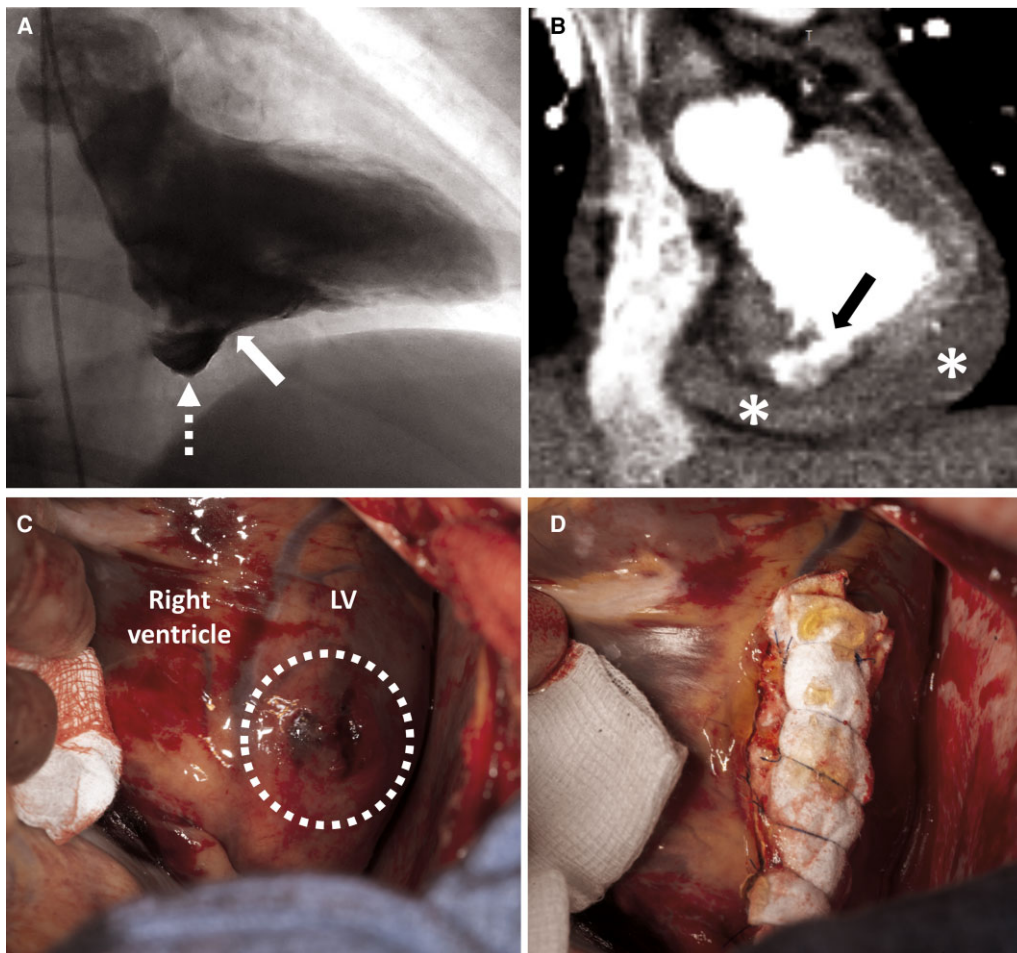


# Blow-out left ventricular free wall rupture after myocardial infarction

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A 57-year-old man was transferred from another hospital with suspicion of left ventricular (LV) rupture. He had chest pain 5 days prior to admission and presented in cardiovascular collapse. Electrocardiogram (ECG) showed subacute inferior ST elevation myocardial infarction (STEMI) (see [Supplementary material online, Figure S1](#)). A computed tomography (CT) aortogram demonstrated a large pericardial effusion and excluded aortic dissection. Echocardiography confirmed large pericardial effusion with pericardial thrombus and tamponade physiology and also showed a dyskinetic LV basal-inferior wall with suspicion of contained myocardial rupture (see [Supplementary material online, Video S1](#)). Coronary angiogram identified an occluded mid right coronary artery. Left ventriculogram showed a contained LV blow-out inferior wall rupture (*Panel A*, arrow) with extravasation of contrast into the pericardium (*Panel A*, dashed arrow). This was also apparent on reanalysing the CT images (*Panel B*: coronal view showing site of rupture [arrow] and pericardial effusion [\*]). The diagnosis was confirmed intraoperatively (*Panel C*, open circle). The LV rupture was repaired on cardiopulmonary bypass with Prolene horizontal mattress sutures buttressed by Teflon felt (*Panel D*). The patient subsequently made a full recovery.

In the current era, mechanical complications after acute myocardial infarction (including LV free wall rupture) are exceptionally rare (<0.3% of cases).<sup>1</sup> However, LV rupture still has an extremely high mortality (up to 90%).<sup>2</sup> It can present as either a blow-out or an oozing pattern, with the former being a macroscopic defect in the entire LV wall, with free communication between the LV cavity and pericardium, and the latter consisting in small localized lesions in the infarcted zone with minor bleeding in the pericardium.<sup>2</sup> Blow-out ruptures have higher mortality and surgical complication rates compared with oozing ruptures due to the narrower window of surgical opportunity and the higher risk of re-rupture associated with sutured repairs.<sup>2</sup>

When time allows, preoperative left ventriculogram can provide useful information about the location and anatomical complexity of the myocardial rupture, especially when the distinction between blow-out and oozing type cannot be established by echocardiography.<sup>3–5</sup>

Left ventriculogram has the potential to improve the surgical planning and outcomes. Use of low-speed injectors and avoidance of end-hole catheters is advocated,<sup>5</sup> in order to avoid sharp increase in intraventricular pressures and potential aggravation of the myocardial rupture.<sup>6</sup>

## Supplementary material

[Supplementary material](#) is available at *European Heart Journal—Quality of Care and Clinical Outcomes* online.

**Consent:** The authors confirm that written informed consent for the publication of this case report was obtained from the patient in line with Committee on Publication Ethics (COPE) guidelines.

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