

CLINICAL VIGNETTE

Intraoperative view on a rare but life-threatening complication of myocardial infarction

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Left ventricular free wall rupture (LVFWR), although infrequent, is one of the most serious complications of acute myocardial infarction (MI), usually occurring within the first week after MI. Patients with LVFWR require emergent surgical intervention. The vast majority of them die before transferral to the operating room. In June 2015 a 75-year-old man, without previous medical history of ischaemic heart disease, was admitted to the Interventional Cardiology Department due to the anterolateral ST elevation MI. On admission, the patient presented with chest pain of 5-h duration and elevated levels of high-sensitivity troponin T (hs-TnT) and creatine kinase-MB (CK-MB; 0.692 $\mu\text{g/L}$ and 102 U/L, respectively). Transthoracic echocardiography (TTE) showed an ejection fraction of 30%, apical wall akinesia, and a track of free fluid in the pericardium. Cardiac catheterisation showed total occlusion of the proximal left anterior descending (LAD) artery (Fig. 1). During cardiac catheterisation the patient's general condition rapidly deteriorated. Filled jugular veins, tachycardia (120 bpm), and low blood pressure (70/40 mmHg) were observed. The site of the rupture was not visible on ventriculography. Mechanical circulatory support with intra-aortic balloon pump (IABP) was started. Subsequent TTE revealed large accumulation of free fluid in the pericardium (maximum thickness 30 mm), and an emergent surgery was scheduled. The patient was immediately transferred to the operating room. Median sternotomy was performed and the patient was started on cardiopulmonary bypass in less than an hour since the diagnosis. Intraoperatively, 500 mL of blood was sucked out of the pericardial sac and a large thrombus (5 cm \times 7 cm) was removed from the apical region (Fig. 2). Visualising the rupture confirmed its ischaemic and non-iatrogenic cause. The rupture was stitched up with interrupted sutures (single-pledged 4-0 Prolene[®]) and a 4-cm-long Gore-Tex[®] patch. Next, a dressing consisting of human fibrin and thrombin on collagen matrix (TachoSil[®]) was applied. Considering the patient's age and general condition, saphenous vein graft was used instead of left internal mammary artery graft for LAD artery revascularisation.

During postoperative recovery, maximum levels of hs-TnT and CK-MB were 11.48 $\mu\text{g/L}$ and 416 U/L, respectively. IABP support was stopped six days post-surgery. Postoperative TTE showed an ejection fraction of 35%, and the patient was discharged home in good general condition. The patient's survival resulted not only from the appropriate response of the medical staff and early diagnosis, but also from the possibility of performing emergent on-pump surgery. Moreover, formation of the thrombus in the pericardium, which temporarily slowed down the bleeding, was presumably essential to the patient's survival. Early diagnosis and emergent cardiac surgery improve the outcome. However, despite these resources, the chances of survival are minimal.

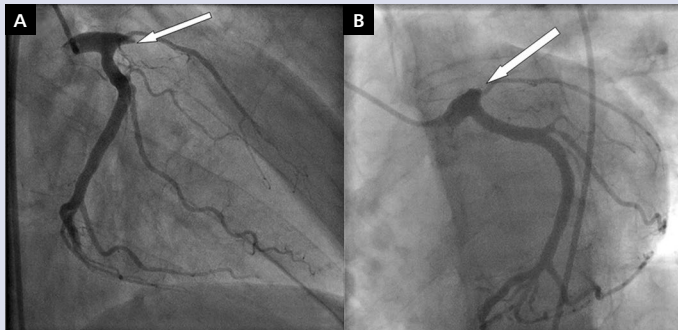


Figure 1. **A.** Right anterior oblique caudal projection; arrow — total proximal occlusion of left anterior descending artery; **B.** Left anterior oblique caudal projection; arrow — total proximal occlusion of left anterior descending artery

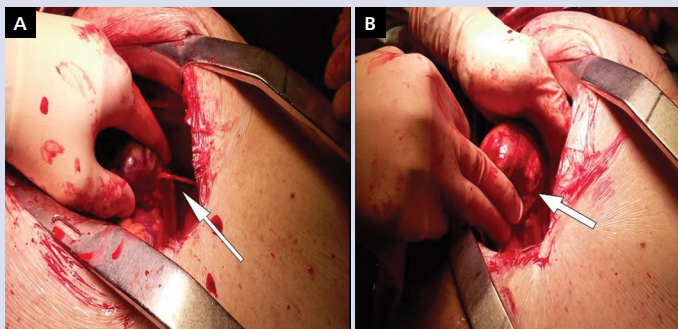


Figure 2. **A.** The place of the rupture (arrow); **B.** Rupture closed with a Gore-Tex[®] patch (arrow)

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