

A Case of Infarct Myocardial Fissure

A 63-year-old man was admitted to an emergency department for chest pain and recurrence of hypotensive syncope. The patient stated that he had experienced thoracic pain lasting 30 minutes followed by syncope 5 days before. Afterwards, he felt well and did not seek any medical consultation. Upon initial medical examination, he was awake, sweaty, hypotensive, with diffuse mottling, and complained of persistent thoracic pain. His initial blood pressure was 80/40 mm Hg with signs of peripheral hypoperfusion in the setting of cardiogenic shock. The electrocardiogram revealed profound Q waves and negative T waves in inferior leads (Figure 1A) Bedside cardiac ultrasound showed hyperechoic pericardium with cardiac tamponade (Figure 1B). Chest CT showed the absence of aortic pathology and confirmed the presence of a pericardial blood effusion with transmural perfusion defects of the posterolateral myocardial segments (Figure 1C, D, E, F, G, Video 1). The patient was transferred in an emergency to cardiac surgery to evacuate the tamponade pericardial hematoma (Figure 1H) During beating-heart surgery, the absence of rupture was confirmed and the fissure was fixed with a fibrin matrix patch (TachoSil®, Takeda GmbH, Austria).^{1,2} Post-operatively, moderate mitral insufficiency was identified due to tethering of the posterior wall and coronary angiography demonstrated the presence of the occluded circumflex coronary artery in the mid-segments (Culprit lesion in a mono-vessel coronary disease Figure 1I). The patient had an uneventful post-operative course and was transferred to cardiac rehabilitation after a week. The case, in addition to the favorable clinical outcome in an atypical mechanical complication of a late heart attack, is emblematic of the multidisciplinary approach of the medical professions involved and emergency multidisciplinary imaging (bedside ultrasound and chest CT). Multidisciplinary teamwork oriented by imaging timely provided the right healthcare pathway with the right diagnosis and treatment in a late complicated presentation of myocardial infarction.

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Video 1: 3D reconstructions of the lateral fissure of the left ventricular free wall.

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E-PAGE ORIGINAL IMAGE



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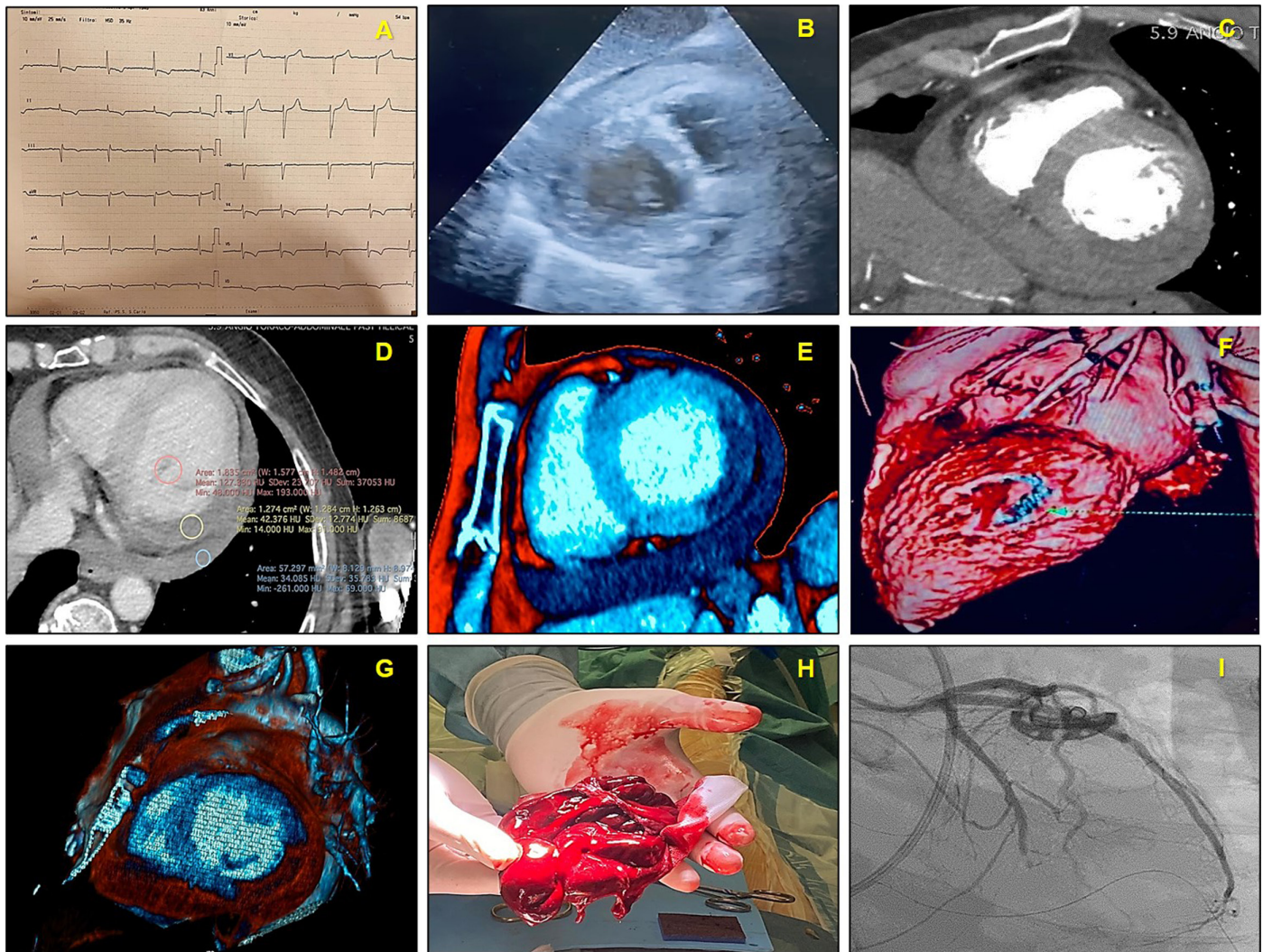


Figure 1. A: Electrocardiogram with signs of inferior-posterior-lateral ischemic necrosis. **B:** Images of hyperechoic tamponade pericardial effusion without evidence of free wall rupture. **C:** Baseline chest CT scan confirming the presence of a significant pericardial effusion without disruption of the myocardial contour. **D:** Tomodensitometric analysis in Hounsfield units which suggests the haematic nature of the effusion. **E, F, and G:** Non-gated venous acquisition showing the perfusion defect in the area of necrosis at the level of the circumflex coronary artery. **H:** Surgical evacuation of the pericardial hematoma in the absence of active bleeding and free-wall rupture. A fibrin patch was applied to the suspected fissure site. **I:** Post-operative coronary angiography showing the circumflex coronary artery occluded in the midsection.