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Images in Cardiology

Giant biventricular thrombi presenting with acute myocardial infarction



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ABSTRACT

Biventricular thrombi secondary to anterior myocardial infarction is very rare. We present a patient with giant biventricular thrombi subsequent to an old anterior wall myocardial infarction, and devastating consequences, including acute pulmonary artery and femoral artery embolism. We introduce a unique case report with demonstrative and illustrative images.

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A 47-year-old homeless man presented with shortness of breath and chest pain, which started a week ago. Electrocardiogram revealed normal sinusoidal rhythm and QS waves with marked ST-segment elevation and T-wave inversion in lead V1–6, which was consistent with subacute anterior myocardial infarction (AMI). Transthoracic echocardiogram showed a huge apical thrombus of 4.3 cm × 4.1 cm in dimensions coating left ventricular (LV) apical aneurysm, a hanging mobile thrombus at interventricular septum near to LV outflow tract, and a thrombus at right ventricular (RV) apex in 4.3 cm × 1.9 cm dimensions (Fig. 1) (Videos 1–2). A computed tomographic (CT) pulmonary angiography was performed because of hypotension, RV dilatation, and increased right-sided pressures, which could be secondary to pulmonary embolism. CT scan depicted an eccentric big partial filling defect due to a thrombus with biventricular giant thrombi (Fig. 2). Because of deteriorating hemodynamic state and hypotension, an urgent surgery decision was made.

Before the surgery, extracorporeal membrane oxygenation and LV-assist device therapies were discussed with cardiovascular surgeon team and the decision was in favor of operation with intra-aortic balloon pump IABP support. An IABP was deployed and intensive inotropic therapy was administered. Preoperative coronary angiogram showed a critical stenosis in proximal left anterior descending artery (LAD) with TIMI-3 distal blood flow and total occlusion of distal left circumflex artery (Fig. 2). Before the surgery, the patient complained of an intense pain in his right leg. Doppler ultrasound scan showed a thrombus in 4.6 cm × 2.4 cm dimensions in common femoral artery. LV aneurysmectomy, LAD-left internal mammary artery graft, and right femoral embolotomy were performed in the surgery. Although the surgery was successful, the patient died on the second day of operation due to deep hypotension and multiple organ failure. We present a study with deep investigations about the late catastrophic complications of AMI. AMI complicated

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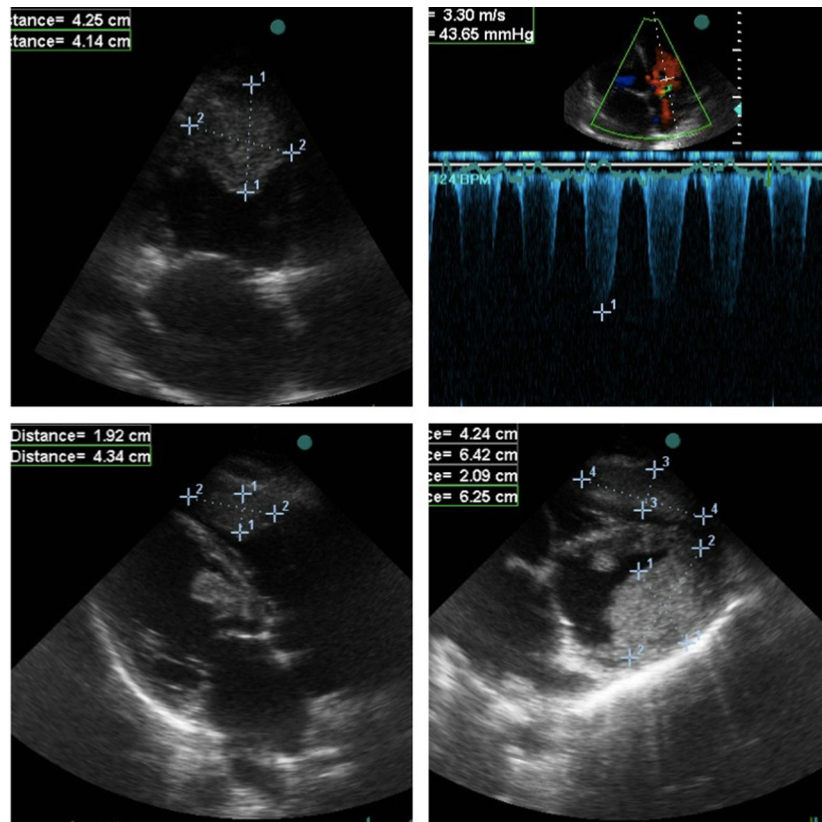


Fig. 1 – (a) Giant left ventricular thrombus; (b) increased systolic pulmonary artery pressure and (c and d) biventricular giant thrombi.

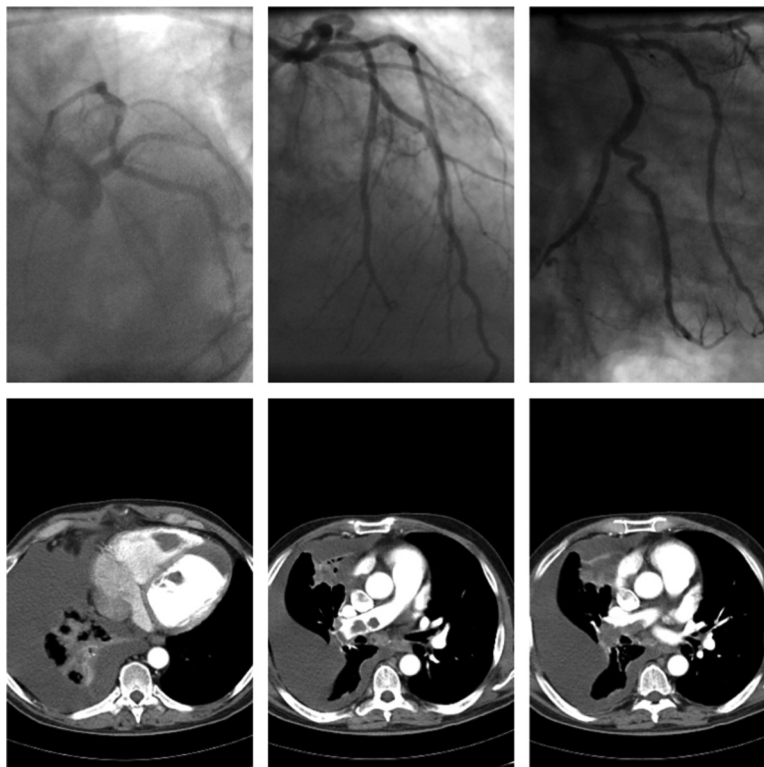


Fig. 2 – (a) Critical stenosis in proximal left anterior descending artery (LAD); (b) total occlusion of distal circumflex artery (CX) and (c) both LAD and CX lesions.

with both pulmonary and peripheral embolus is very rarely reported.

These simultaneous thrombi made us look for other reasons of thrombus formation than myocardial infarction. Inherited procoagulable syndromes were ruled out with laboratory tests. Factor V Leiden gene mutation and prothrombin gene mutation were negative. Protein C activity, protein S activity, fasting plasma homocysteine levels, anticardiolipin antibodies, lupus anticoagulants, and fibrinogen levels were determined to be in the normal ranges. In our patient, risk factors of procoagulable state were diabetes, heavy cigarette smoking, and probable immobility because of low social support.

Conflicts of interest

The authors have none to declare.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.ihj.2016.03.006](https://doi.org/10.1016/j.ihj.2016.03.006).