

Left ventricular pseudoaneurysm as a mechanical complication of acute myocardial infarction: a case report

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KEYWORDS: myocardial infarction, mechanical complications, pseudoaneurysm.

CITATION: *Cardiol Croat.* 2024;19(3-4):102. | <https://doi.org/10.15836/ccar2024.102>

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Introduction: Myocardial rupture is a well-recognized mechanical complication of ST-elevation myocardial infarction (STEMI). Pseudoaneurysm manifests as a unique entity, in which the rupture is sealed by pericardium, organized thrombus, and fibrosis. Importantly, pseudoaneurysms pose a considerable risk of progressing to a full rupture, mandating urgent surgical intervention.^{1,2}

Case report: 55-year-old female with a history of arterial hypertension and diabetes presented with subacute STEMI during a COVID-19 infection complicated by bilateral pneumonia. Coronary angiography revealed the mid left anterior descending artery occlusion, and as she was hemodynamically stable and without anginal symptoms, conservative management was continued. Transthoracic echocardiography (TTE) showed reduced left ventricular ejection fraction (EF 40-45%) due to left ventricular anterior wall akinesia. There were no significant valvular heart disease or mechanical complications. The patient was discharged in a stable condition with guideline-directed medical therapy (GDMT) for heart failure and acute coronary syndrome. At the three-week follow-up TTE, a left ventricular aneurysm was identified, measuring 3.8x4.7 cm with a small intracavitary thrombus. Due to persistent NYHA class III symptoms, her medical therapy was optimized by adding ARNI (sacubitril/valsartan) and increasing diuretics. A Vitamin K antagonist was initiated, and a close 10-day follow-up was scheduled. Two weeks later, the aneurysm doubled in size, prompting Intensive Care Unit admission. The patient remained hemodynamically stable. An emergency CT scan revealed a left ventricular aneurysm measuring 5.1x8.3x8.5 cm, with no signs of myocardial rupture or pericardial effusion. The heart team recommended a cardiac MRI to better understand the anatomical relations of the aneurysm, which revealed that it was, in fact, a large pseudoaneurysm that had grown further in size during the five-day interval since the CT scan, now measuring 9.3x8.4x8.2 cm, with an additional pseudoaneurysm formed on top of the first one, measuring 5.5x3.9x5.5 cm. The patient underwent urgent surgery and recovered with no major complications.

Conclusion: Ventricular pseudoaneurysm is a rare mechanical complication of myocardial infarction. While echocardiography often distinguishes between LV aneurysms and pseudoaneurysms, MRI may be necessary in equivocal cases. Surgical repair is the preferred treatment approach for most patients.

RECEIVED:
October 22, 2023

ACCEPTED:
October 27, 2023



LITERATURE

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