






## Ventricular free wall rupture after myocardial infarction - a single-center retrospective analysis

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**Introduction:** Free wall rupture (FWR) is the most dramatic complication of myocardial infarction with ST elevation (STEMI), with an overall incidence of 0.3%–1% and a mortality rate of up to 90%.<sup>1</sup> The clinical course can range from catastrophic, with acute tamponade and immediate death, to subacute, with hypotension, syncope, and pericardial discomfort.<sup>2</sup> Echocardiography reveals pericardial effusion, tamponade, and pericardial clot.<sup>3</sup> After hemodynamic stabilization and revascularization, definitive treatment requires surgical intervention. The aim of the study was to determine the incidence of FWR in patients admitted with myocardial infarction (MI) to the General Hospital "Dr. Josip Benčević" in Slavonski Brod.

**Patients and Methods:** We performed a retrospective analysis of patients admitted with ST-elevation myocardial infarction (STEMI) to the General Hospital "Dr. Josip Benčević" in Slavonski Brod. We used data from the registry of patients treated for acute MI, data from medical records, and data from the hospital information system.

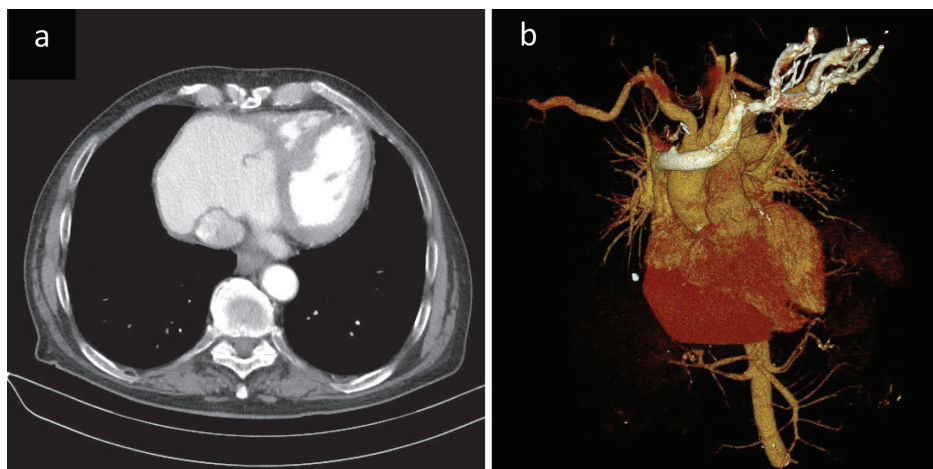
**Results:** Between January 2020 and September 2023, five of 820 patients with STEMI developed FWR (0.6%). All patients were initially admitted and treated at Slavonski Brod General Hospital and then transferred to clinic for surgical treatment. Two patients were diagnosed with FWR on admission, a 71-year-old female with posterolateral STEMI and circumflex artery (CX) lesion who died before surgical intervention, and a 68-year-old male with subacute MI and right coronary artery (RCA) lesion who survived initial surgical treatment but died after reoperation because of postoperative cerebrovascular incident, sepsis, and multiorgan failure (Figure 1). One patient, a 74-year-old man with anterior STEMI and left anterior descending artery lesion, was treated conservatively for incomplete FWR. One patient, a 71-year-old woman with inferior STEMI and RCA

lesion, presented with FWR two days after revascularization and was successfully treated surgically. One patient is still in the hospital awaiting surgical intervention after being treated at our hospital for a subacute inferoposterior MI and CX lesion.

**Conclusion:** FWR is a rare but potentially life-threatening mechanical complication of acute MI with a high in-hospital mortality rate. Rapid diagnosis by echocardiography is important, and prompt surgical intervention and stabilization are key to survival.

### LITERATURE

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**FIGURE 1.** Contrast-enhanced multi-slice computed tomography angiography (a) and three-dimensional reconstruction (b) showing pseudoaneurysm due to subacute myocardial infarction and a right coronary artery lesion.

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