

An unusual long-term follow-up of a patient with a left ventricular pseudoaneurysm after myocardial infarction

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Left ventricular free wall rupture can be complicated by cardiac tamponade or pseudoaneurysm. The latter complication manifests clinically with heart failure and thromboembolic complications, but 10% to 48% of patients remain asymptomatic [1, 2].

A thin wall and reduced stress tolerance increase the risk of pseudoaneurysm rupture, which occurs in 30% to 45% of cases [3]. The gold standard treatment is cardiac surgery [1]. In rare cases, pseudoaneurysms are treated conservatively or with percutaneous repair [4].

A 75-year-old woman was admitted for inferolateral myocardial infarction. We performed *ad hoc* circumflex artery angioplasty that was complicated by coronary artery perforation. Surgical relief of cardiac tamponade was performed, and the perforation was successfully sealed using a TachoSil patch. The patient developed paroxysmal atrial fibrillation, which was treated with rivaroxaban.

At 8 weeks, the patient had a consultation with the Heart Team due to a pseudoaneurysm in the inferolateral left ventricular wall, as shown on computed tomography (CT) (Figure 1A). She was considered ineligible either for surgical or percutaneous aneurysm closure. Discontinuation of anticoagulant treatment was recommended. Follow-up CT (Figure 1B) at 5 months showed significant thrombosis of the aneurysm. During the subsequent year, ambulatory treatment with rivaroxaban was introduced. Control CT (Figure 1C) revealed partial recanalization of the aneurysm. Following the previous percutaneous closure of the left atrial appendage using the Watchman device, and 8 weeks after the procedure, anticoagulant treatment was discontinued. This led to the formation of a device-related

thrombus, as shown on echocardiography (Figure 1D) at 12 weeks. Ten months after the initiation of rivaroxaban, the device-related thrombus resolved and partial recanalization of the pseudoaneurysm was achieved, as evidenced by magnetic resonance imaging. Anticoagulant treatment was again discontinued, but imaging studies 2 months later showed a free-floating thrombus originating from the aneurysm cavity as well as multiple occlusions in the arteries of the right lower limb. Unfractionated heparin was administered, followed by rivaroxaban, resulting in complete thrombus resolution after 7 days of treatment. CT at 3 months revealed the lack of an organized thrombus. The size of the pseudoaneurysm remained stable over the 3-year follow-up. The Heart Team decided on the continuation of rivaroxaban.

Despite cardiac surgery recommendation for our patient [5], we opted for a watchful waiting approach, mainly because of the high perioperative risk (sternotomy 2 months earlier) and good general clinical condition [2]. The decision on anticoagulant treatment remained challenging. On one hand, anticoagulation was necessary due to atrial fibrillation. On the other hand, it could compromise wall thickness by reducing the thrombus content of the aneurysm. Data on anticoagulant treatment in patients with pseudoaneurysms are scant. In our patient rivaroxaban led to partial recanalization of the pseudoaneurysm. However, discontinuation of anticoagulant treatment resulted in the formation of a device-related thrombus following Watchman device placement as well as a free-floating thrombus arising from the thrombosed aneurysm. Based on the risk-benefit assessment,

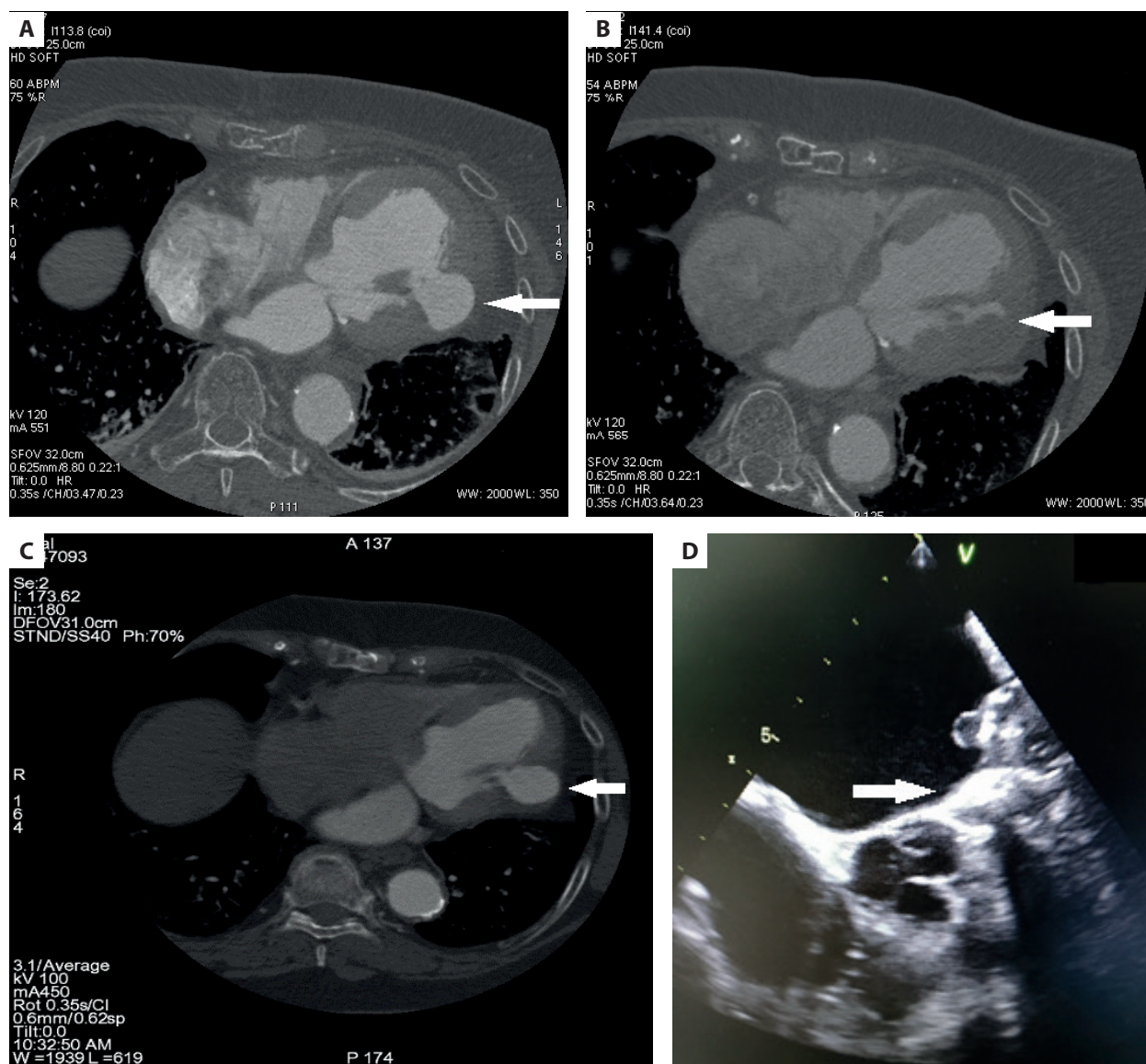


Figure 1. A. Cardiac computed tomography — left ventricular pseudoaneurysm. B. Cardiac computed tomography — partial thrombosis of the pseudoaneurysm. C. Cardiac computed tomography — recanalization of the pseudoaneurysm. D. Transesophageal echocardiography. The arrow indicates a thrombus adherent to the occluding device

the final decision was made to continue anticoagulation with rivaroxaban. During the 4 years of follow-up, the patient remained in good clinical condition.

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