

# Left ventricular mass mimicking ST-segment elevation myocardial infarction: an initial manifestation of squamous cell carcinoma

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Although secondary cardiac metastases are mostly asymptomatic and often occur in patients with a history of malignancy, they can manifest as acute coronary syndrome, including ST-segment elevation myocardial infarction (STEMI) [1, 2]. Here, we present the first case of an adult patient diagnosed with a left ventricular (LV) mass due to squamous cell carcinoma (SCC) of unknown origin following STEMI.

A 76-year-old male patient presented to our emergency department with chest pain persisting for 2 hours. His medical history was not remarkable. Electrocardiography (ECG) performed at the emergency department revealed an ST elevation in V2–V6, I, and aVL leads (Figure 1A). The patient was immediately transferred to the catheterization laboratory for primary percutaneous coronary intervention. Coronary angiography revealed total occlusion of the proximal part of the diagonal artery (Figure 1B, Supplementary material, Video S1). The occlusion could not be crossed despite the use of multiple guidewires and balloon support (Figure 1C, Supplementary material, Video S2). During hospitalization, ST elevations persisted. Bedside transthoracic echocardiography revealed a mass in the apical and lateral segments of the LV (Figure 1D, Supplementary material, Video S3). Initially, the mass was thought to be a thrombus due to its appearance and accompanying persistence of ST elevation. Besides, there was no history of malignancy, therefore metastases were considered highly unlikely. Following consultation of cardiac surgeons, the patient underwent emergency surgery. The mass was found to be solid and fibrous by nature and involving the myocardium and endocardium. The mass was resected, and the LV was repaired using the sandwich technique (Figure 1E). However, the patient died of car-

diogenic shock on the first postoperative day. Microscopic and immunohistochemical examinations confirmed the diagnosis of SCC of the LV myocardium (Figure 1F).

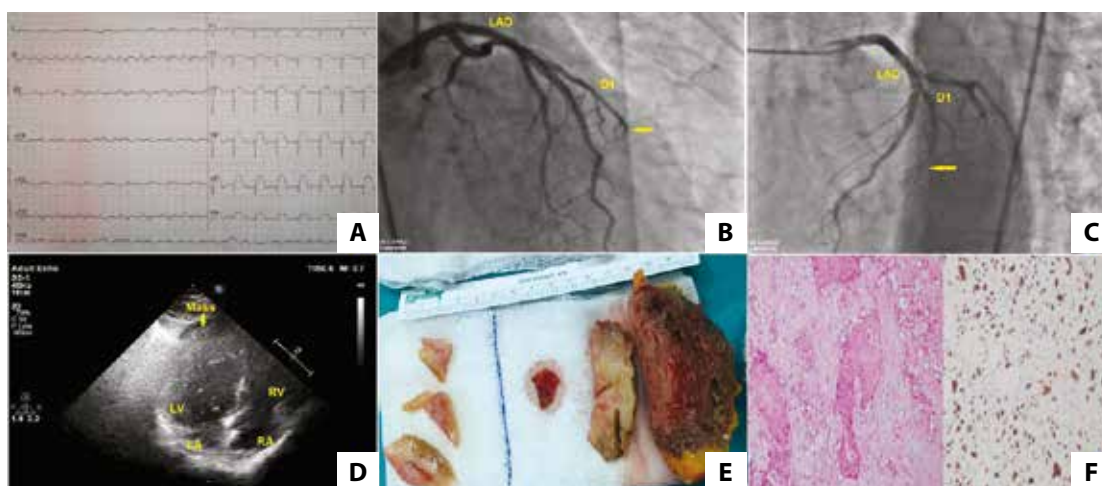
In the case of the patient, since we thought that there was no myocardial involvement and the characteristics of the mass would not affect the decision on surgery, we left the final diagnosis of the mass for the intraoperative and postoperative period and did not perform any advanced imaging modality, such as positron emission tomography, cardiac magnetic resonance imaging (MRI), or computed tomography. Perhaps the absence of a coronary lesion that could explain such an extensive ST elevation should have suggested a myocardial involvement, which is the main conclusion for cardiologists. Besides that, if performed, the cardiac MRI would accurately assess whether it was a thrombus or a malignant tumor.

Due to the lack of estimation of the size and possible origin of the tumor in the cardiac MRI or computed tomography imaging tests, the extent of the LV tumor resection was probably too large and the remaining LV volume too small to ensure cardiac output, resulting in cardiogenic shock [3]. If imaging tests were performed, there was a chance to identify the primary tumor and to qualify the patient for oncological treatment without cardiac surgery.

In conclusion, what we have learned from this case is that every patient with a cardiac mass should undergo imaging modalities that could reveal the presence of the mass, and, if present, the extent of myocardial involvement before making decision on surgery.

## Supplementary material

Supplementary material is available at [https://journals.viamedica.pl/kardiologia\\_polska](https://journals.viamedica.pl/kardiologia_polska).



**Figure 1. A-F.** Electrocardiographic, coronary angiographic, and pathological findings in the patient. **A.** Electrocardiographic findings. **B.** Coronary angiographic image showing total occlusion (arrow) of the proximal diagonal artery. **C.** Recanalization could be achieved in the infarct-related artery despite the use of multiple guidewires and balloon support (arrow). **D.** Transthoracic echocardiographic image showing a mass (arrow) in the apical and lateral parts of the left ventricle in an apical 4-chamber view. **E.** Gross pathology of the mass. **F.** Hematoxylin-eosin staining of the tumor; immunohistochemical analysis revealed that the tumor was p40 (+)

### Article information

**Conflict of interest:** None declared.

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