A rare discovery in the left atrium: A high-grade sarcoma with cerebral metastasis

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Heart tumors are very rare cardiovascular diseases. They are most often metastatic tumors derived from neoplasms located in other organs, e.g. lungs or breasts. Metastatic tumors occur 20–30 times more often than primary cardiac tumors [1]. Currently, there are no non-invasive clinical or imaging method to recognize the type of endocardial tumor. Histopathological examination is the only effective method used to identify the type of neoplasm [2].

Herein, we present a rare case of a malignant tumor in a 34-year-old female patient, previously without comorbidities, with heart failure symptoms and a pathological mass in the left atrium (LA) detected incidentally on echocardiography.

The symptoms that forced the patient to report to the hospital included deterioration of exercise tolerance (New York Heart Association [NYHA] class II) and general weakness. Laboratory tests revealed anemia, elevated C-reactive protein, fibrinogen, and troponin T. Chest X-ray showed an enlarged cardiac silhouette. Transthoracic echocardiography revealed normal contractility of the left ventricular walls with preserved left ventricular ejection fraction — 52%, no pericardial fluid, a large mass, measuring 59 × 20 mm, filling half of the LA. A fragment of the mass of approximately 30 mm protruded into the left ventricle narrowing the mitral annulus, making the posterior mitral leaflet protrude and causing significant mitral regurgitation (Figure 1A–C). A suspicion of myxoma was raised. The patient was admitted to the Department of Cardiac Surgery and scheduled for urgent surgical treatment.

Intraoperative transesophageal echocardiography (Supplementary material, *Figure S1*) confirmed the presence of an encapsulated tumor and a mixed mitral valve disease of moderate severity. The neoplasm was removed in its entirety. The operation proceeded without complications and the material was sent for histopathological examination (Supplementary material, *Figure S2*).

Based on the histopathological examination, high-grade sarcoma of the phenotype desmin–; Ki67+; CD34–; CD31–; Melan A–; CK–; SMA–; S100p– was diagnosed (Supplementary material, *Figure S3*). The patient was transferred for further oncological care that resulted in initiation of chemotherapy. Two months after the surgery, the patient was referred again to the hospital because of a speech disorder. Cranial computed tomography scan revealed a hypodense lesion of 26 × 35 × 31 mm in the brainstem with signs of edema, involving also the brain branches bilaterally and slightly the prolonged medulla. A suspicion of metastasis was raised. The patient was referred to the department of neurosurgery. It is worth emphasizing that the patient died 3 months after the initial diagnosis, unlike the longer survival period of patients from the presented literature (Supplementary material, *Table S1*).

The most common primary cardiac neoplasms are myxomas, located mostly in the LA (70%). Cardiac sarcoma, especially in the LA, while described extremely rarely, is asso-

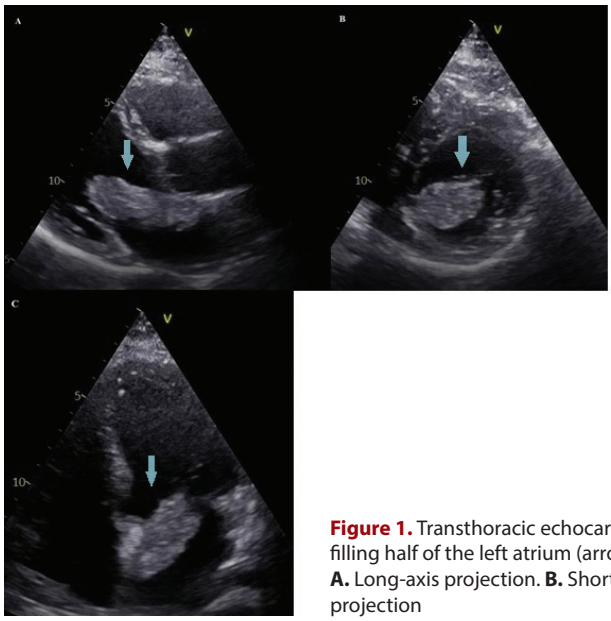

Figure 1. Transthoracic echocardiography: large pathological mass filling half of the left atrium (arrows points to the tumor). **A.** Long-axis projection. **B.** Short-axis projection. **C.** Four-chamber projection

ciated with a poor prognosis. The average patient survival is about 1 year [3]. Cardiac sarcoma occurs with a similar frequency in both sexes [4]. Its most common location is the right atrium, followed by the LA and both heart chambers, however, the intravascular incidence was also reported [5]. This neoplasm may cause lung, liver, and, extremely rarely, brain metastases, which significantly worsen the prognosis [2]. Cardiac surgery is the treatment of choice in most cases. Additional treatment methods include chemotherapy and radiotherapy [3].

Supplementary material

Supplementary material is available at https://journals.viamedica.pl/kardiologia_polska.

Article information

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