



## **Pericardial hemangioma: An extremely rare cardiac tumor**

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## **Pericardial hemangioma: An extremely rare cardiac tumor**

**Short title:** Pericardial hemangioma

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We present a case of a 52-year-old male patient, for whom was consulted a cardiologist due to increased fatigue over the past few months. The patient mentioned only arterial hypertension as a comorbidity. A tumoral change in the right atrium was seen on transthoracic echocardiography. Transesophageal echocardiography (TEE) confirmed a tumoral change, characteristic of myxoma, in the projection of the right atrium, size 35 × 31 mm, attached to the free wall of the right atrium above the mouth of the inferior vena cava (**Figure 1A**). The complete valvular apparatus was without pathological changes. Coronary angiography was normal. The heart team indicated surgical intervention.

The operation was performed under general endotracheal anesthesia through a medial sternotomy. Pericardiotomy showed normocardia, a heart of regular size and systolic function, with a visible solid, oval, clearly circumscribed epicardial tumor mass on the free lateral wall

of the right atrium and right ventricle (Figure 1B). A complete excision of the tumor was performed (Supplementary material, *Video S1*). The formation was dark red in color, oval, with a wormy consistency (Figure 1C).

The postoperative course was uneventful. Control echocardiography showed preserved systolic and diastolic functions of the heart without pericardial effusion. Pathohistological analysis showed that it is a benign tumor, made up of many distended vascular spaces of the capillary type, whose inner walls are lined with thin, flattened endothelium and the lumens are filled with blood. Some capillary blood vessels have very thickened walls, and the lumens are empty. Dense clusters of angioblasts without central lumens are focally visible. The described histological picture corresponds to a capillary hemangioma (Figure 1D). The patient was discharged on the sixth postoperative day in good general condition.

Primary cardiac tumors are rare, with an incidence rate of 0.0017%–0.019% in the autopsy series [1]. Most often, these are benign tumors, mainly myxomas, fibroelastomas, and lipomas. Cardiac hemangiomas are rare cardiac tumors, with an incidence of less than 2% [2]. The sites of origin of cardiac hemangioma can be from any of the three cardiac layers, either the endocardium, myocardium, or epicardium [3]. The epicardium is the rarest site of origin for these tumors. So far, only 13 cases of pericardial hemangioma have been described in the literature worldwide [4]. Although the first pericardial hemangioma was described back in 1963, the remaining 12 were described in the last 20 years, which leads to the conclusion that the diagnosis of these tumors has been improved by better diagnostic achievements. In our case, TEE showed a tumoral change in the right atrium, but it was actually in the pericardial space, which confirms that TEE cannot determine the exact location of the tumor with 100% certainty. The clinical presentation can be different depending on the size and localization of the tumor. Some of the cases described so far were asymptomatic, and most were accompanied by dyspnea, syncope, and chest pain [4]. It is recommended that surgical excision be performed as soon as possible.

### **Supplementary material**

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

### **Article information**

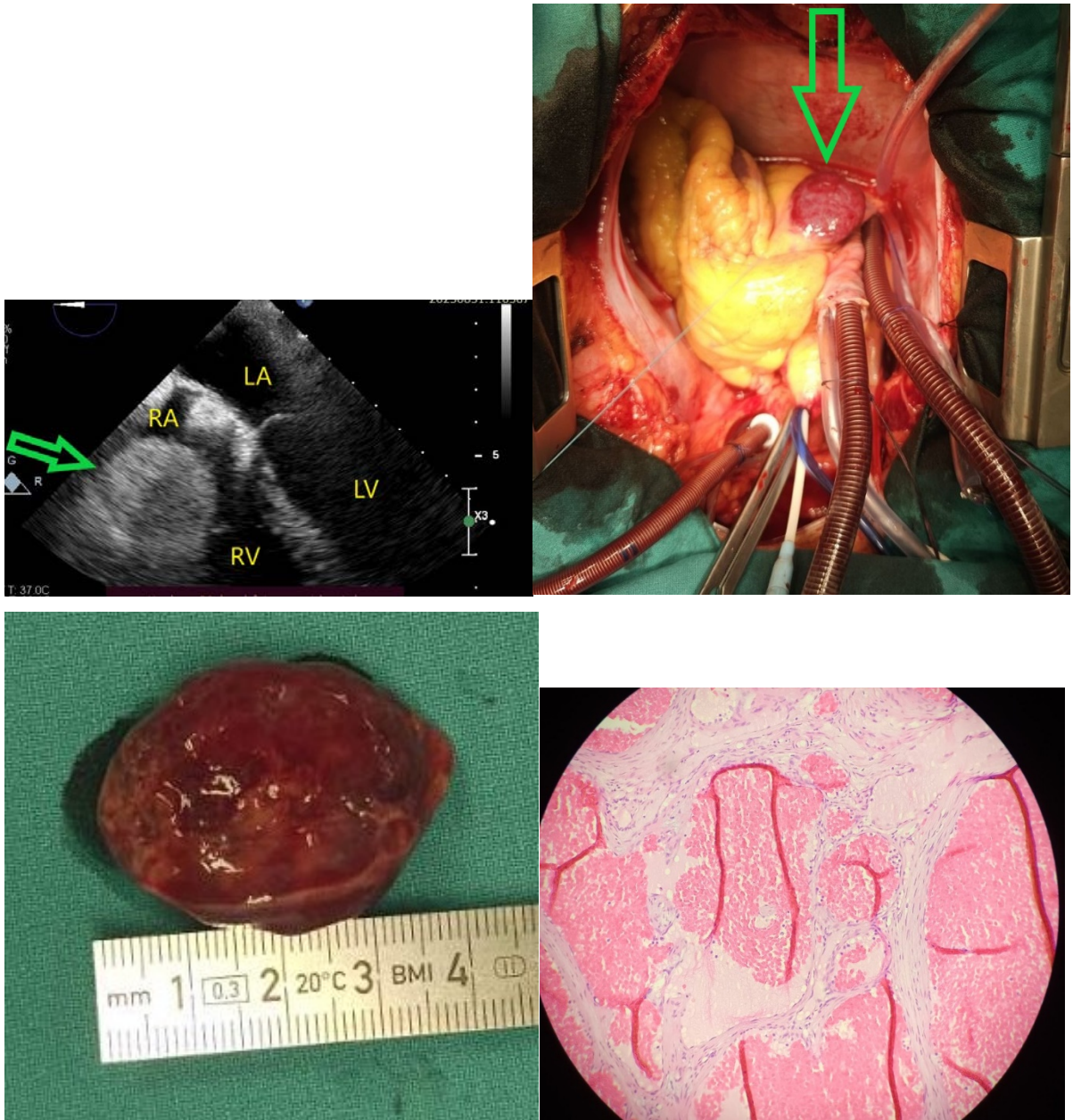
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**Figure 1.** **A.** Transesophageal echocardiography (4-chamber view) shows a tumoral change (arrow) in the right atrium. **B.** Intraoperative view: tumor (arrow) is present on the lateral side of the right atrium and ventricle. **C.** An excised tumor (dark red in color, oval, with a wormy consistency). **D.** Microscopic analysis: capillary hemangioma made up of many distended vascular spaces of the capillary type, whose inner walls are lined with thin, flattened endothelium and the lumens are filled with blood

Abbreviations: LA, left atrium; LV, left ventricle; RA, right atrium; RV, right ventricle