

An unexpected spherical mass in the left ventricle accidentally found during abdominal ultrasound

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A 28-year-old female physician with no previous medical history was admitted with a suspicion of a left ventricular (LV) tumor, which had been accidentally detected during a routine abdominal ultrasound. The patient denied any cardiovascular symptoms.

A subcostal view and other projections of transthoracic echocardiography (TTE) revealed a highly echogenic well-defined mobile spherical mass (10 × 11 mm) attached to the normokinetic part of the LV at the border of apical and midventricular segments of the inferior wall and the interventricular septum, in close proximity to the posteromedial papillary muscle (FIGURE 1A–1C and 1E). TTE images were not typical of a thrombus or a parasitic disease; therefore, an LV myxoma was suspected. Because of an unclear type of the tumor and an increased risk of peripheral embolism, the patient underwent surgery and the pathological lesion was resected. Surprisingly, an intraoperative microscopic and histopathological examination revealed rhabdomyoma with typical

spider cells. No abnormalities were found during a follow-up TTE performed 12 months after the surgery (FIGURE 1D and 1F). Our patient has remained in good condition.

Intracardiac tumors are usually found accidentally during routine echocardiographic examinations, and sometimes during an abdominal ultrasound in so called subcostal projections showing the LV. Primary cardiac tumors are very rare and most frequently benign, in contrast to secondary metastatic tumors.¹ In adults, myxomas and papillary fibroelastomas are the most common tumors found in the left heart. The majority of myxomas (>75%) are located in the left atrium, and they are infrequently found in the LV cavity. Fibroelastoma is usually attached to the aortic or mitral valve.^{1,2}

Cardiac rhabdomyoma is a benign neoplasm most commonly found in children, especially in infants, and it is extremely rare in adults. It is often associated with hamartomatous diseases, mainly with tuberous sclerosis.³

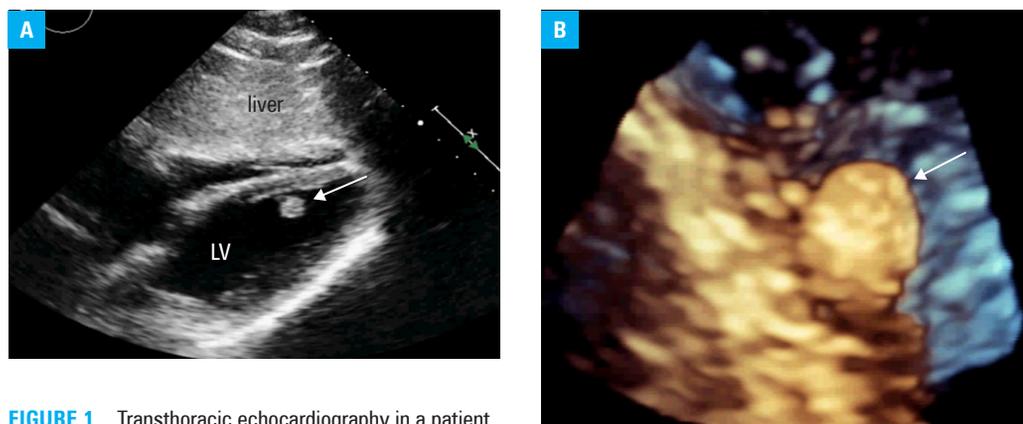
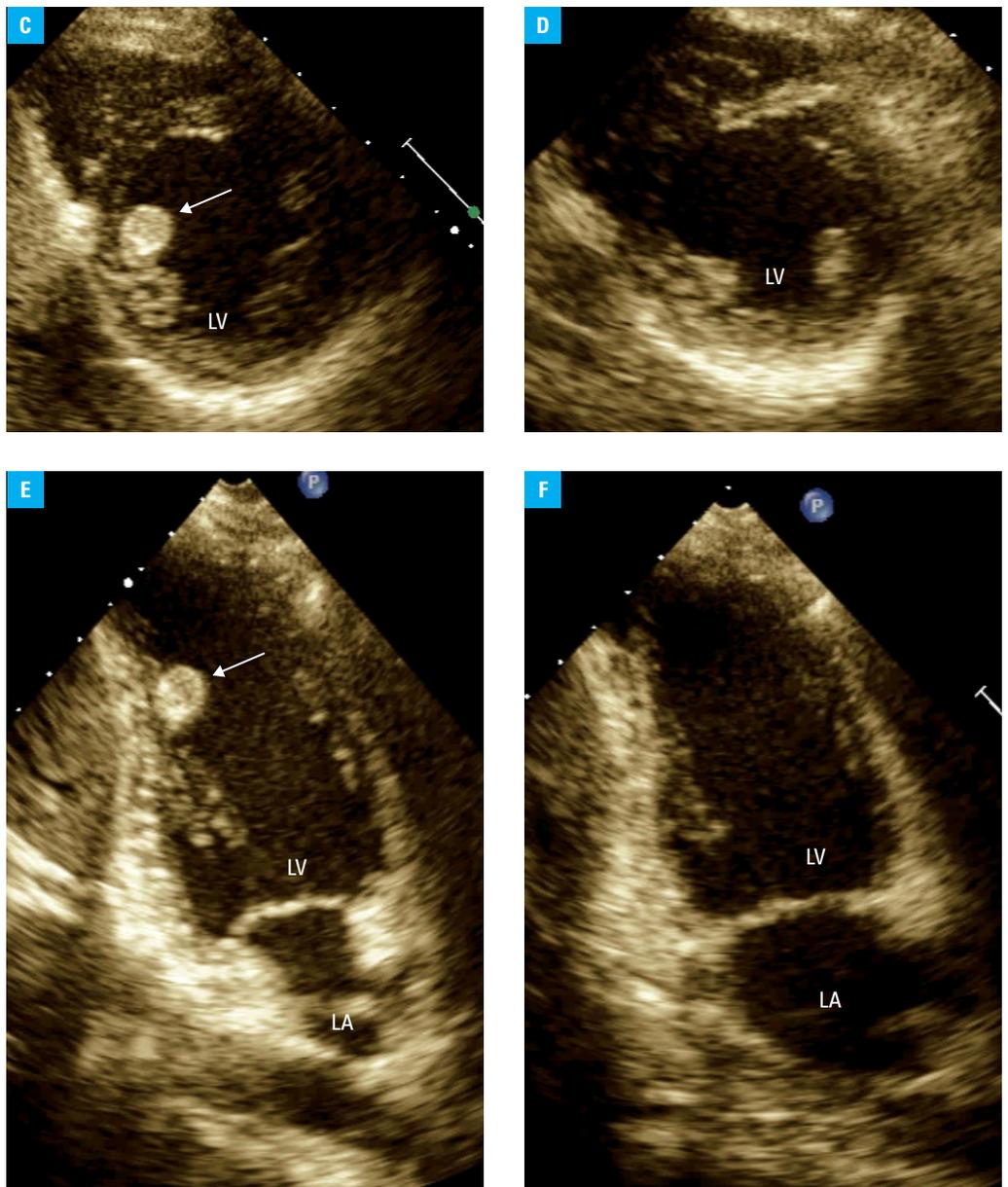


FIGURE 1 Transthoracic echocardiography in a patient with left ventricular (LV) rhabdomyoma before and at 1 year after the surgery: **A** – an additional spherical mass in the left ventricle (arrow), subcostal view; **B** – 3-dimensional image of the pathological structure (arrow)

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FIGURE 1

Transthoracic echocardiography in a patient with left ventricular rhabdomyoma, before and at 1 year after the surgery: **C** – short-axis view before the surgery; **D** – short-axis view after the surgery; **E** – 2-chamber view before the surgery; **F** – 2-chamber view after the surgery; arrows indicate left ventricular rhabdomyoma. Abbreviations: LA, left atrium; LV, left ventricle



Rhabdomyomas are usually attached to the interventricular septum or the LV free wall. They can be hyperechogenic, homogenous, and brighter than myocardial tissue on ultrasound.² Interestingly, spontaneous regression of rhabdomyoma was reported in pediatric patients.^{3,4}

In adults, LV thrombi should be considered in a differential diagnosis. A probability of an LV thrombus is high in patients after myocardial infarction when TTE reveals a spherical mass attached to the LV wall with impaired contractility, especially in the apical region,¹ and it is low in patients with preserved LV contractility.

Cardiac rhabdomyoma often remains asymptomatic, but in some cases, it may cause tachycardia and different supraventricular and ventricular arrhythmias.⁵ In patients with obstructive symptoms and persistent arrhythmias, a surgical tumor resection is usually required.^{4,5}

Each pathological mass located in the left heart is a potential source of systemic embolism, including stroke.¹ For that reason, the surgical

removal of the lesion should be always considered. In asymptomatic adult patients with rhabdomyoma treated conservatively as well as in all patients after cardiac surgery, a meticulous echocardiographic follow-up is recommended.

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