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An 84-year-old man with dyspnoea, tumour in the left atrium suspected and diaphragmatic hiatal hernia diagnosed

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Abstract

This article discusses the case of an 84-year-old patient who presented to the Clinic of Cardiology due to worsening dyspnoea. The patient's echocardiogram revealed a tumour in the left atrium, suggestive of myxoma.

Key words: cardiac tumour, myxoma

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Introuction

Tumour-like lesions in the heart can be neoplastic and non-neoplastic [1]. Cardiac tumours are structures located within the cardiac chambers, individual layers of the heart or the entire cross-section of the heart wall. Primary cardiac tumours are less common than metastatic tumours [2]. In the case of primary tumours, more than 75% of them are benign [2, 3]. The most common primary benign tumour is myxoma that can be usually found in the left atrium [4]. Almost all malignancies (excluding central nervous system tumours) can metastasise to the heart. The most common source of metastases to the heart is lung cancer (approx. 30–40% of cases). Others include breast cancer, oesophageal cancer, melanoma, leukaemia or lymphoma [5]. Additional structures that can be observed in the heart, in addition to proliferative lesions, may include thrombi, bacterial vegetations, inflammatory tumours, abscesses, *etc.* [1]. Differential diagnosis, based mainly on imaging tests, is thus necessary because the management is different in each of these cases [2]. The prognosis can vary greatly, depending on the established diagnosis. Complete cure is possible in cases of thrombus, bacterial vegetations or benign primary cardiac tumours. Malignant primary tumours and metastases have a very poor prognosis; usually, the survival time is less than one year after diagnosis.

Case report

An 84-year-old patient was admitted to the department of cardiology for dyspnoea that had been worsening for several weeks. The symptoms occurred primarily at night, causing sleeping difficulty. In addition, the patient suffered from occasional coughing. Otherwise, the patient did not complain about any other symptoms of respiratory tract infection. The patient was previously treated for chronic heart failure and preserved left ventricular ejection fraction. He was diagnosed with moderate aortic stenosis. Due to sinus node disease, he had a dual-chamber pacemaker implanted the previous year. Moreover, the replacement of the ventricular lead was performed due to its dysfunction approximately 3 months before the discussed hospitalisation.

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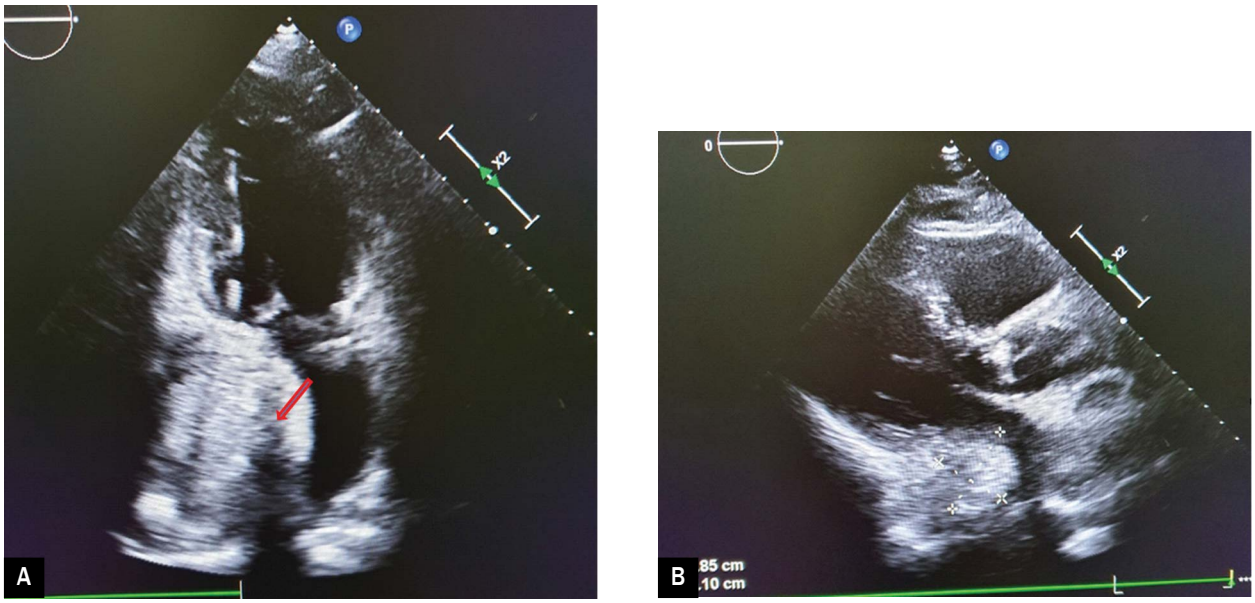

Figure 1. Transthoracic echocardiography: **A.** Dual-chamber view — a structure compressing the left atrium marked with an arrow; **B.** Parasternal long-axis view — a structure protruding into the left atrial chamber marked

On admission, the patient was in overall good condition. He reported mild dyspnoea, he was not febrile. The physical examination revealed a quiet systolic murmur during auscultation of the aortic valve, normal vesicular murmur over the lung fields. There was no evidence of peripheral oedema. The electrocardiographic (ECG) recording revealed DDD pacing at 65 bpm.

The laboratory tests revealed mild anaemia [haemoglobin (Hb) 10.8 g/dL], iron deficiency (Fe 53 µg/dL) and ferritin deficiency (15 ng/mL), slightly elevated C-reactive protein (CRP) levels (15.14 mg/dL) and elevated D-dimer levels (1,376 µg/L), as well as normal B-type natriuretic peptide (BNP) values (24 pg/mL) and a negative polymerase chain reaction (PCR) test result for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. The chest X-ray revealed abnormalities such as fine fibrosis in the left lung apex, a 4 mm nodule of high density at the base of the right lung and calcifications in the aortic arch — these lesions were also observed on X-ray on the previous year; no progression. On the second day of hospitalisation, transthoracic echocardiography (TTE) was performed, which revealed enlargement of the left atrium (57 mm) and the presence of a tumour-like lesion in the left atrial chamber. As suggested by the echocardiographer, this lesion may be a structure originating from the left atrial wall or is a tumour protruding into the atrial chamber and originating from extracardiac structures (Figure 1). The patient was referred for further diagnostic testing of the suspected tumour and computed tomography (CT) scan was recommended. A chest CT scan revealed the presence of an oesophageal hiatal hernia measuring 35 × 55 mm, without any pathological structure in the left atrial chamber (Figure 2).

The patient was surgically consulted; conservative management was recommended. A proton-pump inhibitor was initiated, an appropriate diet was advised, and a referral to the Gastrology Outpatient Clinic was made. The patient was discharged home in stable condition.

Discussion

The tumour-like lesions occurring in the heart are largely benign [3]. The most common diagnosis is left atrial myxoma, which was suspected in the patient in question. Other primary benign lesions include papillary fibroelastoma, lipoma and rhabdomyoma [3]. Primary malignant lesions include various types of sarcomas, lymphomas or pericardial mesothelioma.

Symptoms of cardiac tumours depend primarily on their size and location, but less on their histological structure [6]. Depending on the location of the tumour, there may be consequences in the form of pulmonary embolism, peripheral embolism (usually stroke), cardiac arrhythmias [4, 7], cardiac tamponade or symptoms of heart failure. In an observational study conducted on 36 patients hospitalised for myxoma, as many as 8 patients (22%) presented with neurological symptoms. Stroke was the most common diagnosis (75%), followed by transient ischemic attack (TIA)

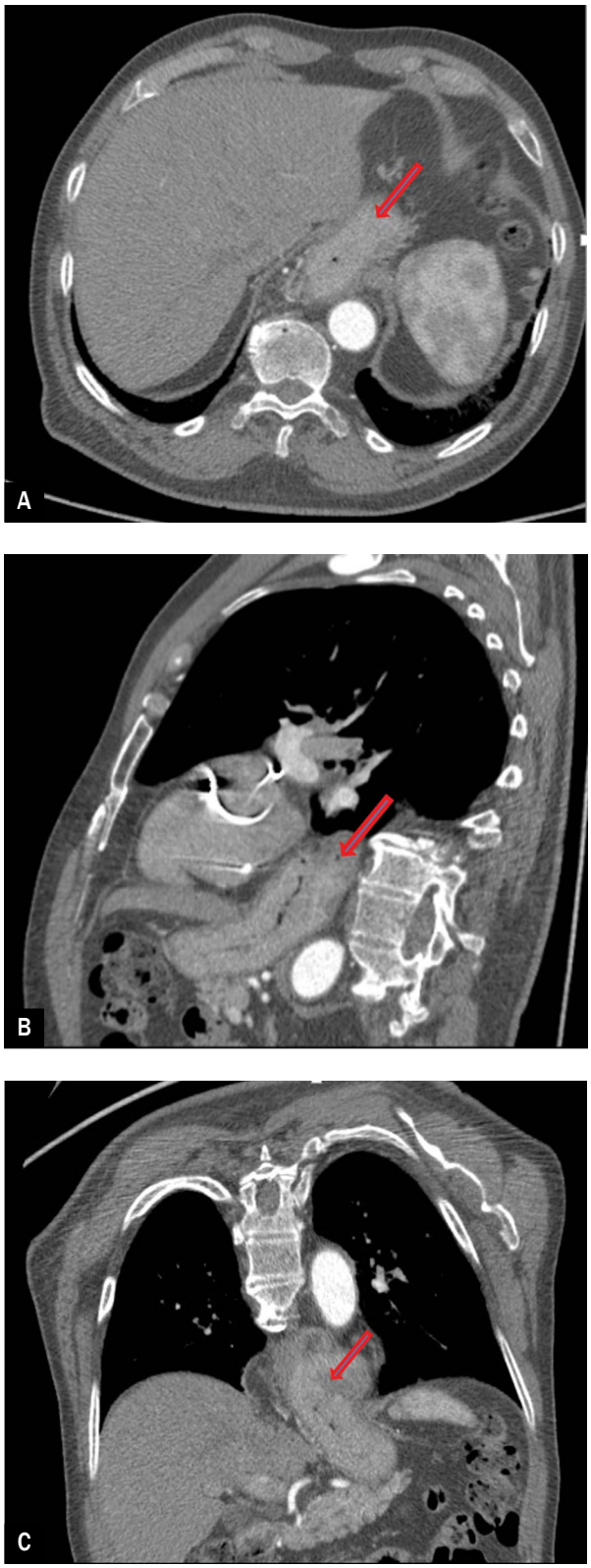

Figure 2. Chest computed tomography — diaphragmatic hiatal hernia marked with an arrow: **A.** Transverse section (cross-section); **B.** Sagittal section; **C.** Coronal section

[8]. Orthopnoea predominated in the patient in question [4]. He also suffered from occasional coughing. The aforementioned symptoms suggested heart failure.

The diagnosis of cardiac tumours is usually based on echocardiographic findings and CT or magnetic resonance imaging (MRI) scans [2]. Echocardiography can determine the location, extent, morphology and possible hemodynamic abnormalities. CT and MRI provide a complete assessment of tumour location and progression. They also better visualise the pericardium and large vessels. The MRI assesses myocardial infiltration, enables differentiation of the neoplasm from the thrombus, and sometimes makes it possible to indicate a histological type of the tumour [9]. It is advisable to seek a diagnosis as soon as possible and implement appropriate treatment to avoid the progression of symptoms and complications. Even benign lesions such as myxoma may cause severe symptoms due to their location and their relationship to the mitral valve. They may also cause severe complications (including death) such as peripheral embolism. Surgical treatment is the treatment of choice in patients with cardiac tumours, provided that the tumour is not a manifestation of advanced cancer. Out of the nineteen patients hospitalised in the Department of Cardiac Surgery in the period 2008–2014 and operated on for the cardiac tumour, three patients died in the early postoperative period, while sixteen patients were discharged home and survived the 2.5-year follow-up period. The long-term prognosis in patients operated on for the cardiac tumour is favourable [9].

In the patient in question, his symptoms were indicative of heart failure. The performed echocardiography raised the suspicion of the cardiac tumour, however, such diagnosis needed to be verified by an additional imaging test. A cardiac cause of the complaints was ruled out on a CT scan.

Summary

In the patient in question, GI disease was manifested by cardiac symptoms, and the echocardiographic picture suggested a cardiac tumour. Expanded diagnostic testing led to a formal diagnosis and management.

Conflict of interest

The authors declare no conflict of interest.

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