A rare case of left ventricular cardiac myxoma with obstruction of the left ventricular outflow tract and atypical involvement of the mitral valve

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Cardiac myxomas originating from the left ventricular free wall are extremely rare. A 32-year-old Swiss male was found to have a 5 \times 3 \times 3 cm myxoma originating from the left ventricular free wall using transthoracic echocardiography. The tumour was successfully treated by surgical excision but the mitral valve could not be preserved because of an atypical interference of the myxoma with the subvalvular apparatus.

**KEYWORDS**
Myxoma; Ventricular outflow obstruction; Heart neoplasms; Mitral valve; Heart ventricles; Arrhythmias; Cardiac

Case report

A 32-year-old man suffering from sudden transient visual loss and frequent palpitations and dizziness since 1 month was seen for cardiac evaluation. On admission, the patient appeared well nourished. Before the actual event, he felt completely healthy, only noticing a 3.3 kg weight loss over this month.

On physical examination, normal heart sounds without any murmur were heard. His blood pressure was 120/75 mmHg and his heart rate was 72 bpm. There was no history of fever and the patient negated night sweats. No signs of right or left ventricular failure were found. Initial laboratory examination showed normal findings except an elevated C-reactive protein of 66.2 mg/L and an elevated erythrocyte sedimentation rate of 45 mm/h, but a few days before admission the patient suffered from a common cold. The electrocardiogram was normal. In the Holter-electrocardiogram, a normal sinus rhythm with supraventricular premature beats and few very short supraventricular tachycardias with frequencies up to 288 bpm were documented. The stress electrocardiogram had to be stopped after 2 min at a level of 50 W because of dropping blood pressure. Transthoracic echocardiogram showed a left ventricular mass. For further anatomical evaluation, transesophageal echocardiography was performed. The tumour was 1.7 cm \times 3.1 cm large and pedunculated and quite mobile. It partially obstructed the left ventricular outflow tract. Furthermore, there was a complex interference with the subvalvular apparatus (Figures 1 and 2).

For exclusion of any other primary tumour, a computer tomography of the chest, the abdomen, and the pelvis was done, which showed no further abnormalities. A magnetic resonance study of the head was without any pathologic finding.

The tumour was treated surgically. The cardiac surgeon did choose a transmitral procedure under cardioplegic protection using cardiopulmonary bypass. Because of the localization and the insertion of the tumour, the mitral valve and its chordae tendineae could not be preserved. A mechanic valve prosthesis was implanted.

Histologic examination demonstrated a myxoma with a maximal diameter of 4 cm.

The patient had an uneventful post-operative course apart from a complete transient atrioventricular block which disappeared spontaneously after several days. The first echocardiographic follow-up 6 months later was without any hint for a recurrence.
Discussion

Primary cardiac tumours are extremely rare. In autopsy series, the incidence of primary cardiac tumours is between 0.0017% and 0.19%. Nearly 75% of them are benign and most of the benign heart tumours are myxomas. About 75% originate from the left atrium. Between 15% and 20% are located in the right atrium. Only 3–4% are found in the left ventricle and 3–4% in the right ventricle. Between 1957 and 1997, only 47 cases of left ventricular myxomas were reported. Reviewing the literature since that period, ~40 more cases could be added.

The clinical manifestation depends upon the anatomic location of the cardiac tumour. Ventricular tumours may present with arrhythmias or conduction defects. Cases of ventricular myxomas with arrhythmias were rarely reported, and only one case of left ventricular myxoma with documented arrhythmia is known from the literature. Our patient had supraventricular tachycardias, maybe due to a dynamic mitral valve insufficiency. At rest, only mild mitral valve regurgitation was apparent.

Some cases of myxomas present with systemic symptoms like fever, night sweats, weight loss, and symptoms of connective tissue disease. Our patient lost 3.3 kg of weight in 1 month.

Systemic embolization is another known possible complication of left ventricular tumours and is seen in up to 50% of the cases. In our case, we had no hint for any systemic embolization except the sudden transient visual loss, but emboli were excluded by magnet resonance tomography. Therefore, the transient visual loss was probably a result of a partial, intermittent obstruction of the left ventricular outflow tract (Figure 3).
Some cases of ventricular myxomas with left ventricular outflow tract obstruction are known. Furthermore, it is known that syncope is a possible symptom of a left ventricular tumour. In other cases, left ventricular failure was reported. Our case is one of the very rare cases of left ventricular myxomas with obstruction of the outflow tract with most of the typical symptoms of a left ventricular tumour as shown above and atypical involvement of the subvalvular apparatus of the mitral valve.

Conflict of interest: none declared.

References