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Left Ventricular Myxoma

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Abstract: Myxoma is the most common benign cardiac tumor, most often localized in the left atrium. Echocardiography is the first-line examination for its diagnosis, and its morphological and anatomical features make it easily recognizable. However, there have been intriguing cases, making clinical suspicion more difficult, leading to further cardiac imaging investigations to confirm the diagnosis, especially if it is in an unusual location such as the left ventricle. The aim of this review is to demonstrate the importance of knowing the characteristic echocardiographic appearance of myxoma in order to guide the diagnostic strategy.

Keywords: myxoma, echocardiographic features, echocardiography, cardiac imaging, left ventricle.

Introduction

Left ventricular (LV) myxoma is a rare benign tumor, in contrast to the more common left atrial myxoma. It is generally responsible for systemic embolic complications. However, in rare cases, this tumor may remain asymptomatic and be discovered by chance during echocardiography [1, 2]. More powerful imaging techniques (transesophageal echocardiography, cardiac CT and MRI, etc.) can be used to solve the diagnostic problem. But before consuming these expensive and sometimes difficult-to-access imaging resources, a good knowledge of the main "echographic pitfalls" and the clinical context of each patient is often sufficient [3].

Observation

Patient M. M, 19 years old, without any particular antecedents, she consulted a liberal cardiologist for a precordialgia, the clinical examination was normal, her electrocardiogram was without abnormalities, her transthoracic echocardiography (TTE) showed a suspicious intraventricular mass. The cardiologist requested a cardiac MRI for better tissue analysis (Figure 1), the results indicated a malignant sarcoma. The patient was subsequently referred to the cardiology department of CHU Benimessous for further treatment. After the physical examination, we performed an echocardiogram, which revealed criteria in favor of a benign, localized, well-contained mass presenting as a pedicle, with focal spots of necrosis at its core, suggesting a LV myxoma (Figures 2-3). Moreover, there was no locoregional extension, notably pericardial effusion (which is common in malignant tumors), and his general condition was preserved, as opposed to malignant tumors, in which there is an alteration in general condition (weight loss, anorexia, sometimes fever...), as well as paraneoplastic syndrome. Faced with this perplexed situation, we thought, is it a benign or malignant mass? Because the result determines the type of treatment, either a simple surgical cure in the case of myxoma, or chemotherapy +/- surgery in the case of a malignant tumor. A PET Scan was carried out, confirming myxoma (Figure 4). The patient underwent surgery, and the anatomopathology results confirmed the diagnosis. The patient subsequently progressed well.

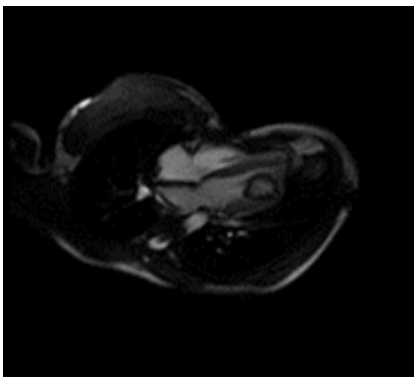

Figure 1: 04-chamber MRI image shows the nature and insertion of the mass in the LV.

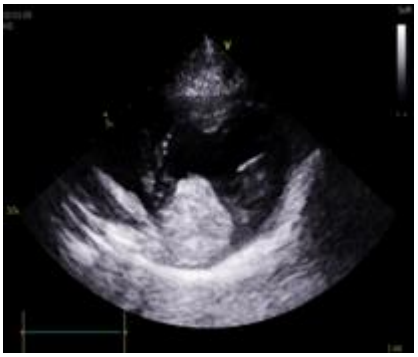

Figure 2: Short-axis TTE section showing the location of Tm in the inferior wall of the LV.

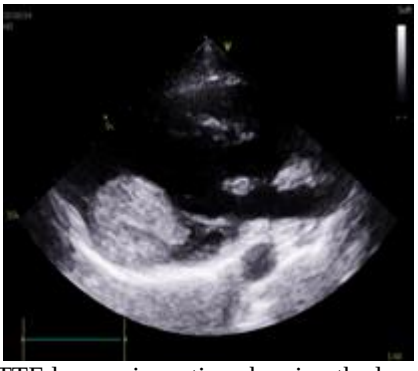

Figure 3: TTE long-axis section showing the location of Tm in the inferolateral wall of the LV.

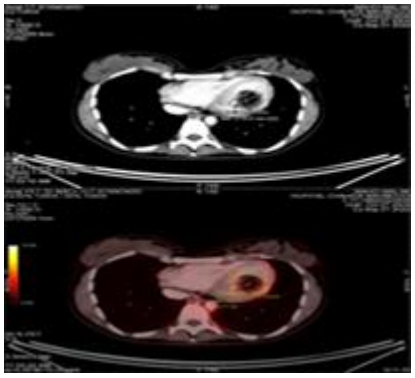

Figure 4: PET Scan of patient's GFR, determines characteristics and location of LV myxoma.

Discussion

Cardiac myxomas are the most frequent benign form of cardiopericardial tumors. The myxoma is often located in the left atrium in 75-90% of cases, and in 15-20% of cases in the right atrium. Ventricular localization is the rarest, accounting for 2% of myxomas [2, 4, 5]. Multicavitary localization, particularly biatrial, is possible [6]. This tumor is common in young people, 70% of whom are under 33 years of age. It is more common in women than in men, with a sex ratio of 3 :1 [2]. 19 years is our patient's age). The symptoms are often polymorphous and non-specific, with embolic accidents revealing the myxoma in 30 to 40% of cases, and chance discoveries in asymptomatic forms [2, 4, 5]. Positive diagnosis of myxoma relies essentially on transthoracic echocardiography, the main test with a sensitivity of 93.3% and specificity of 96.8% [7]. Transoesophageal echocardiography (TEE) offers a better analysis of the tumor's base of implantation, its relationship with the mitral valve, and a precise morphological study of the cardiac cavities [8].

Diagnosis of cardiac tumors in general, and left ventricular myxoma in particular, is made easy by echocardiography, especially as its typical presentation is a gelatinous, homogeneous, well-circumscribed mass a few centimeters in diameter, inserted by means of a pedicle and moving to and fro [2, 3]. The multiplanar assessment of anatomy, tissue composition and functional impact offered by cardiac MRI enables precise confirmation of mass size, localization and estimation of extent of involvement, assessment of tumor functional impact, and tissue characterization. A heterogeneous appearance on T1- and T2-weighted images, occasionally hemorrhagic, calcified and with frequent necrotic sites, the late enhancement is normally patchy in nature [2, 3, 4]. In addition to this suggestive presentation of myxoma, less typical aspects may be encountered, and the differential diagnosis with a malignant tumor or thrombus is difficult (as in our patient's case). This is why 18 F-FDG PET Scan be of considerable value in the diagnostic algorithm and in determining the malignant or benign nature of the tumour preoperatively. The diagnostic value in these situations can be as high as 100% [9]. The only treatment for myxoma is surgical removal. This must be performed by a highly qualified cardiac surgeon, as incomplete removal can lead to tumor recurrence. Complete surgical resection confers a better clinical outcome, with virtually zero perioperative mortality [2, 4, 5]. When a patient is diagnosed with myxoma, anatomopathological study confirms the definitive diagnosis.

Conclusion

LV myxoma remains rare, and is easily diagnosed by echocardiography. However, any image that remains suspicious must be carefully interpreted according to the clinical context that prompted the echocardiographic examination. Mastery of the potential pitfalls of the ultrasound technique enables us to optimize the examinations performed, guaranteeing more accurate and reliable results, and avoiding the use of other investigations that are expensive or unavailable. The quality of ultrasound examinations depends not only on the skill and experience of the operator, but also on the performance of the ultrasound machine used.

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