Real-time three-dimensional echocardiographic: Assessment in left atrial myxoma

Clinical Case Portal

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Introduction

Left atrial myxoma is the most common primary cardiac tumor (1). It maybe occasionally found on routine examinations of asymptomatic patients. Echocardiography is the technique of choice for detecting and assessing prognosis of cardiac masses, whetheher they are thrombi, vegetations, or tumors. 2D echocardiography is limited to planar imaging which provides representative measures for symmetric structures, but not for asymmetric masses.

Real-time three-dimensional echocardiography (RT3DE) is a new technique capablke to acquire a pyramidal volume of information. This volume can then be rotated and cropped to focus on any region of interest contained in the volume (2-3).

Only few cases of 3-dimensional echocardiographic imaging of left atrial myxomas can be found in the literature (4-5). We report the case of a patient with left atrial myxoma, in whom 3-dimensional echocardiography was useful for detailing the anatomical features of the tumor.

Case Report

A 42-year-old woman, with no history of cardiovascular disease, was admitted at a community hospital for suspected ischemic stroke. Systemic thrombolysis was started. The day after, a transthoracic echocardiogram showed a large mass in the left atrium prolapsing into ventricle during diastole. The patient was transferred to our Institution for surgical treatment The transthoracic echocardiogram confirmed the presence of an hyperechogenic mass probably attached to the interatrial septum and prolapsing into the left ventricle during diastole(Fig 1, 2). The peduncle was not visualized. With RT3D echocardiogram the size and morphological characteristics of the mass were detailed. In addition, small pedicle was detected originating from the interatrial septum (Fig 3,4,5,6,7,8). These images were enough to submit the case to cardiac surgery. The day after the patient was operated and the operative findings confirmed the information provided by RT3DE.

Conclusion

In the reported case, the 3-dimensional reconstruction of the tumor and surrounding structures allowed a better anatomical characterization of the mass and identification of the pedicle attached to the interatrial septum.

In current clinical practice, the 3-dimensional echocardiographic technique proved to be useful for the anatomical identification of structural heart diseases. These findings suggest that RT3DE may be the technique of choice for the non invasive evaluation of intracardiac mass.

References

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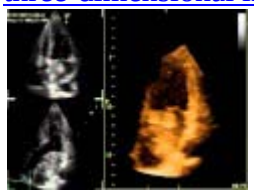
Video 1 :
two-dimensional image projection apical 2 chambers

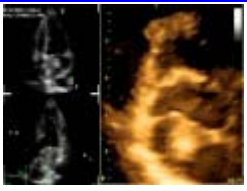
Video 2 :
two-dimensional image projection long axis

Video 3 :
three-dimensional image of the tumor to view the septum



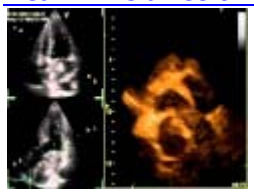
Video 4 :
three-dimensional image of the tumor view from the mitral valve

Video 5 :
Real time three dimensional image: view from the mitral valve



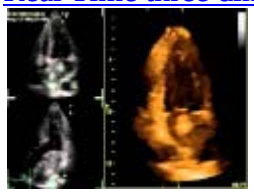
Video 6 :

Real Time three dimensional: the tumor does not involve the mitral valve



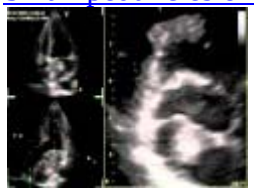
Video 7 :

Real Time three dimensional echo: small peduncles on interatrial septum



Video 8 :

Small peduncles on interatrial septum



Video 9 :

Real time three dimensional: a 9 slide model