Calcific left atrium: A rare consequence of endocarditis

Giuseppe Dattilo, Carmelo Anfuso, Matteo Casale, Vincenza Giugno, Lorenzo Camarda, Natascia Laganà, Gianluca Di Bella

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INTRODUCTION
Calcification can be observed in many cardiac localizations but is particularly rare as a lesion that involves the aortic valve, atrioventricular plane and left atrium.

CASE REPORT
We report a case of a 43-year-old patient with no history...
of heart disease who underwent cardiac evaluation for mild dyspnoea. On physical examination he showed only a mild aortic systolic murmur. Blood pressure (130/65 mmHg) and electrocardiogram were normal. The echocardiogram showed an increase of left ventricular (LV) outflow aortic velocity (max velocity 2.2 m/s) due to calcific aortic valve and a hyper-echogenic lesion located in the atrio-ventricular plane. The patient was submitted to cardiac magnetic resonance (CMR) and to computed tomography imaging to better characterize the localization of mass.

CMR by steady-state free precession sequence showed normal atrial and ventricular dimensions; furthermore hypointense areas located in the left atrium and atrio-ventricular plane (Figure 1, red arrows on panel A-D) with a partial obstruction of superior pulmonary vein (Figure 1, on panel B) were found. A gradient echo T1-weighted image after 10 min of injection of contrast media (delayed contrast enhancement technique) showed a hypointense area in left atrial (LA) suggesting calcium.

Axial images by cardiac computed tomography showed the presence of a mass suggestive of calcium in LA (Figure 1, red arrows on panel E-F), atrioventricular groove and aortic LV outflow (white arrows on panel E-F).

The patient was followed for 12 mo both clinically and by electrocardiogram and echocardiography without worsening of clinical, electrocardiographic and echocardiographic data.

DISCUSSION
Calcification can be observed in many cardiac localizations\textsuperscript{[1-7]}, particularly, they can be located: (1) valves (usually aortic and mitral valve); (2) atrio-ventricular plane; (3) mitral annulus (usually located in mitral posterior annulus as consequence of a degenerative disorders in the elderly,
ostoporosis women, kidney disease); (4) epicardial coronaries; (5) cardiac masses (caseous calcification of the posterior mitral annulus, soft tissue calcified sarcomas, calcified echinococcous cysts, cardiac osteocondromas and cardiac calcified amorphous tumors); and (6) in pericardium (usually causing constrictive pericarditis).

The calcifications of atrial walls are unusual findings that can be identified only using imaging with high spatial resolution, such as cardiac magnetic resonance and computed tomography. Cardiac magnetic resonance imaging and computed tomography, having a high spatial resolution and tissue characterization, are ideal methods for identifying and following over time patients with unusual localization of calcific degeneration in the heart. This case report represents a very rare manifestation of extended endocarditis. Although we haven’t data to support a definite and clear diagnosis, the clinical features and location of the calcified lesion suggest an infective aetiology causing an endocarditis involving the aortic valve, atrio-ventricular plane and left atrium.

**COMMENTS**

**Case characteristics**

A 43-year-old patient with no history of heart disease who underwent cardiac evaluation for mild dyspnoea.

**Clinical diagnosis**

At physical examination there was only a mild aortic systolic murmur.

**Imaging diagnosis**

Cardiac magnetic resonance (CMR) by steady-state free precession sequence showed hypointense areas located in the left atrium and atrio-ventricular plane with a partial obstruction of the superior pulmonary vein and the delayed contrast enhancement technique showed a hypointense area in left atrial (LA) suggesting the presence of calcium. Axial images by cardiac computed tomography showed the presence of a mass suggestive of calcium in LA, atrio-ventricular groove and aortic left ventricular outflow.

**Related reports**

Endocarditis is a serious condition that can endanger patient life, showing itself in different ways.

**Term explanation**

CMR delayed contrast enhancement technique is based on the use of gradient echo T1-weighted images 10 min after the injection of contrast medium and it is very useful to evaluate the tissue characteristics, particularly in an organ in constant motion like the heart.

**Experiences and lessons**

This case report not only represents one of the largest extensions of endocarditis described but also shows a lack of correlation between clinical manifestation and clinical symptoms.

**Peer review**

The report is interesting, and it is an excellent work.

**REFERENCES**

1. Funada A, Kanzaki H, Kanzaki S, Takahama H, Amaki M, Hasegawa T, Yamada N, Kitakaze M. Coconut left atrium. *Int J Cardiol* 2012; 154: e42-e44 [PMID: 21641668 DOI: 10.1016/j.ijcard.2011.05.085]

2. Lee WJ, Son CW, Yoon JC, Jo HS, Son JW, Park KH, Lee SH, Shin DG, Hong GR, Park JS, Kim YJ. Massive left atrial calcification associated with mitral valve replacement. *J Cardiovasc Ultrasound* 2010; 18: 151-153 [PMID: 21253366 DOI: 10.4250/jcu.2010.184.4.151]

3. Müller UM, Gielen S, Schuler GC, Gutberlet M. Endocardial calcification of left atrium, tracheobronchopathia osteoplastica, and calcified aortic arch in a patient with dyspnea. *Circ Heart Fail* 2008; 1: 290-292 [PMID: 19808305 DOI: 10.1161/CIRCHEARTFAILURE.108.799437]

4. Di Bella G, Masci PG, Ganame J, Dymarkowski S, Bogauert J. Images in cardiovascular medicine. Liquefaction necrosis of mitral annulus calcification: detection and characterization with cardiac magnetic resonance imaging. *Circulation* 2008; 117: e292-e294 [PMID: 18362237 DOI: 10.1161/CIRCULATIONAHA.107.729905]

5. Vidal A, Lluberas N, Florio L, Gómez A, Russo D, Agerrody V, Albistur S, Lluberas R. Massive left atrial calcification, tracheobronchopathia osteoplastica and mitral paravalvular leak associated with cardiac rheumatic disease and previous mitral valve replacement. *Int J Cardiol* 2013; 167: e111-e112 [PMID: 23698878 DOI: 10.1016/j.ijcard.2013.04.120]

6. Di Bella G, Gaeta M, Pingitore A, Oretto G, Zito C, Minutoli F, Anfuso C, Dattilo G, Lamari A, Coglitore S, Carerj S. Myocardial deformation in acute myocarditis with normal left ventricular wall motion—a cardiac magnetic resonance and 2-dimensional strain echocardiographic study. *Circ* / 2010; 74: 1205-1213 [PMID: 20453384]

7. Di Bella G, Minutoli F, Zito C, Recupero A, Donato R, Carej S, Coglitore S, Lenti S. Calcified disease of the mitral annulus: a spectrum of an evolving disease. *Ann Cardiol Angeiol* (Paris) 2011; 60: 102-104 [PMID: 21277560]

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