




Available online at
 ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en



IMAGE

Localized constrictive pericarditis causing apical pseudo-ballooning

Péricardite constrictive localisée à l'origine d'une pseudo-ballonisation apicale (pseudo-Tako-Tsubo)

Gianluca Di Bella^a, Michele Gaeta^b,
Salvatore Lentini^{a,*}

^a Clinical and Experimental Department of Medicine and Pharmacology,
University of Messina, Messina, Italy

^b Department of Radiological Sciences, Policlinico 'G. Martino',
University of Messina, Messina, Italy

Received 4 December 2010; received in revised form 24 January 2011; accepted 3 February 2011
Available online 25 September 2011

KEYWORDS

Pericardium;
Constrictive
pericarditis;
Imaging;
Magnetic resonance
imaging

MOTS CLÉS

Pericardium ;
Péricardite
constrictive ;
Imagerie ;
Imagerie par
résonance
magnétique

CP may involve only portions of the pericardium. In such cases, the condition is named 'localized CP'. Imaging methodologies play an important role in the diagnosis of this condition.

A 55-year-old man with a history of tuberculosis presented with signs of heart failure.

Chest X-ray showed pericardial calcifications confirmed on computed tomography (Fig. 1). Echocardiography showed pericardial hyperechogenicity at the mid portion of both left and right ventricular walls and left atrium enlargement (Fig. 2). Contractile dilatation of the apex was present. In M-mode tracing of the mitral valve, there was a steep E–F slope, as for rapid early diastolic filling. Pulsed-wave Doppler showed respiratory variation in transmitral flow: increased early diastolic filling during expiration compared with inspiration.

CMR imaging in the four-chamber plane showed a focally thickened pericardium at the level of the middle right and left ventricles, causing localized ventricular constriction (Fig. 3A). In particular, CMR showed an apical right and left ventricular contractile pseudo-ballooning deformation due to the higher intraventricular filling pressure in areas without pericardial constriction (Fig. 3B and C; Supplementary data, Video 1). As usually seen in constriction, real-time cine magnetic resonance on the interventricular septum with deep breath showed abnormal interventricular coupling.

Abbreviations: CMR, cardiac magnetic resonance; CP, constrictive pericarditis.

* Corresponding author. Cardiovascular and Thoracic Department, Policlinico 'G Martino', Università di Messina, Viale Gazzi, 98100 Messina, Italy. Fax: +39 090 2217086.

E-mail address: salvolentini@alice.it (S. Lentini).

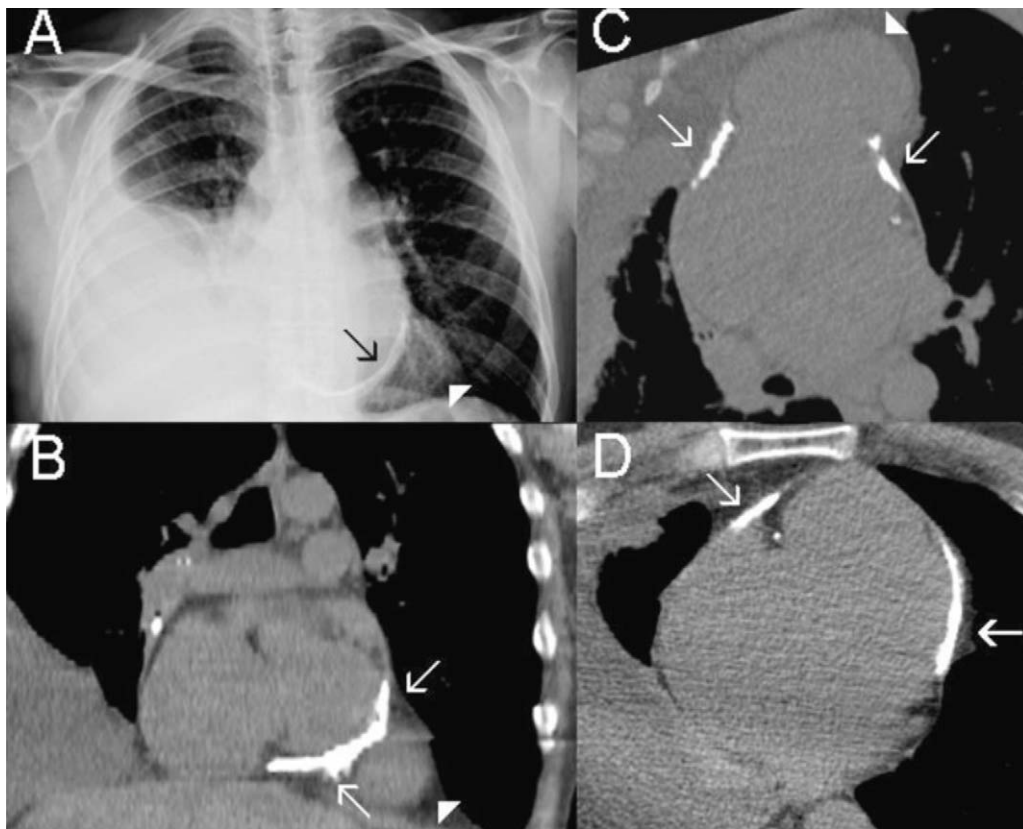


Figure 1. Chest X-ray (A) and computed tomography scans (B, C and D) showing pericardial calcifications (arrows) with spared ventricular apex (arrowed) and large right-side pleural effusion.

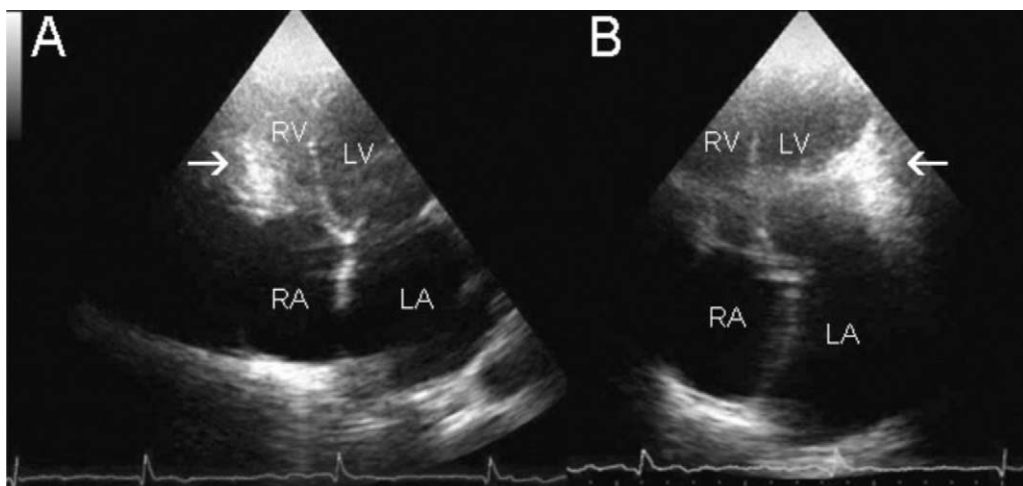


Figure 2. Transthoracic echocardiography: four-chamber view showing pericardial hyperechogenicity (white arrows) at the mid portion of the right (A) and left (B) ventricular walls. RA: right atrium; RV: right ventricle; LA: left atrium; LV: left ventricle.

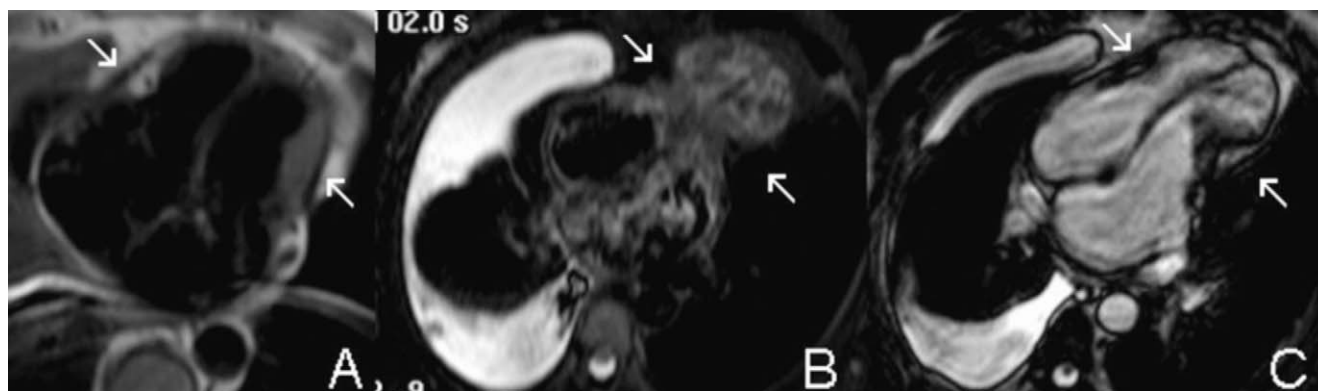


Figure 3. Cardiac magnetic resonance (CMR) imaging in four-chamber view. T1-weighted image (A) shows focally thickened (5 mm) and hypointense (calcified) pericardium at the level of the middle right and left ventricles. T2-weighted image (B) and steady-state free precession cine CMR (C): apical right and left ventricular contractile pseudo-ballooning deformation due to mid-ventricular constriction.

Localized CP encircling only portions of the ventricles should be considered in the differential diagnosis with other conditions. Multimodality imaging may prove useful in non-invasive diagnosis. CMR may show narrowing of the right ventricle with a straightened interventricular septum, dilated inferior vena cava, pleural effusion, hepatomegaly and ascites.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.acvd.2011.02.005](https://doi.org/10.1016/j.acvd.2011.02.005).

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.