Typical features of constrictive pericarditis in a woman admitted for ascites

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A 55-year-old woman was initially admitted to the gastroenterology department of our hospital, with a new onset of ascites and New York Heart Association (NYHA) class II dyspnoea. She had no significant history other than arterial hypertension. In addition to ascites, physical examination revealed lower limb oedema and elevated jugular venous pressure. The abdominal CT showed a normal liver morphology and pericardial calcifications on the upper slices. Circumferential pericardial calcifications were also found on the chest radiography (figure 1A).

Echocardiography revealed signs typically associated with constriction: septal bounce, bivalvular enlargement as well as myocardial adhesions associated with pericardial calcification and thickening with signs of systemic venous congestion (figure 1B, online supplemental video). Whereas restrictive cardiomyopathy (RCMP) is associated with a E′/E ratio at 6.9 called annulus paradoxus and an E/E′ ratio, our patient had a medial E′ at 12.6 cm/s and lateral E′ 12.2 cm/s called annulus reversus and an E/E′ ratio at 6.9 called annulus paradoxus favouring the diagnosis of pericardial constriction.

Cardiac catheterisation confirmed the constrictive pattern by showing an equalisation of the right and left ventricle end-diastolic pressures with a ‘dip-and-plateau’ morphology (figure 1C) and a simultaneous inspiratory increase of right ventricle pressures and decrease of left ventricle and aortic pressures. RCMP usually shows a more than 5 mm Hg difference in end-diastolic pressures that can be unmasked by a filling test or a ventricular extrasystolic beat. As shown in figure 1C, the difference remained inferior to 5 mm Hg even after an extrasystolic beat. A filling test was not performed as right atrial pressure was elevated at 18 mm Hg.

The review of the medical file highlighted the presence of these calcifications on a chest radiography taken 5 years earlier. The whole aetiological assessment was negative. A diagnosis of idiopathic constrictive pericarditis was made. A diuretic treatment was started before a definitive treatment by pericardiectomy (figure 1D, white arrow showing parietal pericardium, black arrow showing visceral pericardium). The anatomopathology only showed diffuse calcification of the pericardium. The postoperative course was favourable with a clinical functional improvement. The postoperative echocardiography showed a resolution of the septal bounce.

This case highlights an atypical clinical presentation of a constrictive pericarditis, whose diagnosis was suspected by echocardiography and confirmed by cardiac catheterisation. Both procedures showed the typical features with well-documented images. Physicians should be vigilant to any unusual clinical presentation that may be misleading.

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Figure 1 (A) Lateral chest radiography showing pericardial calcification. (B) Echocardiography showing septal bounce. (C) Cardiac catheterisation showing the dip-and-plateau pattern particularly noticeable after the premature complex. (D) Periprocedural imaging; white arrow showing parietal pericardium and black arrow showing visceral pericardium.