

Clinical Image

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Phenomenon of Pericardial Sluice Gates



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Introduction

A 70-year-old male with arterial hypertension presented to the emergency department with a 3-week history of chest pain. An urgent echocardiography revealed a severe pericardial effusion with cardiac tamponade. Emergent pericardiocentesis is performed obtaining a hematic fluid. Both cardiac rupture and ascending aortic dissection were discarded by contrast echocardiography and thoracic aorta angiography respectively. Biochemical analysis showed a hematic fluid with normal microbiological results. Cytology analysis of the pericardial fluid presented abundant cellularity constituted by reactive mesothelium (exuberant mesothelium) and moderate acute infiltrate. CEA and CA 15.3 were high, with negative virus serology

and normal autoimmunity tests. There was no evidence of tumor pathology in thoracoabdominal CT. The patient progressed favorably, but after drainage removal, a new pericardial effusion was observed, with a maximum of 21mm located at the wall of the right ventricle with abundant fibrin tracts linking some parietal and visceral pericardium points (Figure 1) (Panel A). Both pulsed (Panel C) and color doppler echocardiography revealed a striking intrapericardial flow at the level of the fibrin tracts simulating a possible cardiac rupture that was discarded by a new contrast echocardiography (Panel B), and probably related to the pressure differential generated on both sides of the fibrin tract by the transmission of the cardiac chambers (that we have named phenomenon of pericardial sluice gates or pseudo-valve).

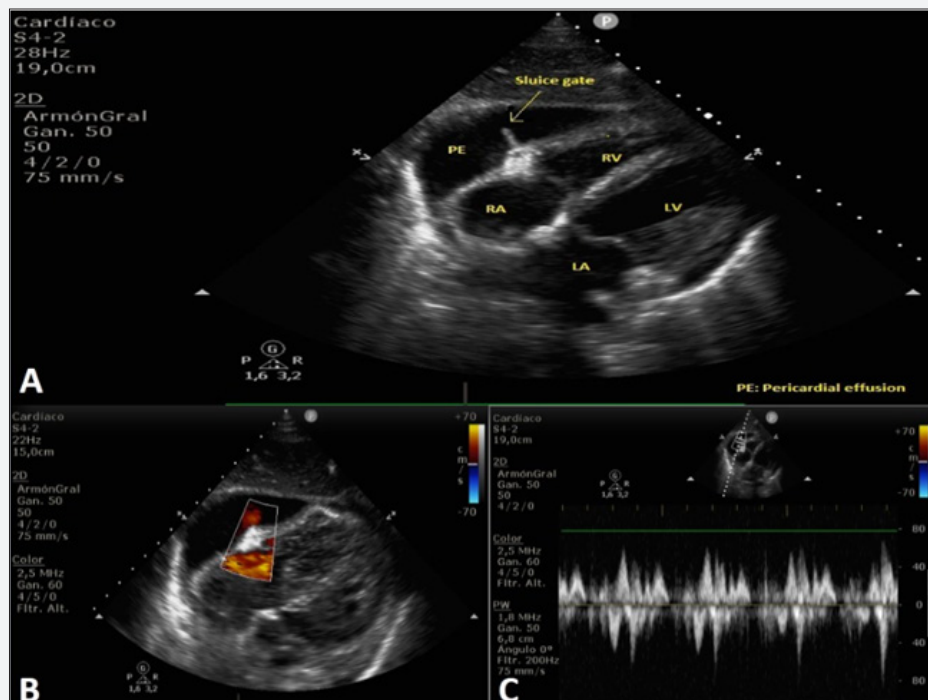


Figure 1: Panel A: 2D echocardiography with pericardial effusion and fibrin tracts.
 Panel B: Color doppler echocardiography, with contrast, that shows intrapericardial flow.
 Panel C: Pulsed doppler echocardiography at intrapericardial flow level.



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