

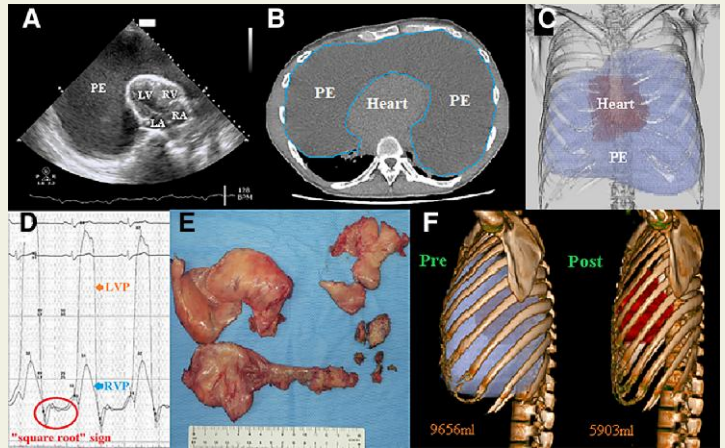
Constrictive pericarditis with massive pericardial effusion

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A 27-year-old man was admitted to our hospital for the investigation of pericardial effusion (PE) and ascites. Despite the accumulation of excessive pericardial fluid, vital signs of cardiac tamponade were not observed. He had no prior medical history except for a blunt chest trauma 10 years earlier. Echocardiography showed a tiny heart in extraordinarily retained massive PE (panel A, [Supplementary data online, Video S1](#)). Computed tomography (CT) revealed a distended overfilling pericardial cavity that remarkably compressed his heart and lung (panels B and C). Magnetic resonance imaging showed a thickened pericardium and a respiratory septal bounce phenomenon (see [Supplementary data online, Video S2](#)). Heart catheterization followed by a pericardial drainage of gigantic 6500 mL amount of exudative fluid suggested constrictive property of diastolic square root sign in left and right ventricular simultaneous pressure tracings (panel D). He was diagnosed with effusive–constrictive pericarditis. Despite the removal of pericardial fluid and the treatment with anti-inflammatory medications, the underlying pericardial constricted property continued to cause symptoms. He underwent a surgical removal of the thickened pericardium uneventfully (panel E). Further analysis of the volume of the thoracic cavity utilizing a comprehensive 3D-rendered CT revealed a significantly greater pre-operative volume of 9569 mL compared with the post-operative volume of 5903 mL (panel F, [Supplementary data online, Video S3](#)). This is the first report to suggest that the compensative and elastic ability of both the thoracic and pericardial cavities plays a role in protecting hemodynamics in effusive–constrictive pericarditis.



[Supplementary](#) data is available at *European Heart Journal* online.

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