



Echocardiography of a Restrained Heart: Look Closely at the Septum!

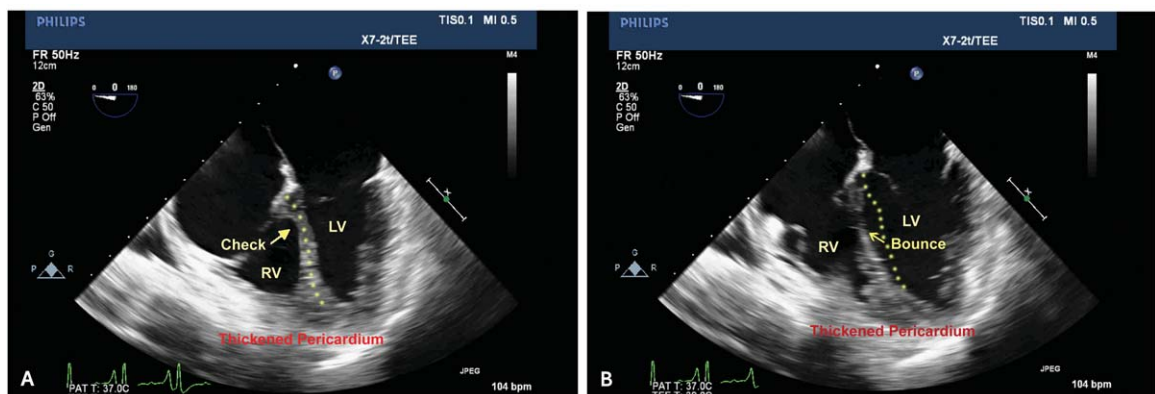
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Two-dimensional transoesophageal echocardiography (TEE) (performed with an X7-2t ultrasound probe and machine (iE33 model; Philips, Bothell, WA, USA)) in a patient presenting to the emergency department in circulatory shock with a past history of tuberculosis. Albeit the echocardiographic demonstration of conspicuously thickened pericardium suggesting chronic constrictive pericarditis, TEE depicted classical interventricular septum (IVS) signs, often less well understood. Normally, IVS maintains concavity on the left ventricle (LV) side throughout the cardiac cycle and demonstrates an outward motion towards right ventricle (RV) during diastole. However, a non-compliant pericardium exerts an accentuated restraining force on the cardiac chambers, leading to an exaggerated ventricular-interdependence that results in paradoxical septal motion initially directed towards followed by motion away from the LV in early diastolic phase.¹ This is appreciated as a diastolic cycle of IVS ‘checks’ (a) and ‘bounces’ (b) as elucidated in the image. Moreover, the differential ventricular filling pattern reflects as a phenomenon of abrupt cessation of diastolic ventricular filling exhibiting a ‘shuddering-septum’. The illustrated signs are accentuated with deep inspiration and pulmonary hypertension, RV pacing, massive pulmonary-embolism and left-bundle-branch-block constitute the close differentials.² The case highlights the role of focussed cardiac ultrasound in the early diagnosis of the cause of acute haemodynamic instability.³



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