A 33-year-old woman with a history of multiple aortic valve replacements for infective endocarditis was referred to our institution for presumed vegetations of her aortic prosthesis and aortic root abscess. Transthoracic echocardiography performed shortly after her arrival showed a large pseudo-aneurysm and a mobile echodensity (arrow) at the aortic annulus with regurgitant flow filling the entire left ventricular outflow tract (LVOT) in diastole (Panels A and B, Supplementary data online, Movies S1 and S2). The continuous wave Doppler signal at the LVOT showed a short pressure half-time of 125 ms (Panel O). These findings mimicked a destroyed aortic prosthesis with severe regurgitation. However, the low peak velocity (2.2 m/s) of the regurgitant jet and normal mitral valve opening demonstrated by M-mode imaging (Panel D) argued against severe aortic regurgitation. The colour jet was in fact regurgitation from the pseudo-aneurysm into the aortic root (Rochester, MN, USA). These findings mimicked a destroyed aortic prosthesis with severe regurgitation. However, the low peak velocity (2.2 m/s) of the regurgitant jet and normal mitral valve opening demonstrated by M-mode imaging (Panel D) argued against severe aortic regurgitation. The colour jet was in fact regurgitation from the pseudo-aneurysm into the aortic root (Rochester, MN, USA). This unique case demonstrates the unusual supra-annular position of a mechanical aortic prosthesis and pseudo-aortic regurgitation due to communication between a pseudo-aneurysm and the aortic root. It also highlights the importance of integrating 2D, Doppler, and M-mode findings for a correct echocardiographic diagnosis, as well as the value of utilizing multimodality imaging in delineating complex cardiac anatomy. Ao, aorta; PsA, pseudo-aneurysm; LA, left atrium; LV, left ventricle; PHT, pressure half-time.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.