Infective endocarditis in a parachute-like asymmetrical mitral valve

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A 21-year-old woman was admitted to our unit with suspected infective endocarditis. Transthoracic and transoesophageal echocardiogram demonstrated vegetation in a parachute-like asymmetrical mitral valve with severe mitral regurgitation. She was completely asymptomatic before this presentation. Though there was no evidence of mitral stenosis, this deformity is associated with transvalvular turbulence, which would account for the increased likelihood of infective endocarditis. She underwent a prosthetic mitral valve replacement with a 21 mm ATS mechanical valve.

KEYWORDS
Infective endocarditis;
Parachute-like asymmetrical mitral valve;
Vegetation;
Parachute mitral valve;
Mitral valve

Case report
A previously fit and healthy, 21-year-old woman with suspected infective endocarditis underwent transthoracic and transoesophageal echocardiogram in our unit. This showed vegetation in the posterior mitral valve leaflet at P2 and P3 scallops with severe mitral regurgitation (Figure 1; Supplementary data, Movie 1). She also had two unequal sized papillary muscles, of which the antero-lateral one was

Figure 1 Transoesophageal echocardiogram showing vegetation in the P2 scallop of the posterior mitral valve leaflet.
dominant (Figure 2; Supplementary data, Movie 2). The chordae were seen to be converging from both leaflets towards this dominant papillary muscle. The postero-medial papillary muscle was seen to be displaced towards the mitral annulus and received no chords. This lead to an eccentric mitral valve orifice, but no stenosis identified. All her other valves were free from vegetation and were functioning normally.

She had a 6-week course of antibiotics (Benzyl penicillin and Gentamicin) and her inflammatory markers improved. She underwent a mitral valve replacement surgery during which the above findings were confirmed, and a prosthetic 29 mm ATS mechanical mitral valve was implanted. The findings of mitral sub-valvular apparatus described earlier were more prominent in the post-operative trans-thoracic echocardiogram. There was also a thickened chord seen all along the left ventricular cavity, connecting to the dominant papillary muscle (Figure 3; Supplementary data, Movie 3). We conclude that these findings were suggestive of parachute-like asymmetrical mitral valve.

Discussion

Parachute-like asymmetrical mitral valve is described as a congenital anomaly with two papillary muscle and focalized attachment of the chordae to the dominant papillary muscle. This is different from the true parachute mitral valve (PMV) in which the primary morphological feature is the unifocal attachment of the chordae to the single available papillary muscle.

Our patient was completely asymptomatic until this presentation, and there was no stenosis of the mitral valve. This suggests a mild variant of this anomaly. However, this deformity is associated with transvalvular turbulence, which would...
account for the increased likelihood of infective endocarditis. To the best of our knowledge, there is no reported case of infective endocarditis in PMV or in parachute-like asymmetrical mitral valve in English literature.

Supplementary data
Supplementary data are available at European Journal of Echocardiography online.

Conflict of interest: none declared.

Reference