Transoesophageal three-dimensional echocardiographic diagnosis of Barlow's disease

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DESCRIPTION

A 67-year-old man with a year history of palpitations and dyspnoea presented to the physician's office. His blood pressure was 140/80 mm Hg and pulse was 80 beats/min. Heart auscultation revealed a loud systolic click followed by a holosystolic murmur. The ECG showed sinus rhythm, P wave $\pm$ in V1 and P wave duration 140 ms in DII. The Holter monitoring showed atrial extrasystoles and an episode of atrial tachycardia (figure 1A).

The transthoracic echocardiogram M-mode showed late systolic sagging of the mitral valve (figure 1B) and the two-dimensional (2D) echocardiogram prolapse of both mitral leaflets in relation to the mitral annular line.

The transoesophageal 2D echocardiogram with colour Doppler showed clearly the prolapsing mitral leaflets with severe mitral regurgitation (figure 1C). The three-dimensional echocardiographic imaging

demonstrated bileaflet prolapse of the mitral valve. The mitral model showed prolapse of the P1, P2, P3 and A1, A2, A3 (figure 1D, E). This model was performed with the software for Mitral Valve Quantification (MVQ), and then it was rotated as the three-dimensional image of the mitral valve to establish a good correlation between them. In our case the size of the annulus of mitral valve and/or the elongation of chordae tendinae emphasise the feature of Barlow's disease. The patient went to mechanical mitral valve replacement and actually is in New York Heart Association functional class I.

Mitral valve prolapse is a common valve disease that was described in the 1960s and is one of the most common causes of mitral regurgitation.¹ Mitral valve prolapse prevalence is 2%–3% in different ethnic groups.² Barlow's disease is a clinically important form of degenerative mitral valve disease that is characterised by unique clinical, echocardiographic and pathological features. However, Barlow's disease is usually diagnosed before the age of 60; our case is uncommon because he is 67 years old and he was asymptomatic until 1 year ago.

Figure 1 (A) The Holter monitoring showed atrial extrasystoles and an episode of atrial tachycardia. (B) M-mode echocardiogram showed late systolic sagging of the mitral valve. (C) Transoesophageal echocardiogram showed clearly the prolapsing mitral leaflets and severe mitral regurgitation. (D,E) Three-dimensional echocardiographic imaging demonstrated bileaflet prolapse. Mitral model showed prolapse of the P1, P2, P3 and A1, A2, A3.

Learning points

- ▶ Transoesophageal echocardiogram especially the three-dimensional technique demonstrates its importance in the diagnosis, characterisation and therapeutic decisions in a patient with mitral valve prolapse.
- ▶ Degenerative aetiology is the most common cause of primary mitral regurgitation.

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Competing interests None declared.

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REFERENCES

- 1 Barlow JB, Bosman CK, style RV. Aneurysmal protrusion of the posterior leaflet of the mitral valve. an auscultatory-electrocardiographic syndrome. *Am Heart J* 1966;71:166–78.
- 2 Theil M, Sleik K, Anand S, et al. Prevalence of mitral valve prolapse in ethnic groups. *Can J Cardiol* 2004;20:511–5.

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