28. Stern MP, Williams K, Hunt KJ. Impact of diabetes/metabolic syndrome in patients with established cardiovascular disease. *Atheroscler Suppl* 2005;**6**:3–6.
29. Hulthe J, Bokemark L, Wikstrand J, Fagerberg B. The metabolic syndrome, LDL particle size, and atherosclerosis: the Atherosclerosis and Insulin Resistance (AIR) study. *Arterioscler Thromb Vasc Biol* 2000;**20**:2140–2147.
30. Matsushita K, Yatsuya H, Tamakoshi K, Wada K, Otsuka R, Takefuji S, Sugiura K, Kondo T, Murohara T, Toyoshima H. Comparison of circulating adiponectin and proinflammatory markers regarding their association with metabolic syndrome in Japanese men. *Arterioscler Thromb Vasc Biol* 2006;**26**:871–876.
31. Reaven G. The metabolic syndrome or the insulin resistance syndrome? Different names, different concepts, and different goals. *Endocrinol Metab Clin North Am* 2004;**33**:283–303.
32. Sakkinen PA, Wahl P, Cushman M, Lewis MR, Tracy RP. Clustering of procoagulation, inflammation, and fibrinolysis variables with metabolic factors in insulin resistance syndrome. *Am J Epidemiol* 2000;**152**:897–907.
33. Weyer C, Funahashi T, Tanaka S, Hotta K, Matsuzawa Y, Pratley RE, Tataranni PA. Hypoadiponectinemia in obesity and type 2 diabetes: close association with insulin resistance and hyperinsulinemia. *J Clin Endocrinol Metab* 2001;**86**:1930–1935.

CLINICAL VIGNETTE

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‘Parachute’ accessory mitral leaflet and pulmonary valve stenosis in an asymptomatic 85-year-old man

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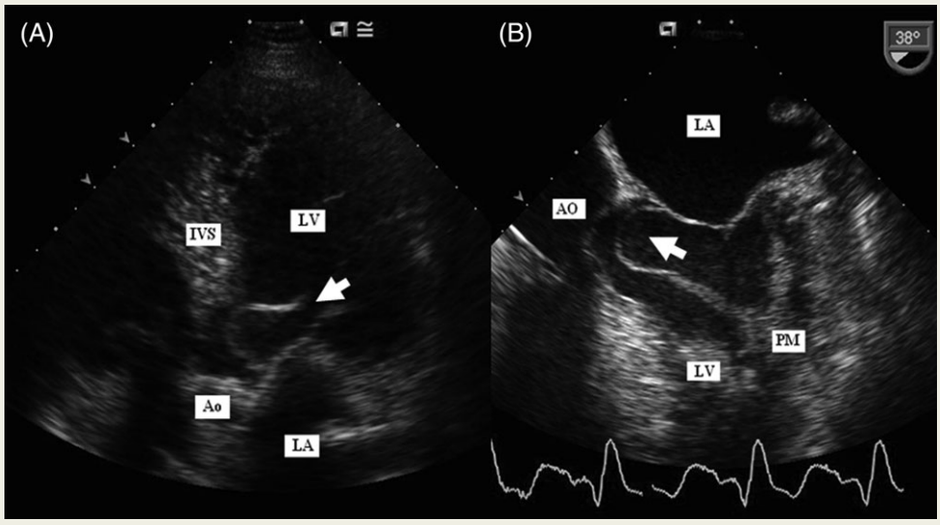

An 85-year-old man underwent transthoracic echocardiography. Anamnesis included hypertension and mild chronic obstructive pulmonary disease. At the age of 18, he had been dispensed from the military service because of a cardiac murmur. Since then, he had not undergone cardiac testing and had been absolutely asymptomatic.

Transthoracic echocardiography showed a moderately dilated, hypertrophic left ventricle with mildly reduced contractile function as well as grade II–III mitral and aortic regurgitation. Within the left ventricular outflow tract, a mobile discrete membrane caused subaortic obstruction with a peak dynamic gradient of 30 mmHg. Transoesophageal echocardiography revealed the membrane to be accessory mitral valve tissue implanted on the anterior mitral annulus and leaflet with a broad systolic (‘parachute’) anterior movement, obstructing a large part of the left ventricular outflow tract. The aortic valve was tricuspid; the cusps, although thickened, showed normal mobility. As a collateral finding, mild right atrial and ventricular enlargement with moderate to severe (peak gradient 50 mmHg) pulmonary valve stenosis were also present. In consideration of the age and of the absence of symptoms, the patient was discharged without further intervention. Accessory mitral valve tissue is an anomaly of the embryologic development of the endocardial cushion. Although very rare, it should always be considered among the possible causes of a subaortic gradient.

Panel A. Transthoracic view of the subaortic membrane attached to the anterior mitral annulus and to chordae tendineae from the anterior papillary muscle. LA, left atrium; LV, left ventricle; Ao, ascending aorta; IVS, interventricular septum; PM, papillary muscle.

Panel B. Transoesophageal view of the subaortic membrane attached to the anterior mitral annulus and to chordae tendineae from the anterior papillary muscle.