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CARDIOVASCULAR FLASHLIGHT

An unusual cause of systolic murmur

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An asymptomatic 46-year-old man was referred to our institution for evaluation of a cardiac murmur discovered in a routine medical checkup. Physical examination showed a harsh systolic murmur IV/VI in the left parasternal edge. An electrocardiogram showed negative T-waves in left precordial leads. Transthoracic echocardiogram showed normal, except for an apical protrusion of 3 × 4 cm (Panel A; see Supplementary material online, Video S1), which appeared to have its own endocardium, myocardium, and pericardium. Acceleration through its narrow neck with a peak gradient of 95 mmHg (Panel B; see Supplementary material online, Video S2) was revealed by colour and continuous Doppler. These findings were confirmed by contrast echo (Panel C; see Supplementary material online, Video S3) and cardiac magnetic resonance cine images (Panels D and E; see Supplementary material online, Video S4A and B). Delayed-enhancement imaging showed intramyocardial fibrosis in the diverticulum (Panels F and G).

These findings were compatible with an isolated muscular left ventricular apical diverticulum. The patient preferred conservative management, and serial follow-up was decided.

Congenital ventricular diverticulum is a rare congenital cardiac defect, which can be muscular or fibrous. The fibrous type is a noncontractile ventricular protrusion. The muscular type is usually located in the apex and may show active contraction as it contains the three cardiac layers. Most of the cases are associated with midline thoracoabdominal defects and other heart malformations and are therefore detected in children. In contrast, patients with an isolated left ventricular diverticulum generally remain asymptomatic. However, due to potential risk of life-threatening complications such as cardiac rupture or ventricular tachycardia, correct attitude in asymptomatic patients remains controversial.

Supplementary material is available at European Heart Journal online.

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