Incidental Diagnosis of Apical Hypertrophic Cardiomyopathy in an 18-Year-Old White Man

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A 18-year-old white man, a non-athlete, presented for follow-up evaluation of an atrial septal aneurysm. The aneurysm had been diagnosed echocardiographically 5 years earlier during investigation of palpitations, which were the patient’s only significant symptom. Results of physical examination, electrocardiography (ECG) (Fig. 1), and 21-day monitoring with a CardioNet MCOT™ (CardioNet, Inc.; Conshohocken, Pa) had been within normal limits at that time. The patient had no family history of sudden cardiac death. At the current presentation, ECG showed deep T-wave inversions, which raised suspicions of apical hypertrophic cardiomyopathy (HCM) (Fig. 2). The echocardiographic appearance confirmed the findings (Fig. 3). Magnetic resonance imaging showed apical HCM, and small areas of delayed enhancement were consistent with apical fibrosis (Figs. 4 and 5). Holter monitoring over 48 hours did not reveal nonsustained ventricular tachycardia. The patient’s palpitations corresponded with sinus rhythm. Results of a treadmill stress test showed good exercise capacity for the patient’s age, with appropriate elevations in blood pressure during exercise. The patient’s parents consented to undergo ECG and echocardiographic evaluation, which yielded no pathologic indications. On the basis of the patient’s low-risk factors, placement of an implantable cardioverter-defibrillator was deferred; however, he was discouraged from participating in competitive sports.

Comment

Apical HCM is an uncommon morphologic variant of HCM in which the hypertrophy of the myocardium predominantly involves the apex of the left ventricle. Apical HCM appears to be particularly common in Asia. In non-Asian HCM patients,
most reports suggest a prevalence of 1% to 3%.\(^1\) Gebker and colleagues\(^2\) demonstrated the interval development of fibrosis in apical HCM over a 2-year span, using late gadolinium enhancement. Of note during those studies, no significant morphologic change was seen on noncontrast magnetic resonance images during wall motion. In another case,\(^3\) nonsustained ventricular tachycardia was the first indication of previously undetected apical HCM. Our patient’s case is remarkable because of the rather rapid interval manifestation of apical HCM (seen on both ECG and echocardiography) in a young white man who had no family history of HCM or sudden cardiac death, and whose initial ECG and echocardiogram had yielded normal results.

References