ECG Diagnosis: Apical Hypertrophic Cardiomyopathy

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Apical hypertrophic cardiomyopathy (HCM) is an atypical phenotype of nonobstructive HCM with an indistinguishable histology. In Japan this apical variant constitutes approximately 25% of patients with HCM, although it is uncommon in other parts of the world, accounting for only 2% of patients with HCM. The electrocardiogram in apical HCM typically shows repolarization changes and giant (>10 mm), inverted T waves in the anterolateral leads (particularly in leads V4 and V5). Transthoracic echocardiography is the initial test of choice in making the diagnosis. Patients with apical HCM can present with chest pain, dyspnea, palpitations, or syncope. Patients with this condition may remain asymptomatic, with the condition detected by chance as a result of an abnormal electrocardiogram. In general, the condition carries a benign prognosis, although complications including ventricular tachycardia, atrial fibrillation, apical myocardial infarction, and apical aneurysm can occur in rare instances.

References

Figure 1. 12-lead ECG from a 52-year-old man following a syncopal episode.
Demonstrates a normal sinus rhythm, with left ventricular hypertrophy and deep, inverted T waves in leads I, II, aVL, and V5-V6 (>10 mm inverted T waves in V3-V6). A transthoracic echocardiography demonstrated evidence of apical hypertrophic cardiomyopathy.