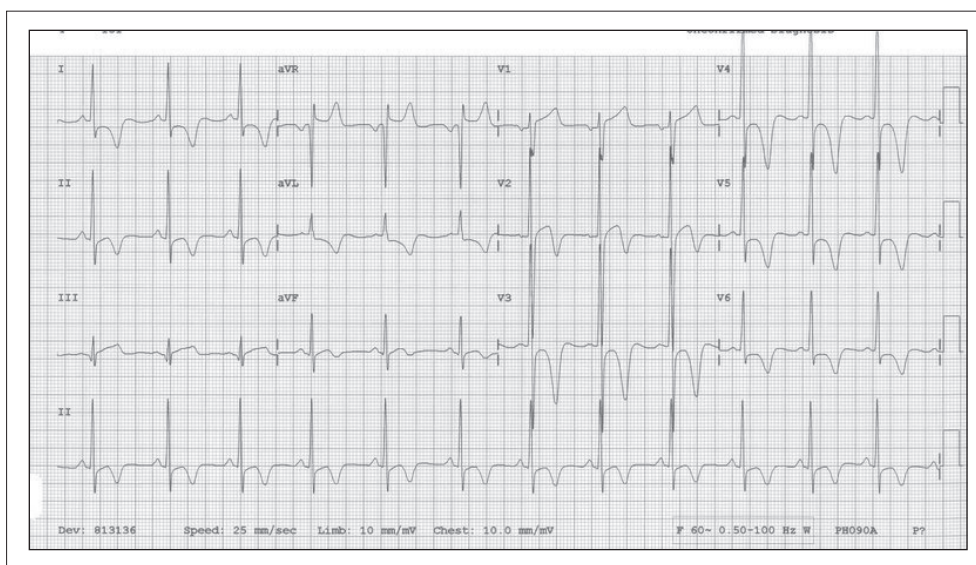


# ECG Diagnosis: Apical Hypertrophic Cardiomyopathy



**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 V<sub>3</sub>-V<sub>6</sub> (> 10 mm inverted T waves in V<sub>3</sub>-V<sub>5</sub>). A transthoracic echocardiography demonstrated evidence of apical hypertrophic cardiomyopathy.

Apical hypertrophic cardiomyopathy (HCM) is an atypical phenotype of nonobstructive HCM with an indistinguishable histology.<sup>1</sup> 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.<sup>1</sup> The electrocardiogram in apical HCM typically shows repolarization changes and giant (>10 mm), inverted T waves in the anterolateral leads (particularly in leads V<sub>4</sub> and V<sub>5</sub>).<sup>2,3</sup> 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.<sup>1</sup> Patients with this condition may remain asymptomatic, with the condition detected by chance as a result of an abnormal electrocardiogram.<sup>3</sup> 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.<sup>1</sup> ♦

## References

1. Bankar RN, Hemadri A, Nasar A, Abson CP. A man with chest pain and interesting electrocardiogram. *The Internet Journal of Internal Medicine* [serial on the Internet] 2007 [cited 2011 Jul 27]; 7(1): [about 4 p]. Available from: [www.ispub.com/journal/the-internet-journal-of-internal-medicine/volume-7-number-1/a-man-with-chest-pain-and-interesting-electrocardiogram.html#sthash.IAcAohyE.dpbs](http://www.ispub.com/journal/the-internet-journal-of-internal-medicine/volume-7-number-1/a-man-with-chest-pain-and-interesting-electrocardiogram.html#sthash.IAcAohyE.dpbs). DOI: <http://dx.doi.org/10.5580/222e>
2. Moon JC, Fisher NG, McKenna WJ, Pennell DJ. Detection of apical hypertrophic cardiomyopathy by cardiovascular magnetic resonance in patients with non-diagnostic echocardiography. *Heart* 2004 Jun;90(6):645-9. DOI: <http://dx.doi.org/10.1136/hrt.2003.014969>
3. Zachariah S, Davis GK. A patient with recurrent syncope. *Postgrad Med J* 2004;80(940):117,120-1. DOI: <http://dx.doi.org/10.1136/pmj.2003.015610q>