

QUIZ

The ECG Quiz: “Zebra!”

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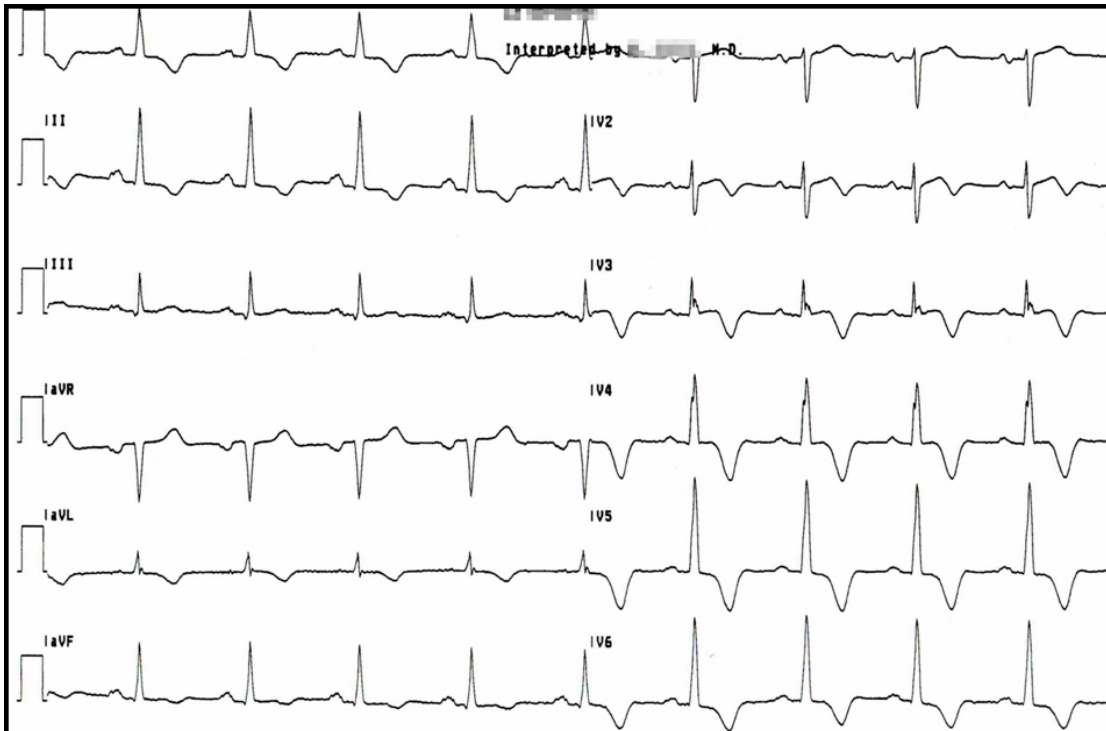
History

A healthy 56-year-old man was referred for an echocardiogram because of an abnormal EKG.

His 12-lead EKG is given below.

Questions

1. What is the most important finding on the EKG?
2. What is the possible pathology?



Answers

1. Deep, symmetrical T wave inversion
2. Apical hypertrophic cardiomyopathy

Discussion

The rhythm is sinus and the QRS complex voltages are increased. The most prominent finding is, however, the repolarization abnormality with the T waves being symmetrically and deeply inverted. This is most marked in the mid to late chest leads (V3-V6) as well as antero-lateral limb leads (I & aVL).

These EKG changes were the reason for referring this patient for an echocardiography. His echocardiogram revealed a localized apical left ventricular hypertrophy and he was diagnosed with "apical hypertrophic

cardiomyopathy." This is a rare form of cardiomyopathy where hypertrophy is limited to the left ventricular apex, which is best represented electrocardiographically by the antero-lateral leads. It is more commonly seen in the Japanese population, and is considered generally benign with no further treatment warranted. The full discussion of this condition is beyond the scope of this short vignette.

This EKG, i.e., very deeply and symmetrically inverted T waves mainly in the antero-lateral leads, is very characteristic of "apical hypertrophic cardiomyopathy", and should raise the suspicion of this diagnosis. However, as this condition is a "zebra", one should always think first of other more common causes of T wave abnormalities, like ischemia and hypertensive heart disease. Remember, the old saying in teaching medical students always holds true: "When you hear hoof beats, think of horses, not zebras!"

Suggested readings

1. Reddy V, Korcarz C, Weinert L, Al-Sadir J, Spencer K, Lang R: Apical Hypertrophic Cardiomyopathy. *Circulation* 1998; 98:2354.
2. Eriksson MJ, Sonnenberg B, Woo A, Rakowski P, Parker T, Wigle D, Rakowski H: Long-Term Outcome in Patients With Apical Hypertrophic Cardiomyopathy. *J Am Coll Cardiol* 2002;39:638–45.