INTERNAL MEDICINE

□ PICTURES IN CLINICAL MEDICINE □

Hypokalemia and the Disappearance of Giant Negative T Waves

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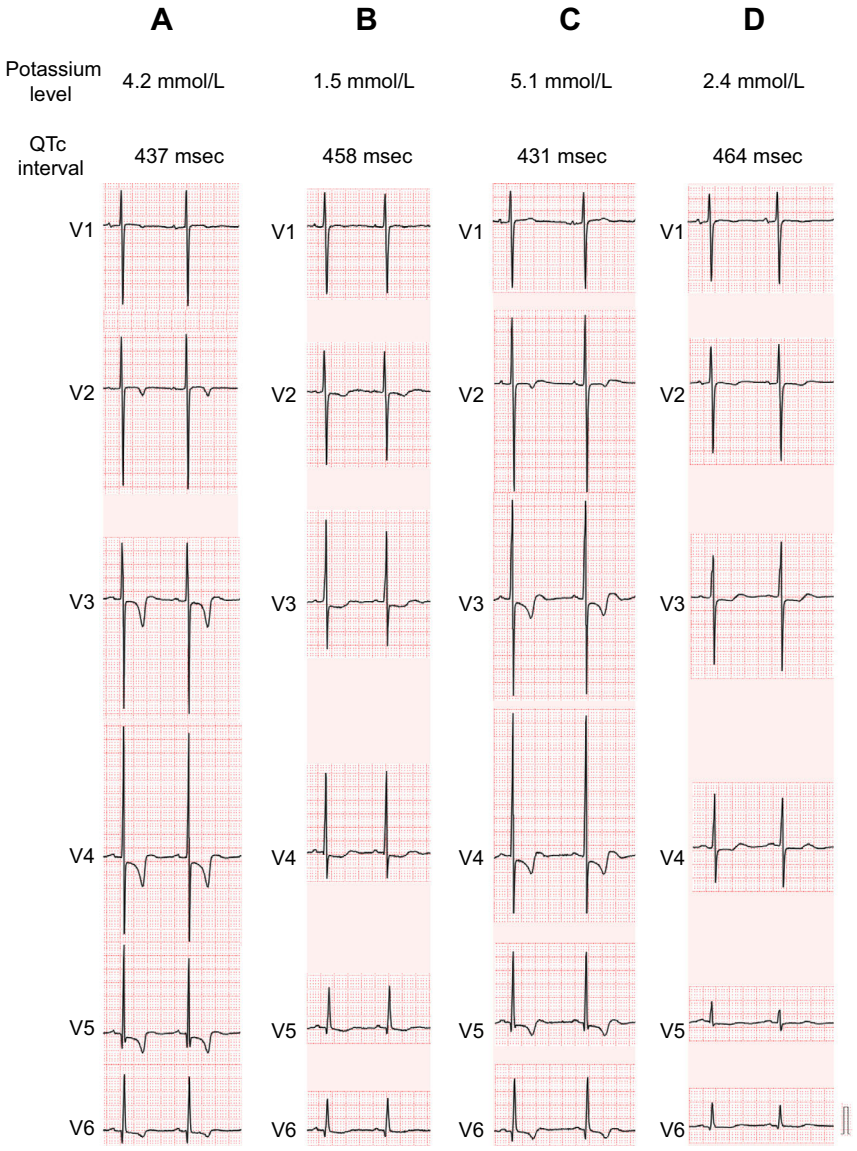

Picture.

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A 76-year-old woman with hypertrophic cardiomyopathy (HCM) was admitted to our hospital for hypokalemia (1.5 mmol/L) due to diarrhea. An electrocardiogram taken 5 months before this admission, when the patient's potassium level was 4.2 mmol/L, showed giant negative T waves (Picture A), whereas they were absent on this admission (Picture B). The potassium imbalance was corrected on the third hospital day. The amplitude of the negative T waves gradually increased, and deep negative T waves reappeared 2 months after the correction of the potassium level (Picture C). Three months after discharge, the patient was readmitted to our hospital with hypokalemia (2.4 mmol/L) due to recurrent diarrhea and again showed an absence of the giant negative T waves (Picture D). Drastic changes in the amplitude of the negative T waves in relation to the serum potassium levels in this case represent a role for serum potassium ions in cardiac repolarization because hypokalemia decreases potassium conductance and may cause flat T waves, even when classical electrocardiogram findings (1) are observed in HCM.

The authors state that they have no Conflict of Interest (COI).

Reference

1. Koga Y, Katoh A, Matsuyama K, et al. Disappearance of giant negative T waves in patients with the Japanese form of apical hypertrophy. J Am Coll Cardiol **26**: 1672-1678, 1995.