Country cardiograms case 60: Answer

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At first glance, this tracing looks like regular wide complex tachycardia, possibly ventricular tachycardia, at a rate of 264 per minute. However, lead I clearly shows narrow QRS complexes, at a rate of 76 per minute, and similar narrow complexes can be seen "marching" through the rest of the tracing (most obviously in leads V2 and V5).

These 2 rhythms cannot coexist, and the important electrocardiographic (ECG) diagnosis to make is therefore pseudoventricular tachycardia. The fact that P waves cannot be reliably identified is trivial in the initial assessment, and an audible sigh of relief may be heard when you confidently state "normal rate, with prominent artefact masquerading as ventricular tachycardia." Go to the bedside, check the patient's pulse and consider the most likely cause for a person's becoming unresponsive and exhibiting such an ECG: seizure.

Pseudoventricular tachycardia is most often caused by movement by the patient or by improperly attached leads.[1–3] The distinction is vital: treating genuine ventricular tachycardia as "artefact" may well be fatal, whereas treating pseudoventricular tachycardia as genuine ventricular tachycardia is hazardous.

Pseudoventricular tachycardia might be considered in a patient unlikely to have structural heart disease, in a patient who remains asymptomatic during such an episode or in a patient with obvious tremor or seizure. However, the presence, as in this case, of the patient's normal rhythm marching through what looks like a fast wide complex rhythm is the ECG sign that conclusively establishes the diagnosis. This may be more evident in some leads than others. In this case, the narrow QRS complexes in lead I are obvious.

Not everything that looks like ventricular tachycardia *is* ventricular tachycardia. Do not instinctively reach for pads, paddles or amiodarone. Take a few seconds to calmly examine the ECG and first treat the patient, not the monitor or the ECG.

REFERENCES

1. Barake W, Baranchuk A, Pinter A. Pseudo-ventricular tachycardia mimicking malignant arrhythmia in a patient with rapid atrial fibrillation. *Am J Crit Care* 2014;23:270-2.
2. Llinas R, Galen MD, Henderson V. Tremor as a cause of pseudo-ventricular tachycardia. *N Engl J Med* 1999;341:1275.
3. Vereckei A. Pseudo-ventricular tachycardia: electrocardiographic artefact mimicking non-sustained polymorphic ventricular tachycardia in a patient evaluated for syncope. *Heart* 2004;90:81.

For the question, see page 113.

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