Teaching *NeuroImages*: Rest tremor mimicking ventricular tachycardia

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Figure Twelve-lead ECG demonstrating 5-Hz rest tremor artifact from Parkinson disease

Artifact obscures QRS complexes in leads I, aVL, III, and aVF, giving the appearance of ventricular tachycardia. The normal QRS complexes in the rhythm strip rules out ventricular tachycardia, which would be present in all leads.

Ventricular tachycardia is a life-threatening condition. ECG artifact caused by the 4- to 6-Hz rest tremor of Parkinson disease (PD) can mimic a wide complex ventricular tachycardia (figure). Misinterpretation of ECG artifact can have grave consequences, including cardiac catheterization, administration of antiarrhythmics, and placement of automated implantable cardioverter-defibrillators.¹ Tremor artifact is most prominent in limb leads and represents the action potentials of striated muscle. Artifact in leads I, III, and aVL in

this patient suggests left arm rest tremor. Holding the limb or placing electrodes on the chest can minimize this artifact.² Neurologists should be aware of this ECG artifact to prevent unnecessary cardiac interventions.

REFERENCES

1. Bhatia L, Turner DR. Parkinson's tremor mimicking ventricular tachycardia. *Age Ageing* 2005;34:410–411.
2. Baranchuk A, Shaw C, Alanazi H, et al. Electrocardiography pitfalls and artifacts: the 10 commandments. *Crit Care Nurse* 2009;29:67–73.

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