Tremor-Induced ECG Artifact Mimicking Ventricular Tachycardia

To the Editor:

The ECG from the article by Srikureja et al. that adorns the cover of the September 12, 2000, issue of Circulation is a striking example of a tremor-induced artifact mimicking a serious arrhythmia. On this occasion, the apparent arrhythmia was ventricular tachycardia and led to the patient’s admission to the coronary care unit, although, in my experience, atrial flutter is a more common misdiagnosis of tremor artifact.

Another less obvious problem with the initial ECG was not noted in the article. The right and left arm leads appear to be crossed, as can be deduced from the unilateral nature of the tremor. The pseudo-arrhythmia was caused by left arm tremor, which should have produced maximum artifact amplitude in leads I and III and minimum amplitude in lead II, as was the case in Figure 2. In Figure 1, however, the minimum amplitude occurred in lead III, which resembles the true lead II of Figure 2, whereas lead II resembles the true lead III. The polarity of leads I, aVR, and aVL are reversed in Figure 1 compared with Figure 2, whereas the polarity of aVF is the same for both ECGs, which is again consistent with crossed left and right arm leads. Crossed limb leads are a frequent cause of ECG misdiagnosis, though this example is unique in that it combines both artifacts in one ECG.

Ben Freedman, MBBS, PhD, FACC, FESC
Professor of Cardiology
University of Sydney
Sydney, Australia
Visiting Professor
Tufts University School of Medicine
Division of Vascular Medicine
St Elizabeth’s Medical Center
Boston, Mass
freeben@rcn.com

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Ben Freedman

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