Pseudoventricular flutter

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Figure. Telemetry strip. See text for explication.

A 55-year-old markedly obese diabetic woman with high blood pressure first developed angina pectoris in 1999. It gradually grew worse, and she underwent balloon angioplasty with placement of a stent in the left anterior descending coronary artery in June 2005. She was then free of angina until August 2006, when it recurred. She was transferred to our facility from a hospital in another city.

While the patient was awaiting coronary arteriography, we were notified by the telemetry unit that she had an arrhythmia read by the computer as ventricular fibrillation and by the telemetry technicians as ventricular tachycardia. The rhythm strip showed complexes with slight variation in morphology occurring almost perfectly regularly at a rate of 241 per minute, a pattern consistent with ventricular flutter (*Figure*). Meanwhile, the patient was sitting in a chair, was in no distress, and had a regular pulse at a rate of 64 beats per minute. The room was cold, and to keep warm she rapidly flexed and extended her left ankle with only the ball of her left foot on the floor, so that her entire left leg moved. This movement was transmitted to her trunk. Thus, what at first glance appeared to be ventricular flutter was in reality movement artifact. The only cardiac activity on the rhythm strip was a series of nearly regular spikes occurring at

a rate of 64 per minute. These are indicated by the vertical lines above the tracing (*Figure*). When she stopped moving her leg, the artifact disappeared, and the rhythm clearly was sinus.

Lead malpositions and artifacts are the bane of the electrocardiographer (1–3). Furthermore, misinterpreting artifact as a ventricular tachyarrhythmia may have important clinical repercussions (2). Usually one or more clues alert the electrocardiographer to movement artifact. One of the most important clues is the presence of spikes or notches representing the patient's QRS complexes and occurring regularly and independently of the complexes of the pseudotachycardia, as seen in the *Figure* (2, 3).

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3. Littmann L, Monroe MH, Smith RM, Smith RW, Unice RM, Chrisman L, Squire A, Langan N, Halperin J, Knight BP, Morady F. Electrocardiographic artifact [letters to the editor and reply]. *N Engl J Med* 2000;342(8):590–592.

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