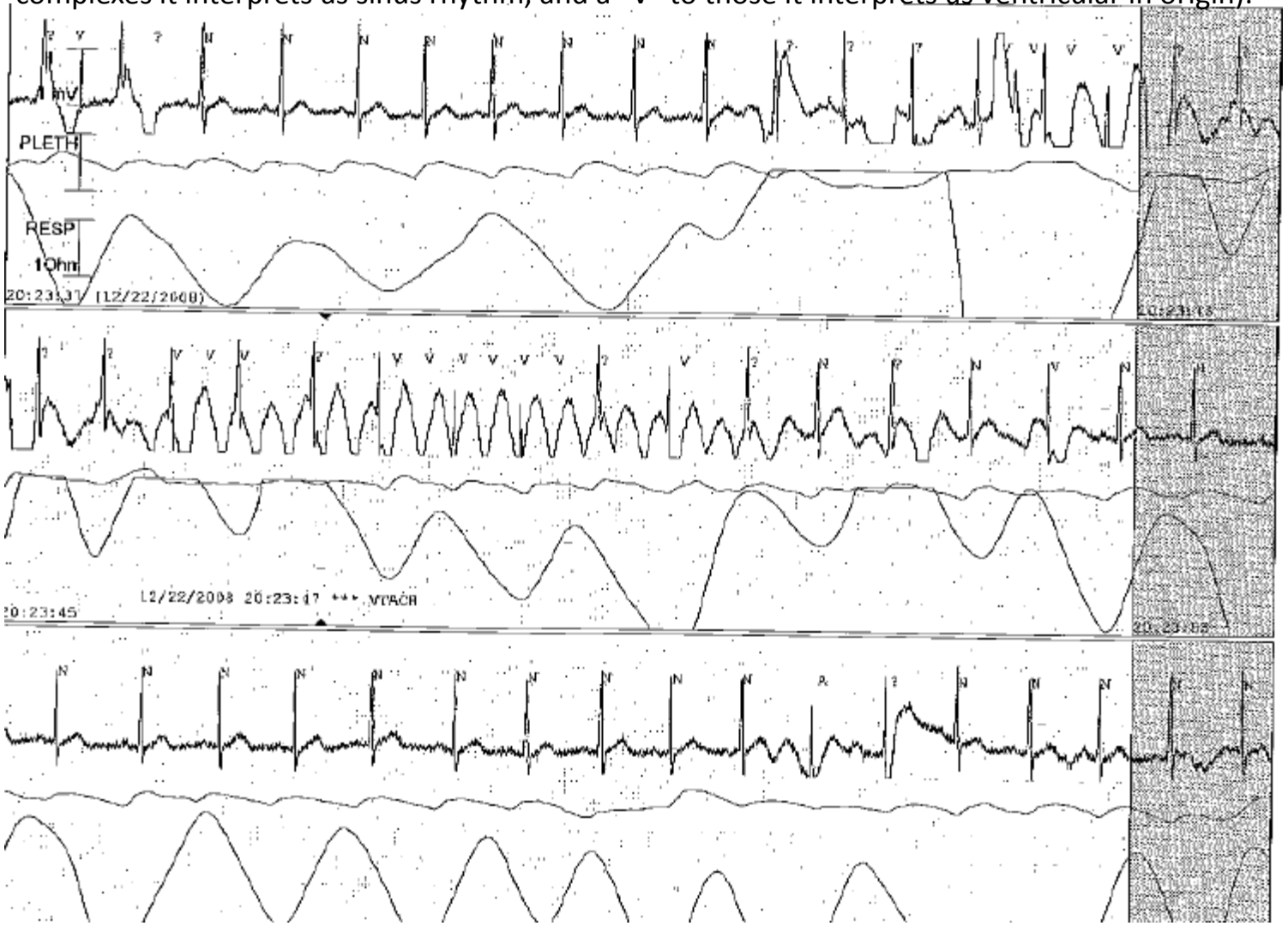
A 4 month old with a history of supraventricular tachycardia (SVT) is admitted to the floor with a history consistent with bronchiolitis. He takes propranolol and digoxin for treatment of his SVT, which has been under good control recently. You are comfortably asleep in the call room when a nurse frantically calls you, reporting that the child has been having episodes of V-tach. The nurse has printed out the monitor strip to prove the point (note the computer assigns an "N" to QRS complexes it interprets as sinus rhythm, and a "V" to those it interprets as ventricular in origin):



You have one look at the page, reassure the nurse and go back to sleep, dreaming about a call-free elective rotation on the pediatric cardiology service.

1) Without having seen the patient, how do you KNOW this can't be V-tach?!? (2 points)

Here's the answer to the 5/17 ECG of the week:

Look at the monitor tracings--there are three. One is the ECG, one is the pleth tracing on the O2 sat which basically is showing the pulsatility in whatever digit the sat monitor is hooked up to, and the last tracing marks the patients respirations. Note that there is an upstroke in the "pleth" tracing that corresponds to each beat recorded on the ECG.

In the second row of tracings (where the kid goes into "VT"), note that there are still some narrow QRS complexes that peek through the run of what appear to be wide QRS complexes. These narrow complexes march out at regular intervals as if the sinus rate had not been interrupted at all. That's because the rhythm has not changed and the "wide complexes" are artifact. The clincher is the fact that you can see the "pleth" tracing upstrokes that occur with each narrow QRS. The pleth tracing does not line up at all with the wide complexes that the nurse and ECG machine suspected were ventricular beats.

Also, it's tough to make out the scale on the tracing, but I think the rate for the "ventricular beats" would be somewhere around 300bpm, which is way fast for VT.