



There is a wide QRS that is at regular intervals at a rate of about 65. They are either not preceded by a P-wave, or by a P-wave that is too close to be conducting.

Black arrows points to normal P-wave that conducts to a normal QRS.

Green Arrows point to upright sinus beats that are close to the QRS and create a "fusion" beat, in which the ventricular beat and the normal beat meet up (fuse) and create a hybrid QRS that is longer than a normal one, but shorter than the idioventricular ones.

Red Arrows point to retrograde P-waves. The idioventricular rhythm conducts up the AV node to the atrium, creating an upside down P-wave after the QRS.

Blue arrows point to upright P-waves that are within or after the QRS; they occurred too late to affect the QRS (they did not fuse).

See below how this resembles WPW and why it is not WPW.

AIVR is an automatic ventricular rhythm that is:

1. Faster than a normal ventricular escape rhythm (which is also automatic at rates as high as 50). AIVR is caused by enhanced automaticity (faster than normal automaticity).
2. Slower than ventricular tachycardia (less than 100-120). VT is a re-entrant rhythm.

It is a **benign rhythm** but may be seen in dangerous pathologies, particularly in the reperfusion phase of acute STEMI, digoxin toxicity, and sympathetic overload.

Clinical course

Although the overreading physician did not see the AIVR, the resident did diagnose "Idiopathic Ventricular Rhythm without Tachycardia," which does pretty well (but not exactly) describe the ECG, but does not conform to the standard terminology. **"AIVR" is much more accurate and precise.**

The patient had negative troponins in the ED. He was not on digoxin. He did not have other evidence of sympathetic overload.

He metabolized his toxin, whatever it was, and was discharged.

It is important to know that AIVR can occur any time and does not necessarily imply significant pathology

References:

1. <http://hqmeded-ecg.blogspot.com>