Pseudo Sinus Arrest due to ECG Machine Malfunction

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Introduction: Since its advent, surface electrocardiography (ECG) has been proven to be an irreplaceable tool in evaluating patient’s heart condition. The electrical activity from the heart will be processed and filtered by the ECG machine and displayed in a standardized paper to ease interpretation. Albeit rare, machine malfunction can give rise to missed interpretation of ECG.

Methods: N/A.

Result: A 56-year-old male with intracranial bleeding (subarachnoid and subdural) due to mild head injury, history of diabetes mellitus type 2 on insulin therapy, and colorectal cancer in capecitabine. He was consulted to the EP team for suspected sinus arrest (Figure 1). After closer inspection, there is widening of P-QRS-T waves (bold arrows) and we also got the dashed line below the ECG inscription showing a sudden widening (red circle). Both of this suggested a sudden malfunction in ECG machine that falsely give impression of sudden sinus slowing. His 24 hours observation did not yield any sinus node dysfunction, and no treatment given for this presumed abnormality.

Conclusion: Our patient had risk factors for sinus node dysfunction: age and history of diabetes. The use of capecitabine can cause transient vasospastic ischemia which could yield to transient sinus node dysfunction. All of these factors contribute to more sensitive referrals to cardiologist by the emergency physician. It is important to maintain skill in ECG interpretation. This includes not just waves discrimination, but also insights about the way the machine works.