

1. What is the most common ECG finding for Pulmonary Embolus (PE)?
  - A. S1Q3T3 Sign (prominent S wave in lead I, Q wave and inverted T wave in lead III)
  - B. Tachycardia
  - C. Lateral T wave inversion
  - D. Bradycardia

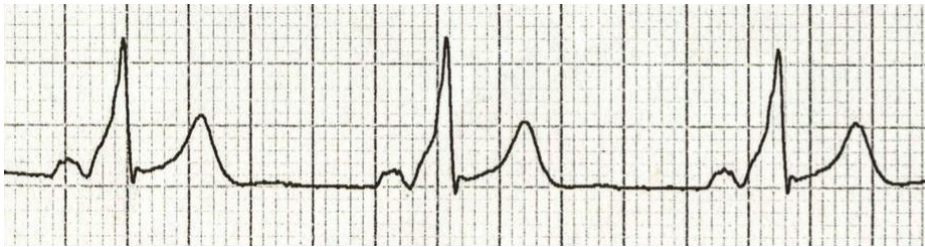
Answer: B. Tachycardia is the most common ECG finding in PE. The S1Q3T3 is a sign of acute cor pulmonale (acute pressure and volume overload of the right ventricle because of pulmonary hypertension) and reflects right ventricular strain. However, this finding is present in 15% to 25% of patients ultimately diagnosed with PE. T wave inversion is occasionally present, but is typically anterior V1-V4.

References

Chan TC, Vilke GM, Pollack M, Brady WJ. Electrocardiographic manifestations: pulmonary embolism. *Journal of Emergency Medicine*. 2001 Oct;21(3):263–70.

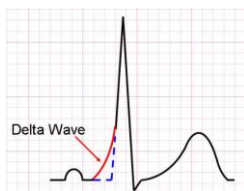
Ullman E, Brady WJ, Perron AD, Chan T, Mattu A. Electrocardiographic manifestations of pulmonary embolism. *American Journal of Emergency Medicine*. 2001 Oct;19(6):514–9.

2. What prominent ECG finding below is characteristic of Wolff-Parkinson-White (WPW) Syndrome:



- A. Prolonged QT Interval
- B. Delta Wave
- C. Long PR interval
- D. Peaked T waves

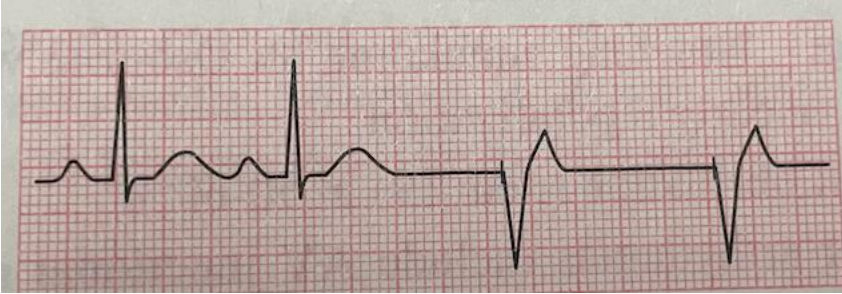
Answer: B. The Delta wave is a slurred upstroke in the QRS complex often associated with a short PR interval. It is most commonly associated with pre-excitation syndrome such as WPW. The other common findings are Short PR Interval and a broad QRS.



Reference

Life in the Fastlane. Retrieved on July, 12, 2017 from <https://lifeinthefastlane.com/ecg-library/basics/delta-waves/>

3. What sense can you make of this ECG

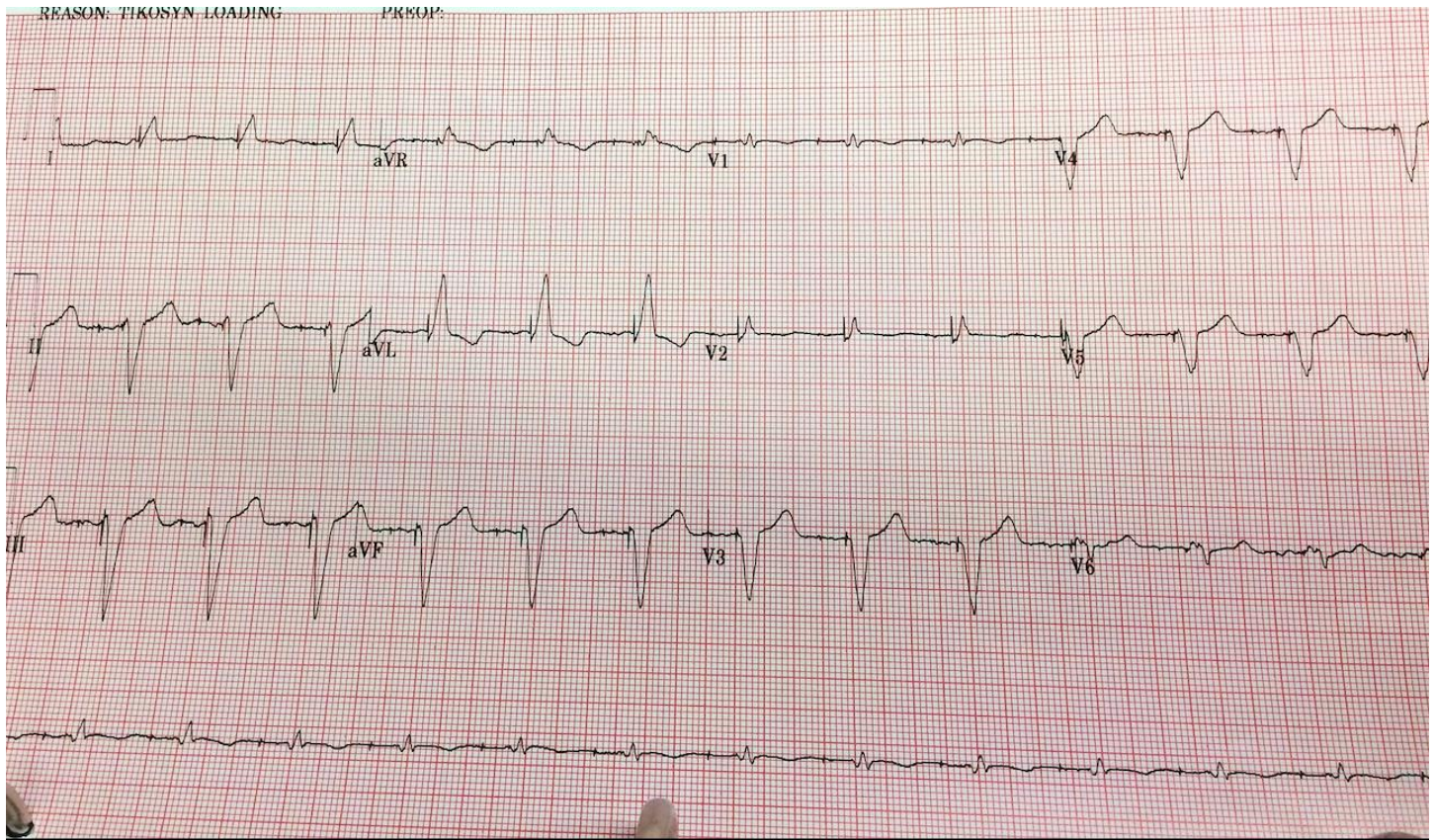


- a. Ventricular demand pacing, oversensing
- b. Ventricular demand pacing, normal function
- c. Ventricular demand pacing, under sensing
- d. Ventricular demand pacing, lead fractured

Answer: B Ventricular demand pacing, normal function. Pacemaker stimulus followed by a QRS complex of different morphology than intrinsic QRS. A VVI pacemaker senses and paces only in the ventricle and is oblivious to native atrial activity. Appropriately sensed ventricular activity resets pacemaker timing clock. After an interval of time with no sensed ventricular activity, a ventricular paced beat is delivered and a new cycle begins. A spontaneous QRS arising before the end of the V-V interval is sensed and the ventricular output of the pacemaker is inhibited. A new timing cycle begins.

O'Keefe, James H., et al. *The Complete Guide to ECGS: A Comprehensive Study Guide to Improve ECG Interpretation Skills*. Jones & Bartlett Learning, 2019.

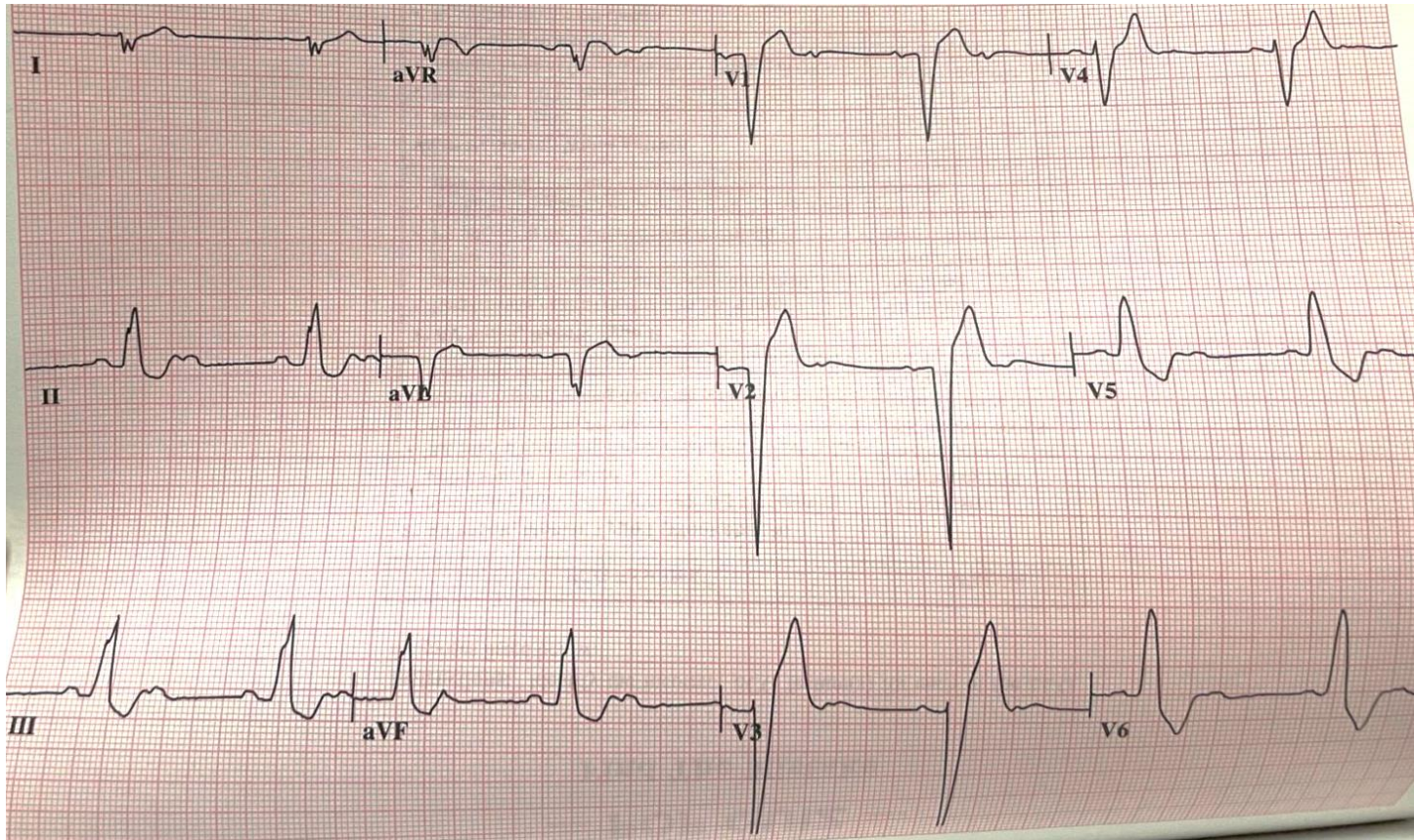
- 4. Pt is a 65 year old male with known coronary artery disease s/p PCI to LAD, ischemic cardiomyopathy s/p dual chamber ICD placement and paroxysmal atrial fibrillation. APP noticed an increase in atrial fibrillation burden from 1% to 30% with last ICD interrogation. Pt presents as a direct admit for Tikosyn loading. Why does the patient need to be monitored in the hospital for the first 5 doses of Tikosyn?



- a. QRS monitoring; risk of polymorphic ventricular tachycardia
- b. QRS monitoring; risk of monomorphic ventricular tachycardia
- c. QTc monitoring; risk of polymorphic ventricular tachycardia
- d. QTc monitoring; risk of monomorphic ventricular tachycardia

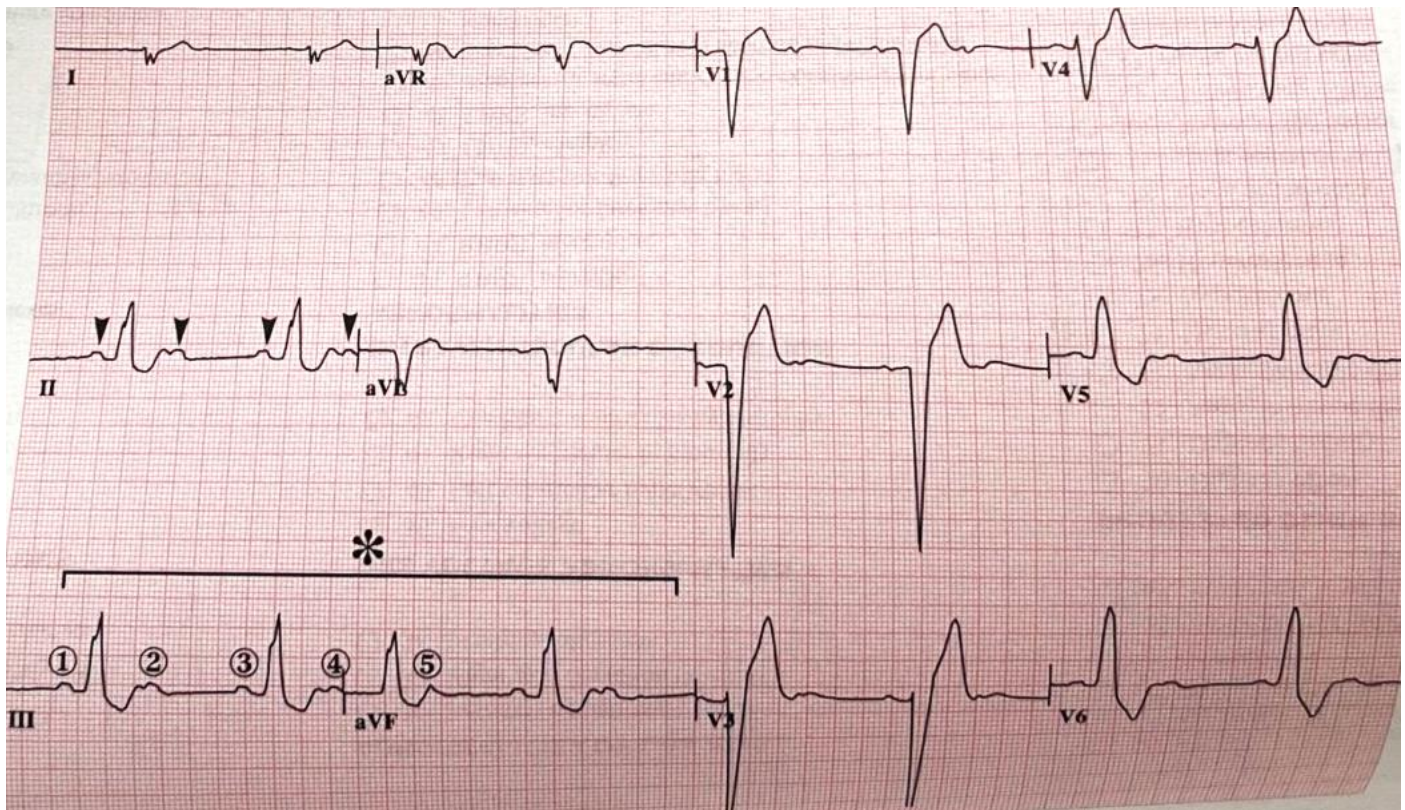
Answer: C-- QTc monitoring; risk of polymorphic ventricular tachycardia

5. 51 year old F presenting with orthopnea and paroxysmal nocturnal dyspnea. What rhythm do you see here that may be the culprit of her symptoms?



- a. Mobitz Type I (Wenckebach)
- b. Mobitz Type II
- c. 2:1 AV block
- d. Sinus bradycardia with pre-atrial complex (PACs)

Answer: A. ECG shows sinus bradycardia with predominantly 2:1 AV block (arrowheads mark P waves), LBBB with secondary ST-T changes and right axis deviation. Close inspection reveals Mobitz Type I – the third P wave conducts at a normal PR interval, the fourth P wave at a prolonged PR interval, and the fifth P wave (hidden in the T wave) is blocked. The Q waves and ST elevation in leads V1-V3 are most likely due to LBBB, rather than acute anteroseptal MI (LBBB often results in a pseudoinfarct pattern).



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