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Editorial

# The Diagnosis of Pseudo Myocardial Infarction Using Fourth Universal Definition of Myocardial Infarction

**Ramachandra Barik***

*Associate Professor and HOD, Department of Cardiology, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India*

***Corresponding Author:** Ramachandra Barik, Associate Professor and HOD, Department of Cardiology, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India.

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Pseudo-infarction pattern in pre-excitation is characterised Q wave-T wave vector discordance in addition to short PR interval and delta wave [1]. Practicing cardiologists should remain aware about the close differential diagnosis of old myocardial infarction in the 12 lead ECG because pseudo myocardial infarction pattern in ECG are also commonly seen in other cardiac diseases. As such, a QS complex in lead $V_1$ is normal. Small septal Q waves are usually normal. Q waves < 0.03s and < 0.25 of the R-wave amplitudes in leads I, aVL, aVF, and $V_4$-$V_6$ is normal if the frontal QRS axis is between -30° and 0°. The ECG findings of a prior myocardial infarction when there is no evidence of left ventricular hypertrophy or left bundle branch block are as follows [2]:

1. Any Q wave in leads V2-V3 > 0.02 s or QS complex in leads V2-V3.
2. Q wave ≥ 0.03 s and ≥ 1 mm deep or QS complex in leads I, II, aVL, aVF or V4-V6 in any two leads of a contiguous lead grouping (I, aVL; V1-V6; II, III, aVF).
3. A R wave > 0.04 s in V1-V2 and R/S > 1 with a concordant positive T wave in absence of conduction defect.

The patients with pre-excitation are relatively young but have similar symptoms of myocardial ischemia or infarction like palpitation, light headedness, and chest pain. Though the patients with pre-excitation have the pseudo infarction pattern in ECG but these patients always have serum cardiac troponin level < 20 ng/litre. A 32-year-old male presented with history of palpitation for last 5 yrs. A 12 lead ECG was taken as shown in figure 1. 2D echocardiogram was normal. The quantitative cardiac troponin level was < 40 ng/litre. His coronary angiogram was normal the patient was counselled regarding pre-excitation, the antiplatelet and statin were removed from his treatment and was referred for radio frequency ablation. A 19yrs-old female presented with palpitation and light headedness for last six years. She was on antiplatelet, statin, beta blocker and angiotensinogen converting enzyme inhibitor for last 2 yrs. A 12 lead ECG was taken as shown in figure 2. Echocardiogram was normal. Her serum quantitative troponin level was < 40 ng/litre. She was surprised to know that she had no myocardial infarction. She was counselled regarding pre-excitation, temporarily kept on verapamil and referred for radio frequency ablation.

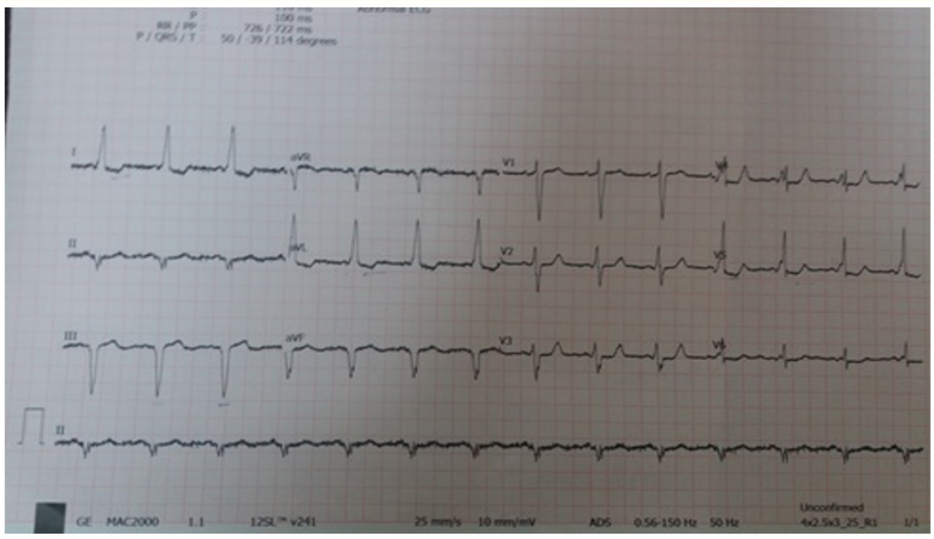

***Figure 1:*** *A 12 lead ECG shows the presence of pseudo-infarct pattern (pathologic Q waves with Q wave-T wave vector discordance in II, III and II aVF) along with short PR interval, delta waves and wide QRS complexes. The delta wave and R wave are being positive in V1 and the delta wave and R wave being negative in inferior leads, the possible path is posterior septal pathway.*

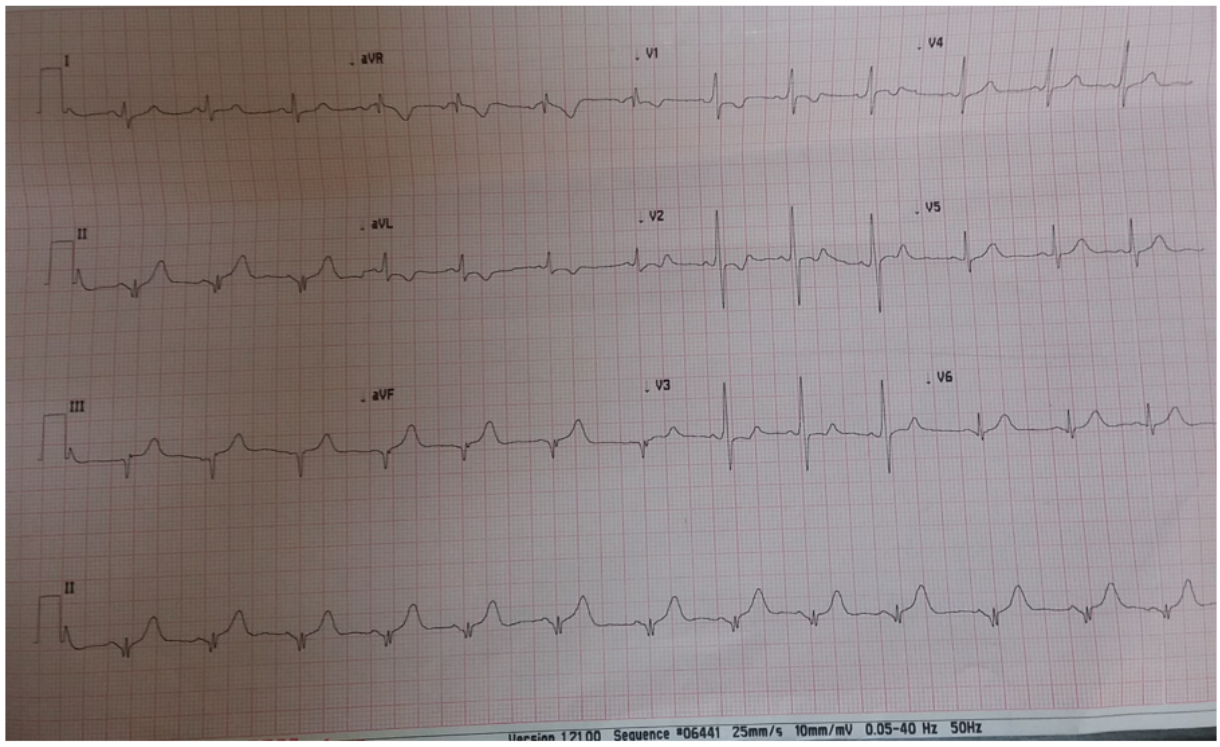


***Figure 2:*** *A 12 lead ECG shows the presence of pseudo-infarct in the inferior and posterior wall characterised by pathologic Q waves with Q wave-T wave vector discordance in II, III and II aVF and R/S > 1 in V1 and V2 pattern along with short PR interval , delta waves and wide QRS complexes. The delta wave and R wave are being positive in V1 and the delta wave and R are being wave negative in inferior lead, the possible path is posterior septal pathway.*

## Bibliography

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