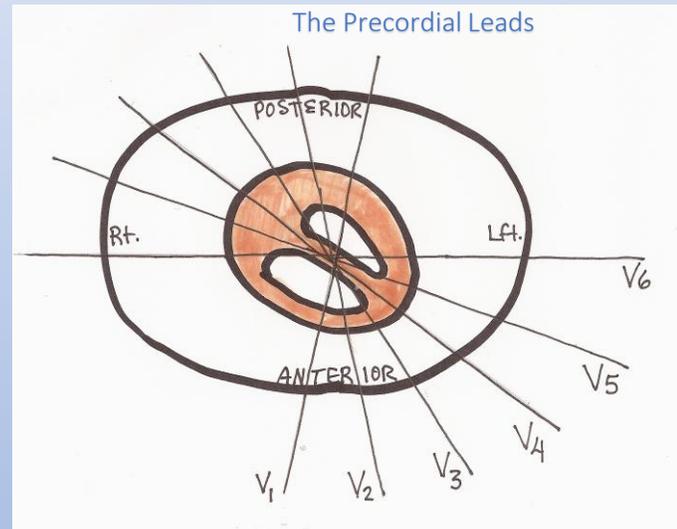
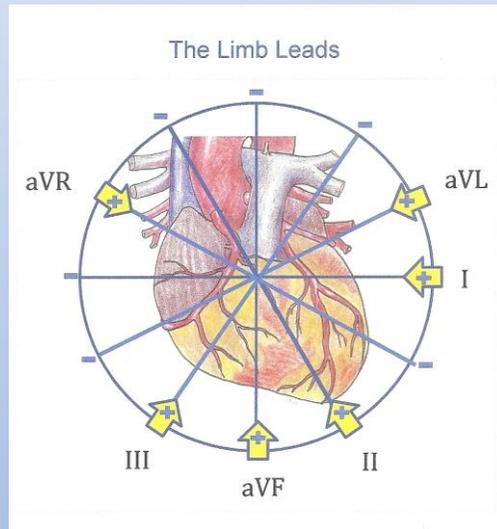




12-Lead ECG Quiz



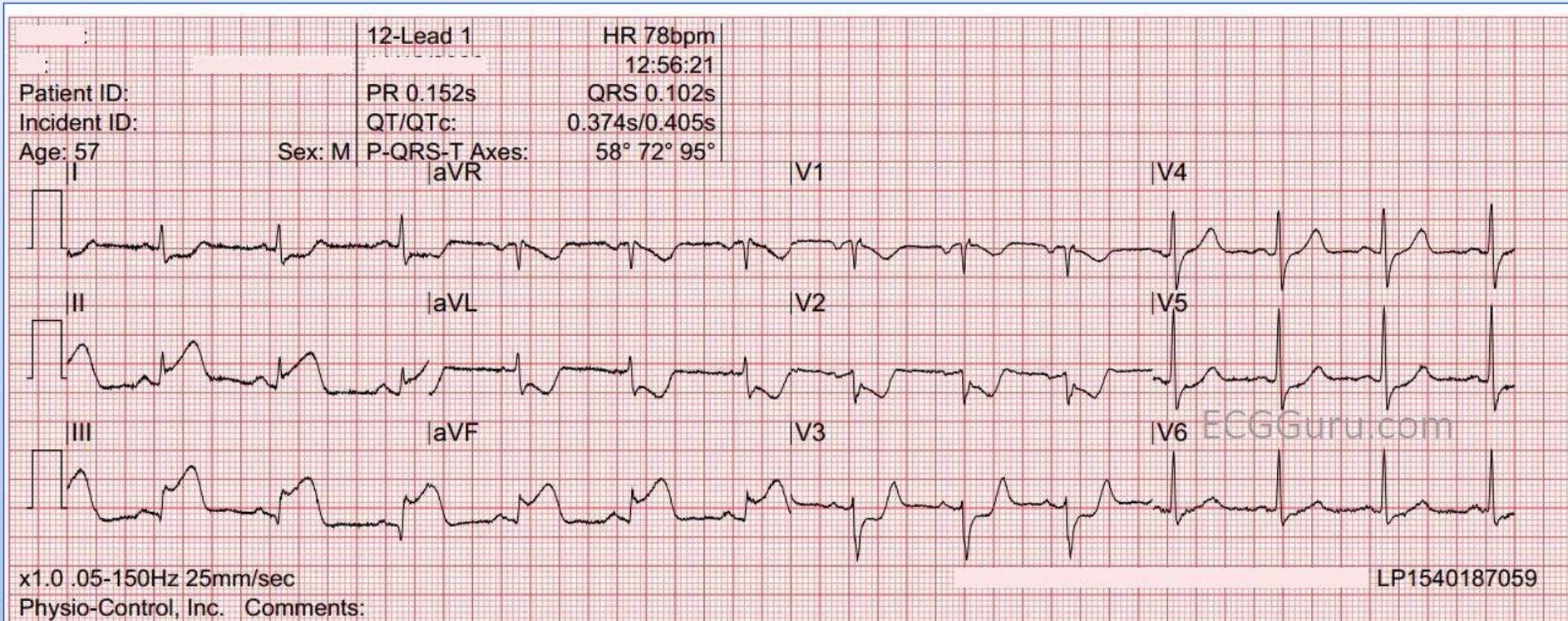
Level 2 - Experienced

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ECGs should always be interpreted in a setting where patient information is available. It is very helpful to have access to previous ECGs. For this quiz, we have tried to avoid ECGs which may be difficult to assess without copious clinical correlation. We have given a small amount of patient information to assist in the interpretation of the ECG.

For questions or comments , contact us at Dawn.ECGGuru@gmail.com

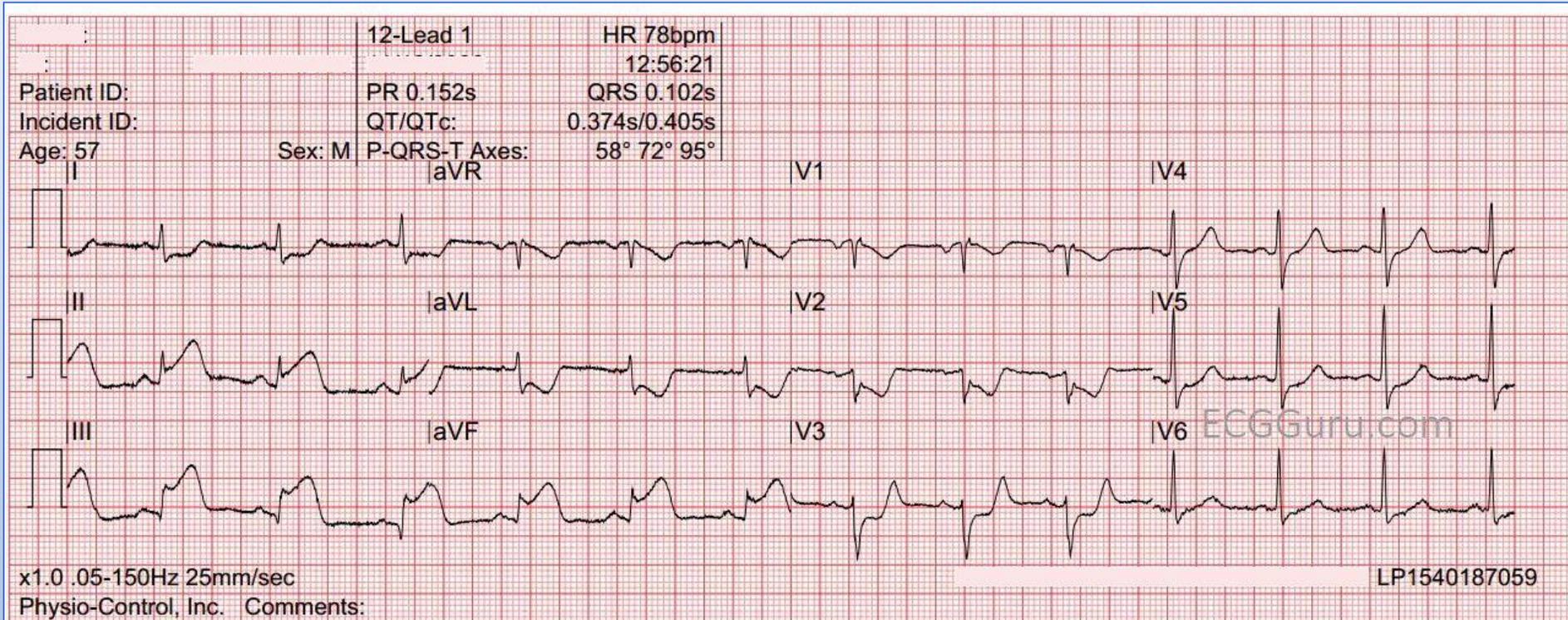
1. 57-yr-old man with crushing chest pain, radiating to his left jaw.



ST measurements are measured at the J point and are expressed in mm.

I	II	III	aVR	aVL	aVF	V1	V2	V3	V4	V5	V6
-1.23	2.66	3.90	-0.71	-2.56	3.28	-0.65	-2.55	-1.73	-0.35	-1.06	-0.71

1. 57-yr-old man with crushing chest pain, radiating to his left jaw.

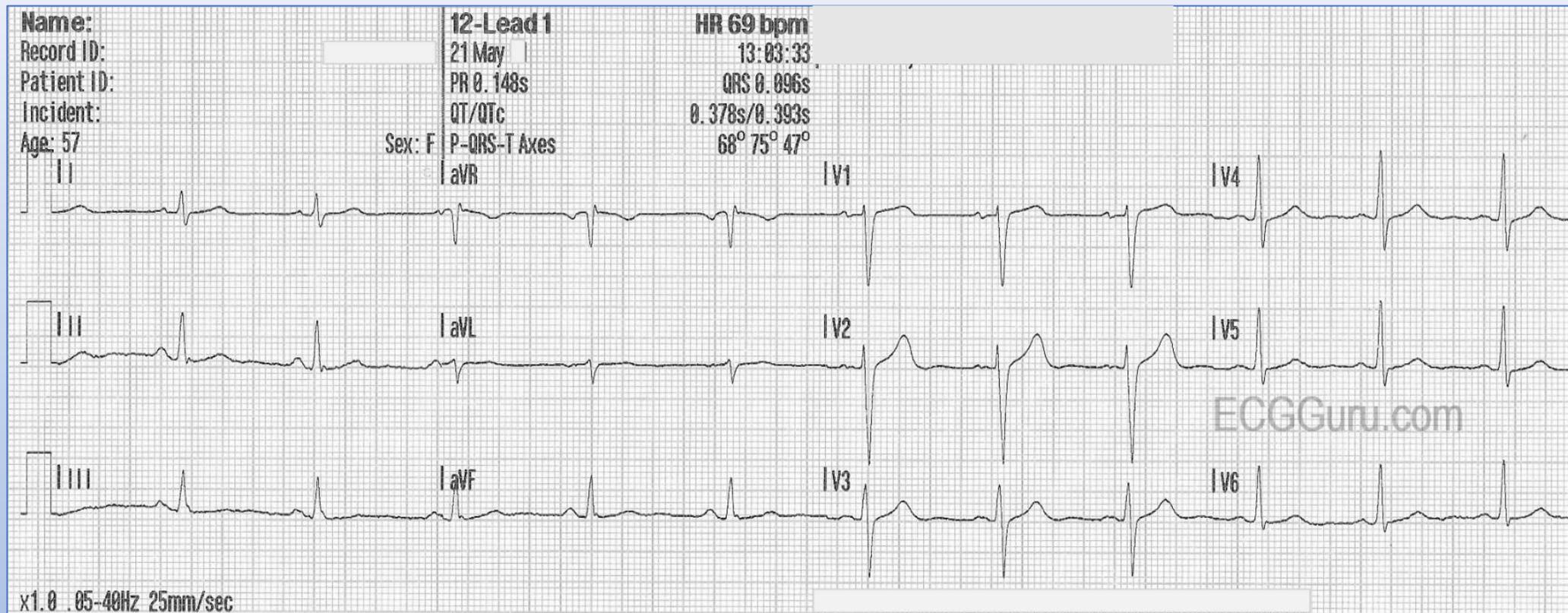


ST measurements are measured at the J point and are expressed in mm.

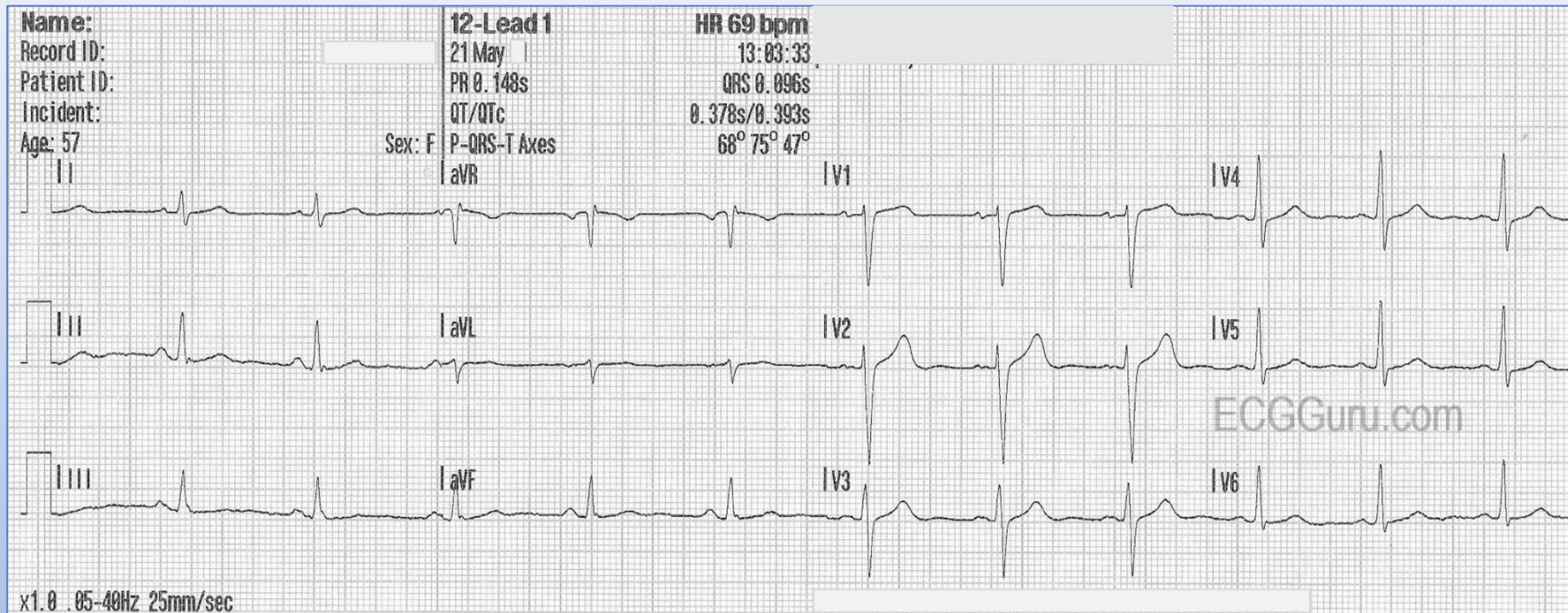
I	II	III	aVR	aVL	aVF	V1	V2	V3	V4	V5	V6
-1.23	2.66	3.90	-0.71	-2.56	3.28	-0.65	-2.55	-1.73	-0.35	-1.06	-0.71

NSR with ST elevation in II, III, aVF. Reciprocal ST depression in I, aVL, V1-V3. *Acute occlusive inferior-posterior M.I.*

2. 57-yr-old woman. Screening pre-op ECG.

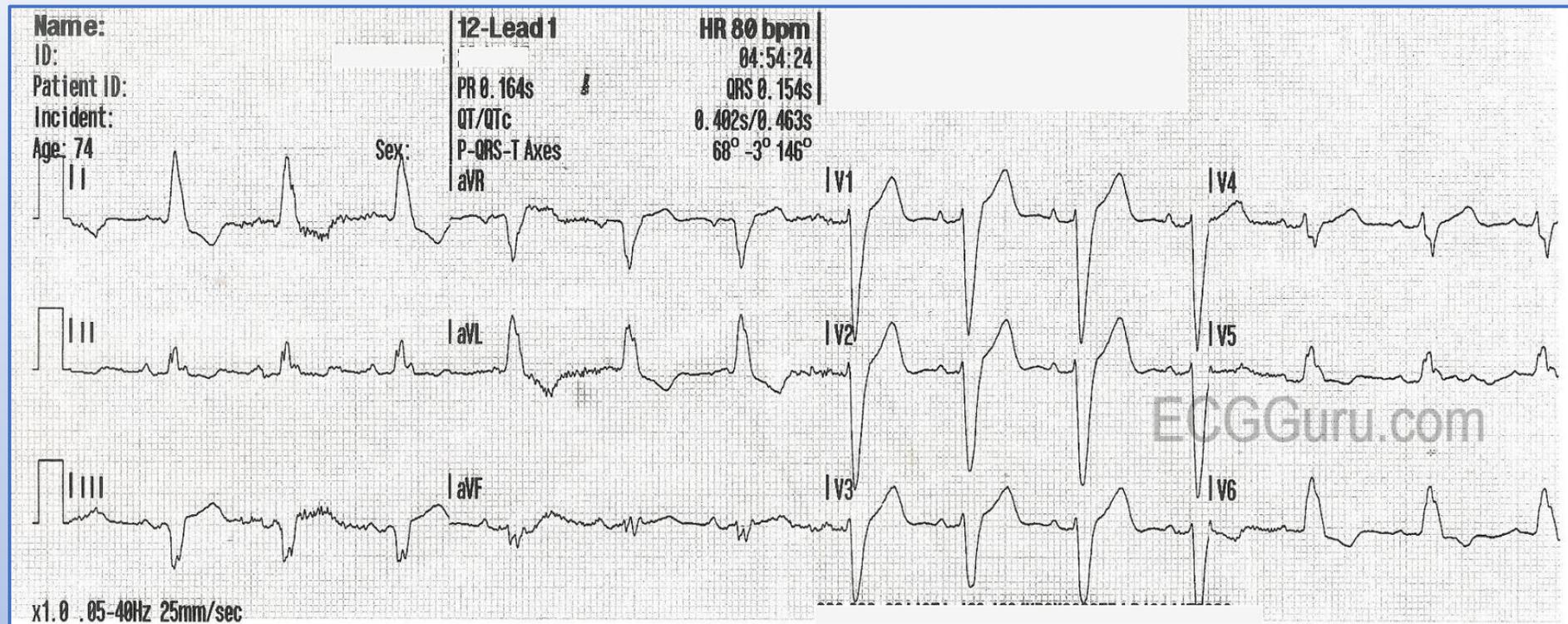


2. 57-yr-old woman. Screening pre-op ECG.

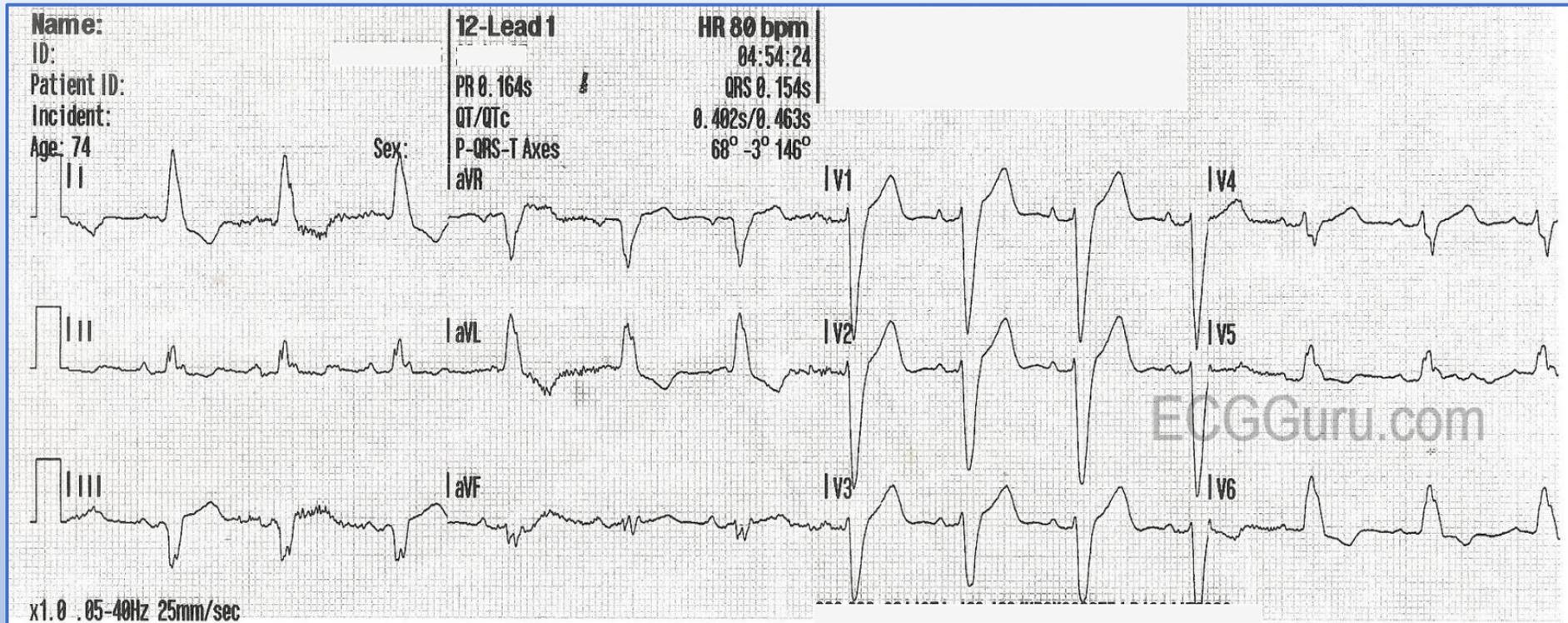


Normal sinus rhythm. *Normal ECG.*

3. 74-yr-old man with hx of CHF. Complaining of shortness of breath on exertion.



3. 74-yr-old man with hx of CHF. Complaining of shortness of breath on exertion.



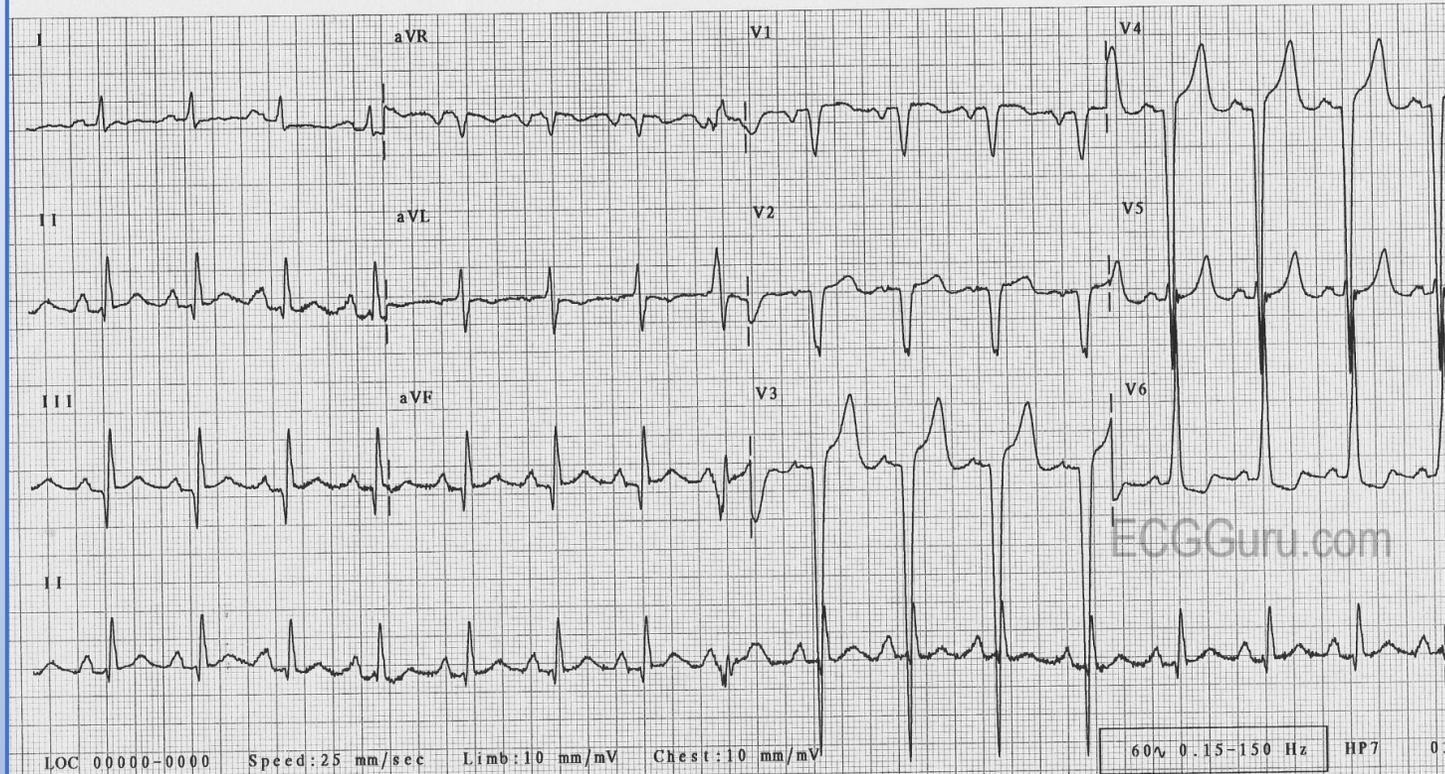
Normal sinus rhythm. Wide QRS. QRS negative in V1 and positive in Leads I and V6. Discordant ST-T waves.
Left bundle branch block.

4.

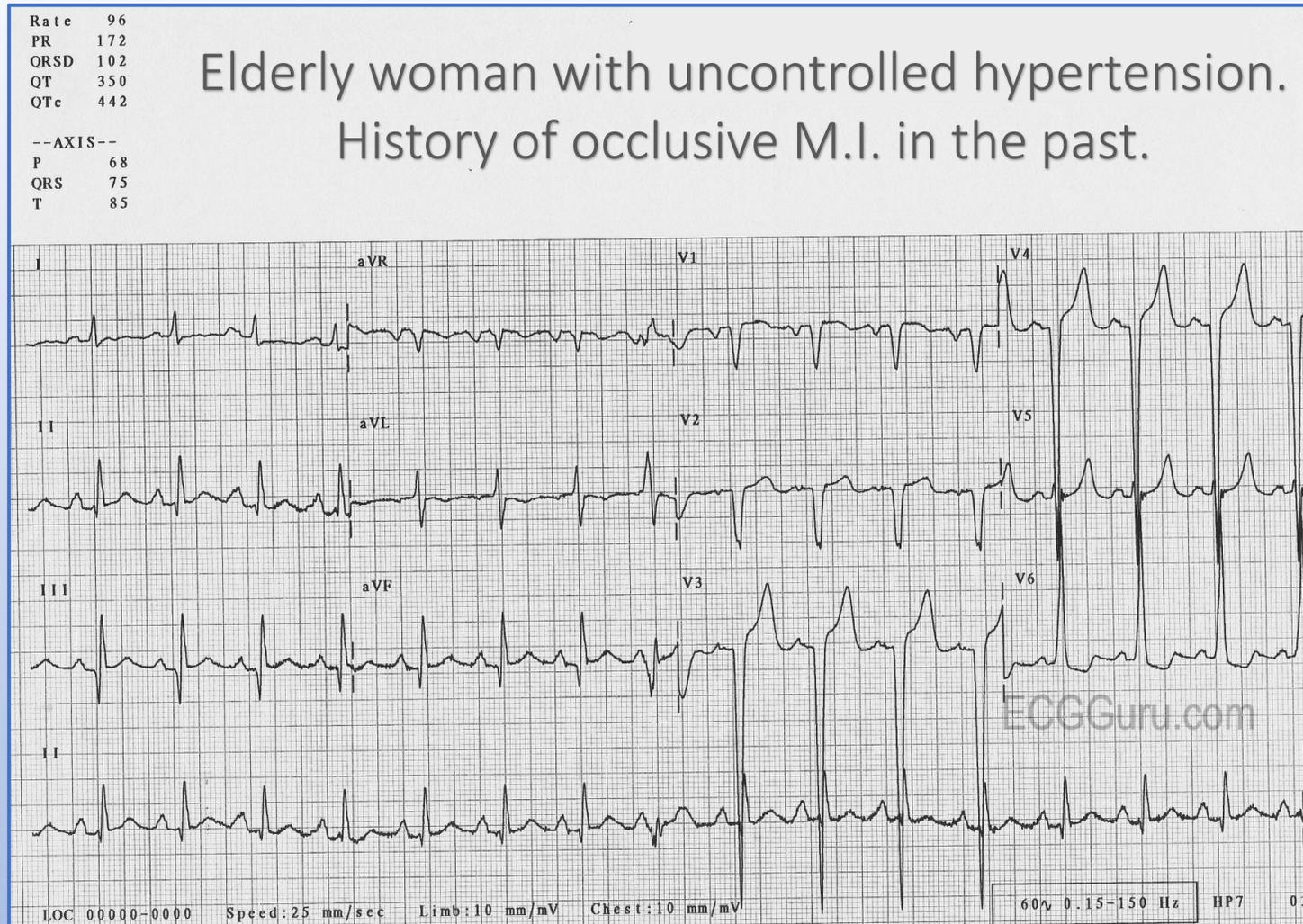
Rate 96
PR 172
QRSD 102
QT 350
QTc 442

--AXIS--
P 68
QRS 75
T 85

Elderly woman with uncontrolled hypertension.
History of occlusive M.I. in the past.

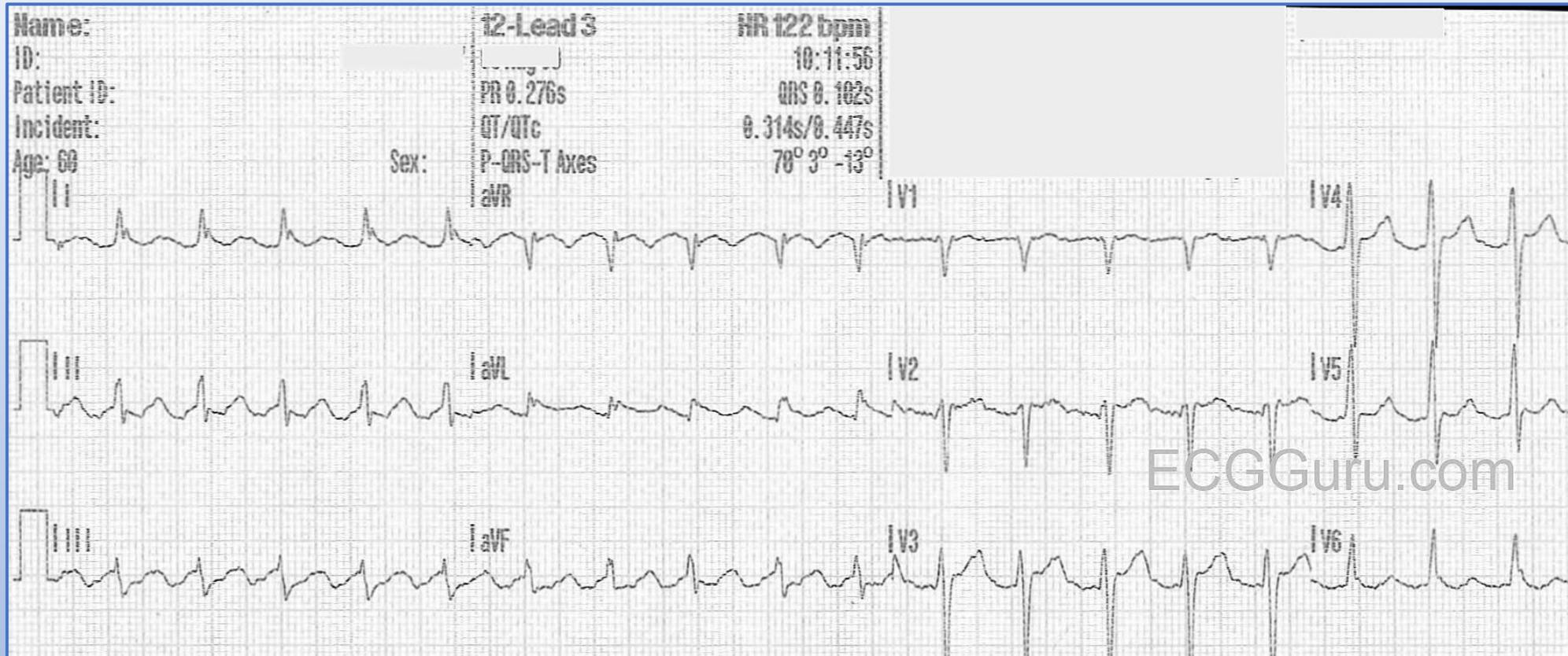


4.

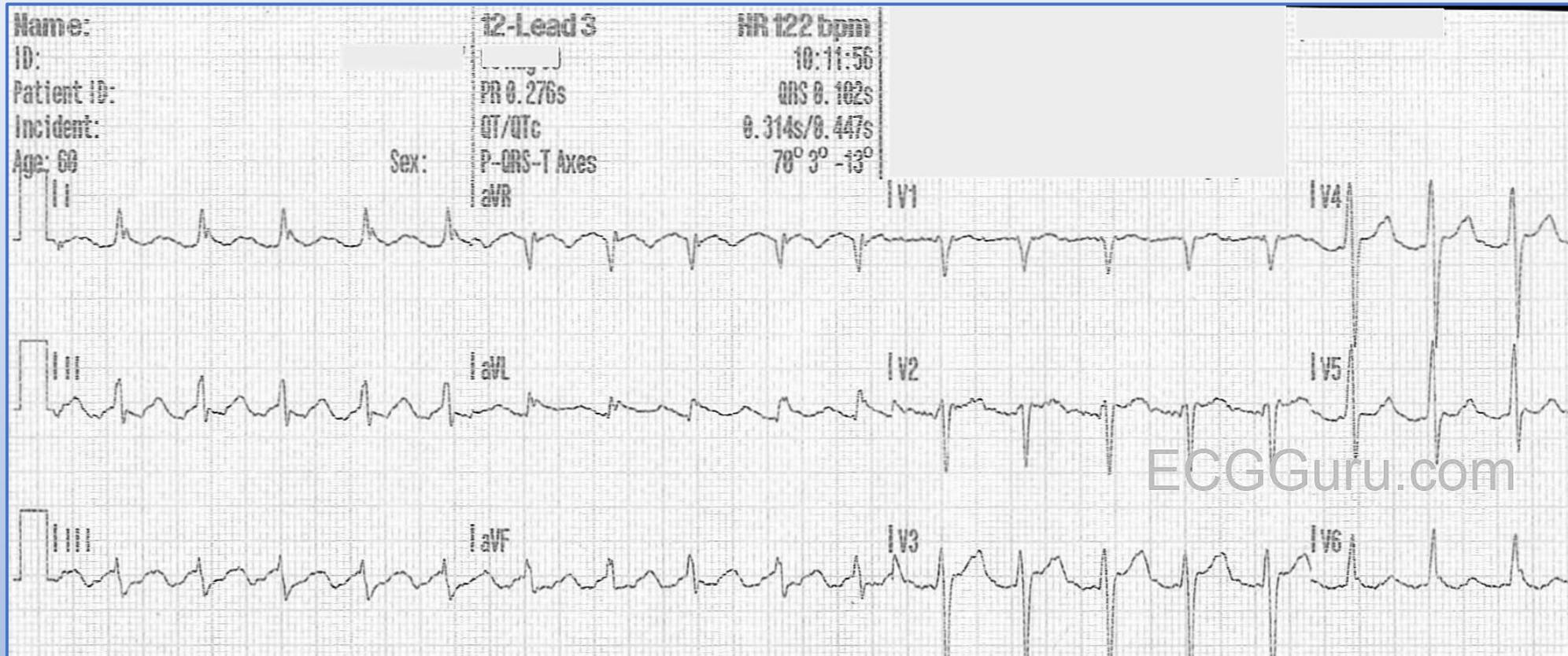


Normal sinus rhythm. Pathological Q waves inferior wall and anterior wall.
Discordant ST changes throughout. (“strain pattern”). Voltage criteria for left ventricular enlargement met. *LVH with strain. Cannot rule out new ischemic event.*

5. 60-yr-old man complaining of fast pulse and “breathless” feeling.

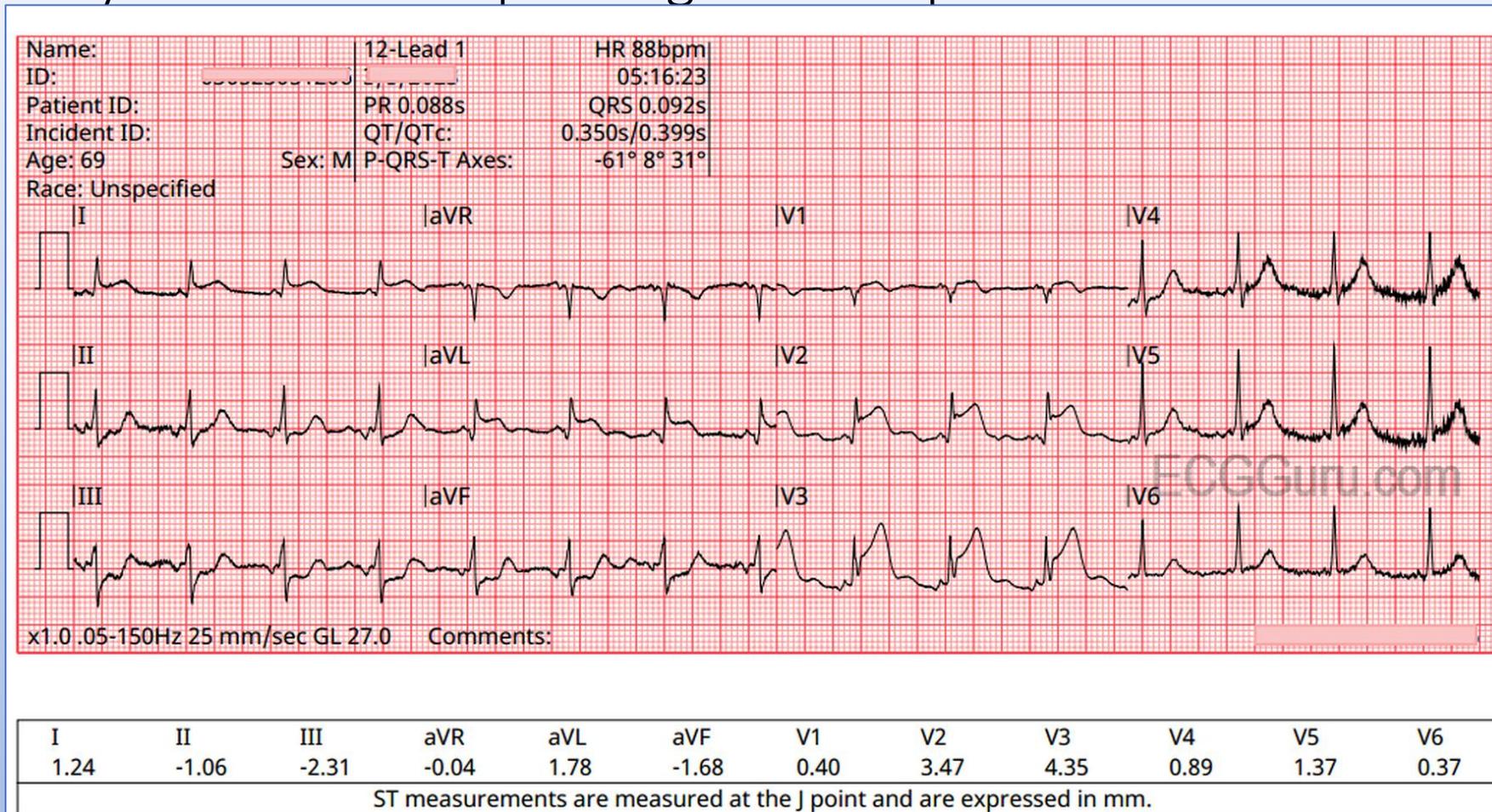


5. 60-yr-old man complaining of fast pulse and “breathless” feeling.

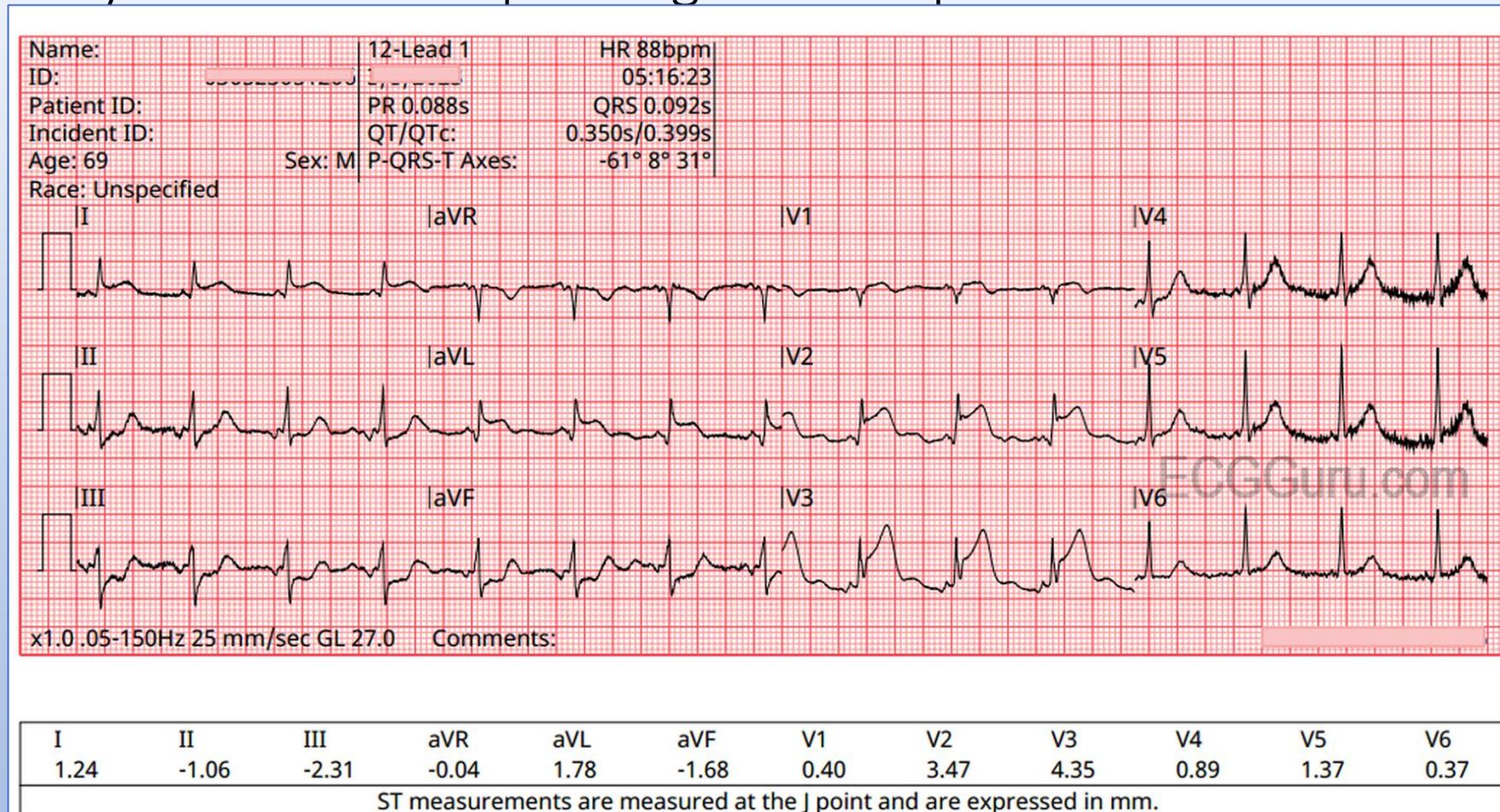


Atrial rate 244 bpm. Ventricular rate 122 bpm.
Atrial flutter with 2:1 conduction.

6. 69-yr-old man complaining of chest pain.

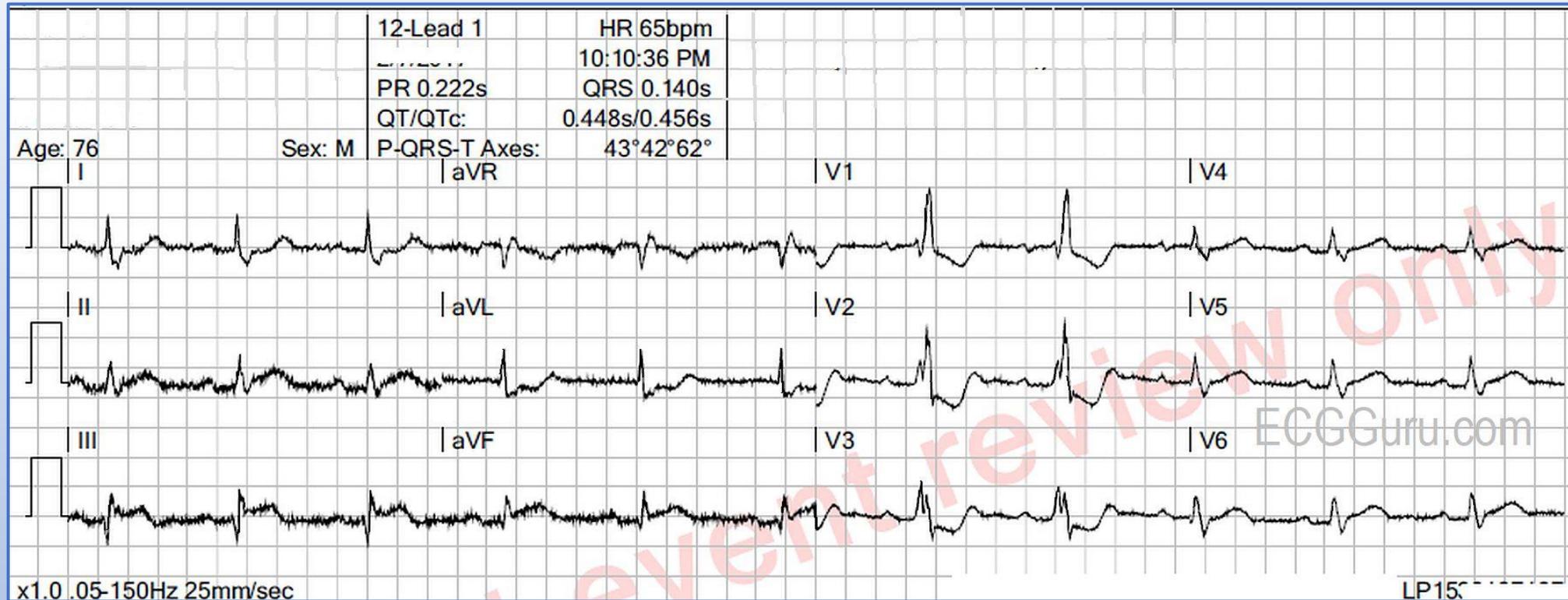


6. 69-yr-old man complaining of chest pain.



Normal sinus rhythm. ST elevation V1 – V3, Leads I and aVL. Artifact in V4-V6. Reciprocal ST depression inferior wall. *Acute anterior-lateral occlusive M.I.*

7. 76-yr-old man complaining of chest pain and nausea. Diaphoretic.



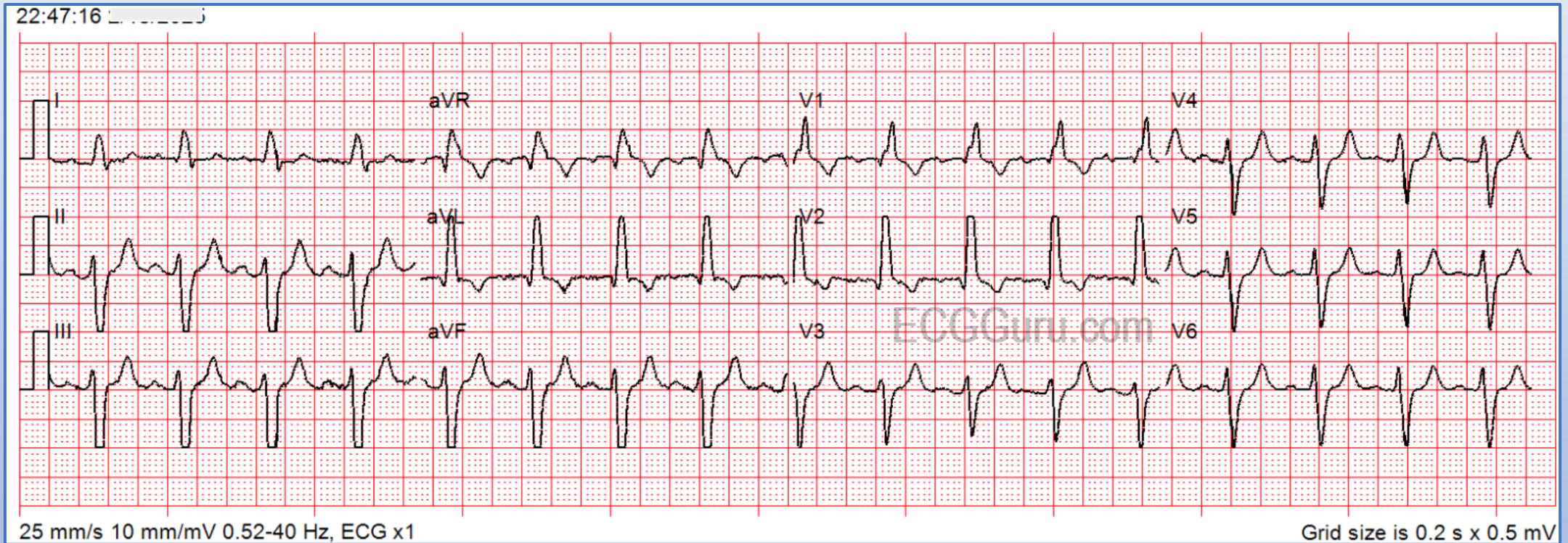
Normal sinus rhythm. QRS wide. RSR' pattern in V1 and wide little S wave in left-side leads. ST elevation II, III, and aVF, minimally in V5 and V6. Reciprocal ST depression Leads I, aVL, V1 – V3.

Muscle tension artifact, especially prominent in inferior leads.

Acute inferior-posterior occlusive M.I. with right bundle branch block.

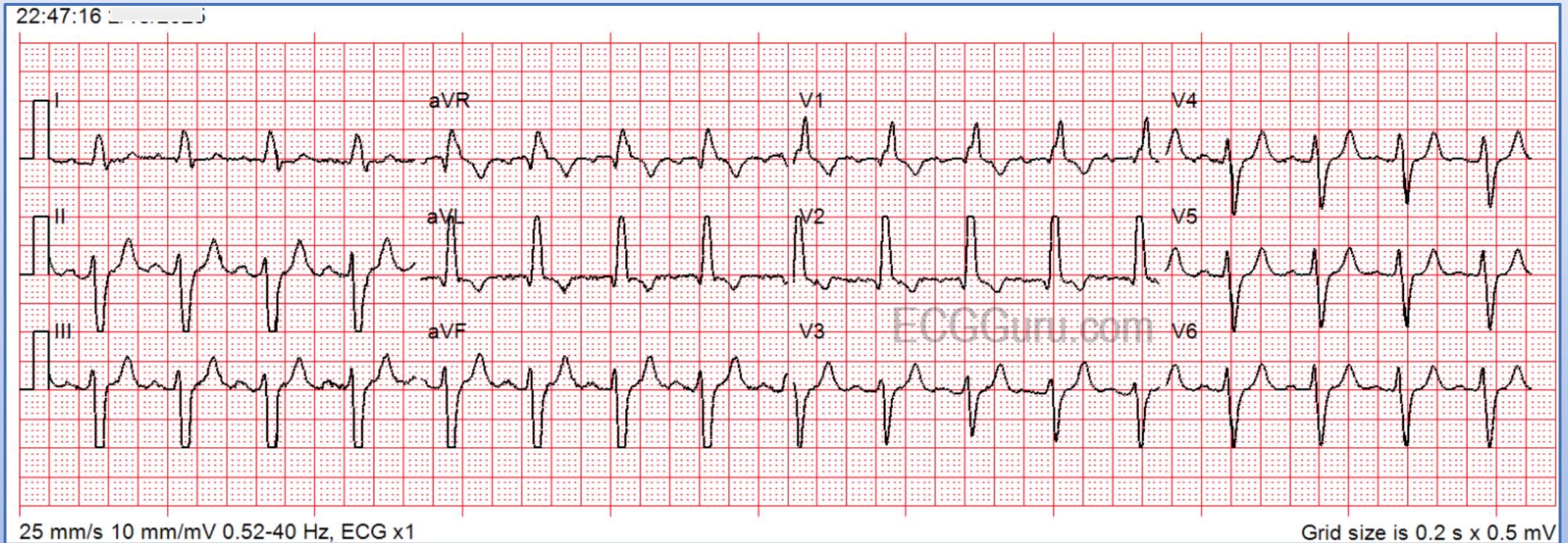
8. 86-yr-old man complaining of weakness and intermittent syncopal episodes. Rhythm strips show runs of SVT.

Rate: 105 bpm. PRI: 179 ms QRS duration: 149 ms. QRS axis: Abn. left



8. 86-yr-old man complaining of weakness and intermittent syncopal episodes. Rhythm strips show runs of SVT.

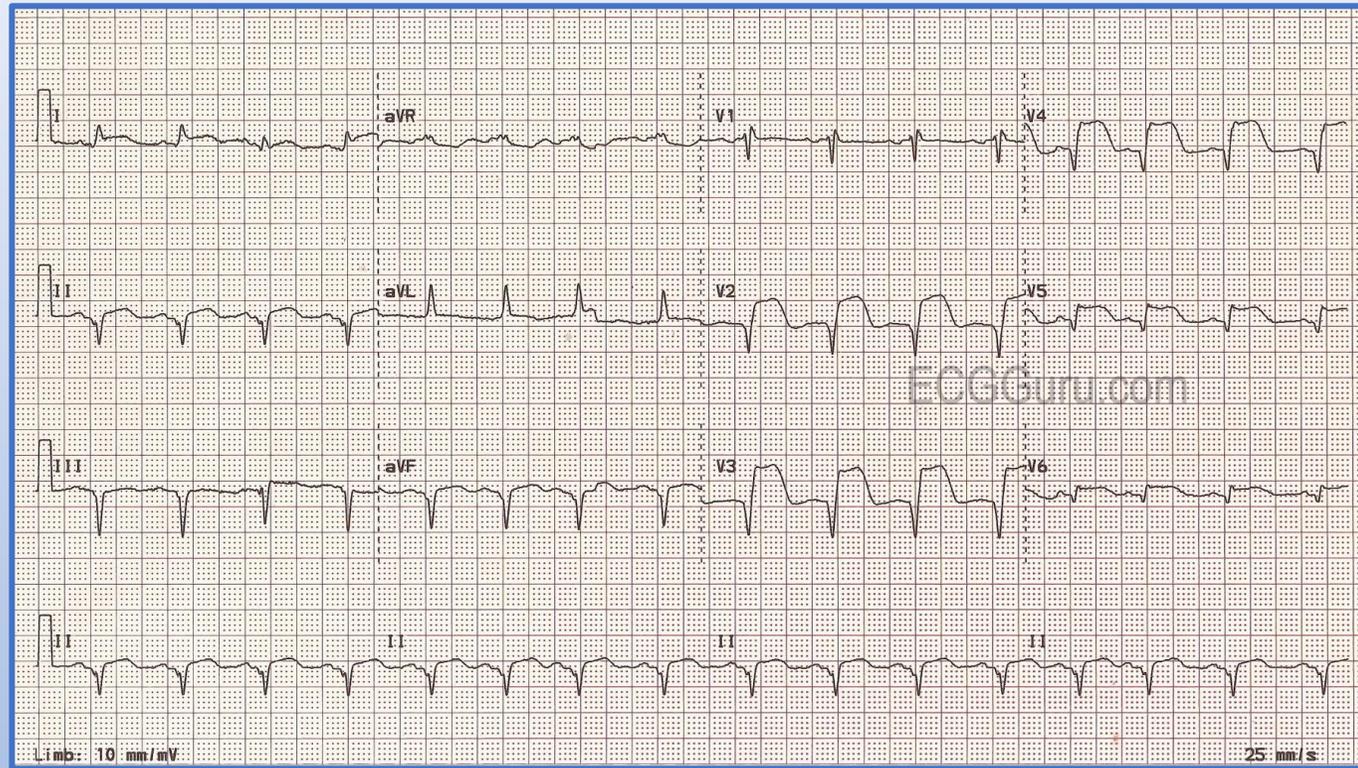
Rate: 105 bpm. PRI: 179 ms QRS duration: 149 ms. QRS axis: Abn. left



Sinus tachycardia. QRS wide, with rSR' pattern in V1 and wide little S waves in left-sided leads.
Sinus tachycardia with right bundle branch block and anterior fascicular block – bifascicular block.

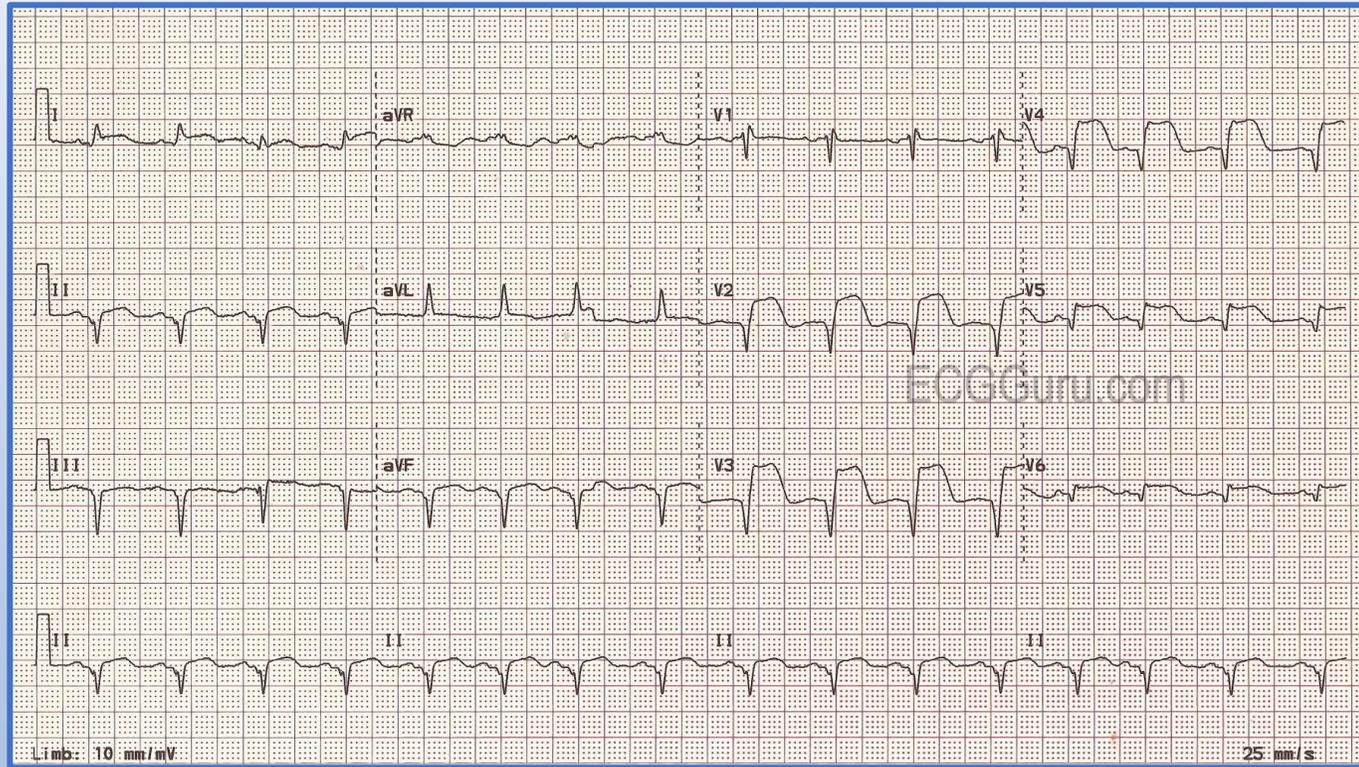
9. Elderly woman with severe chest pain. Extreme weakness and hypotension. Suffered cardiac arrest during cardiac cath. Expired in recovery area.

HR: 100 bpm PRI: 120 ms QRS duration: 84 ms Axis: left



9. Elderly woman with severe chest pain. Extreme weakness and hypotension. Suffered cardiac arrest during cardiac cath. Expired in recovery area.

HR: 100 bpm PRI: 120 ms QRS duration: 84 ms Axis: left



Sinus rhythm with occasional PACs. ST elevation I, aVL, V2-V6. Pathological Q waves II, III, aVF, V2 – V6. *Acute anterior-lateral occlusive M.I. and recent inferior wall OMI.*

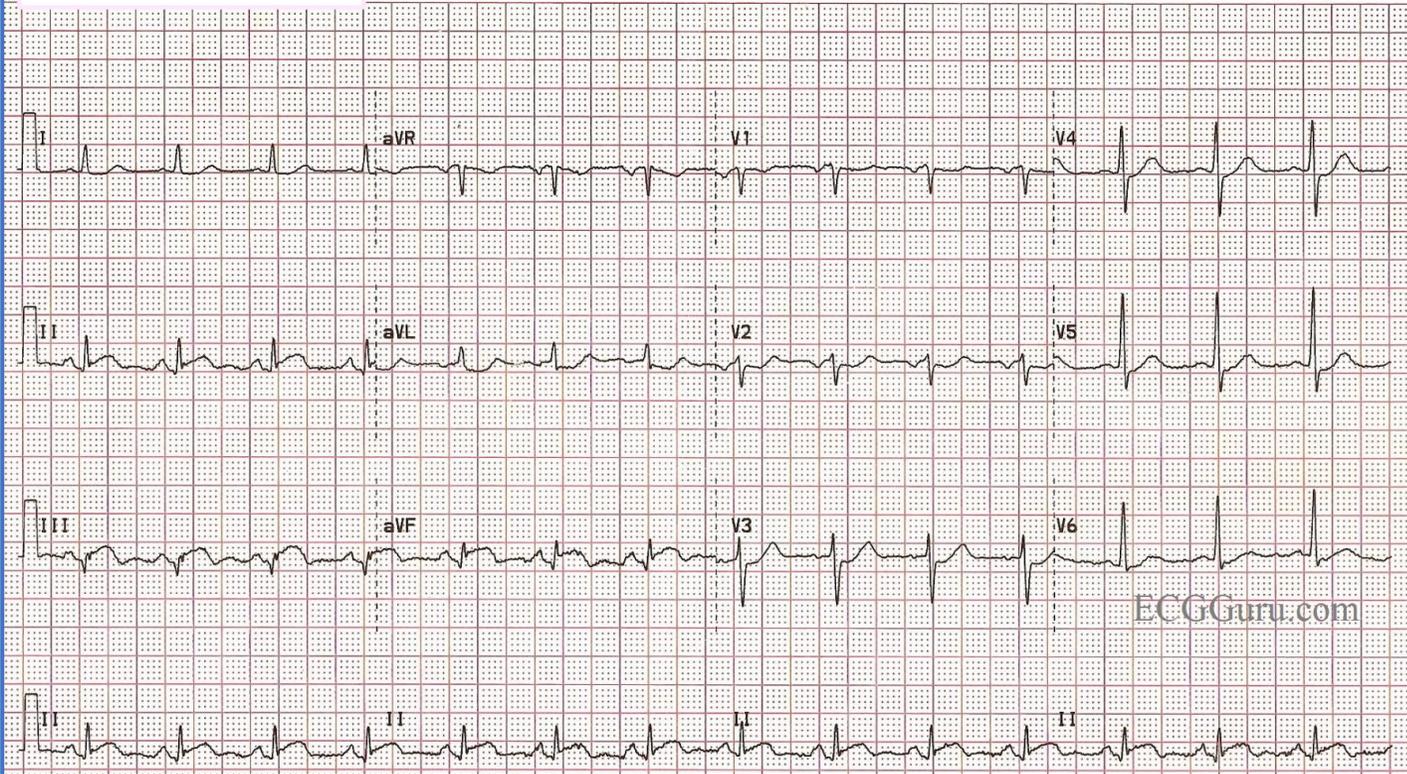
Pt was determined to have had inferior wall M.I. a few days prior. Spontaneously reperfused, but prox occlusion at bifurcation of LAD and Left Cx occurred.

10.

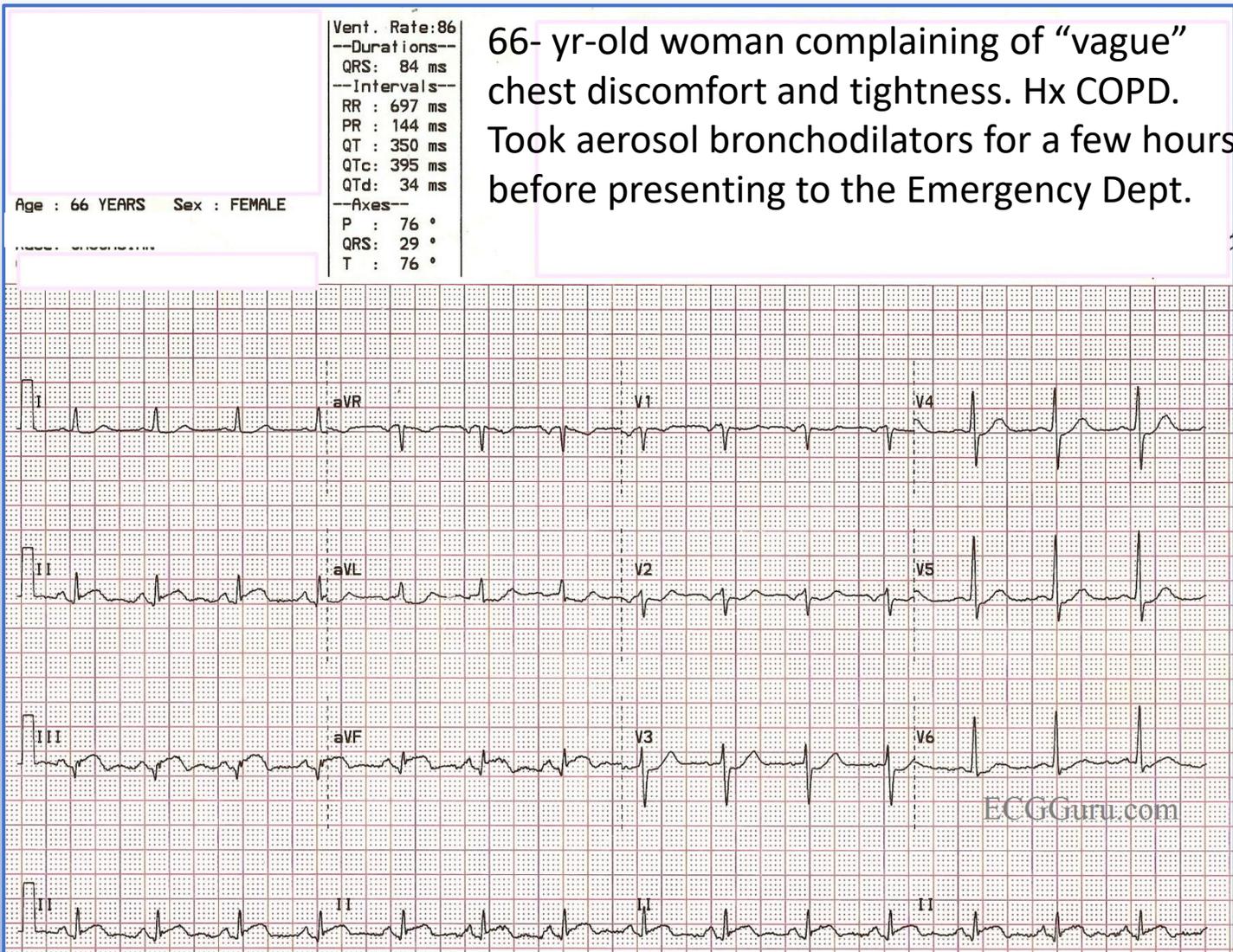
Vent. Rate: 86
--Durations--
QRS: 84 ms
--Intervals--
RR : 697 ms
PR : 144 ms
QT : 350 ms
QTc: 395 ms
QTd: 34 ms
--Axes--
P : 76 °
QRS: 29 °
T : 76 °

Age : 66 YEARS Sex : FEMALE

66- yr-old woman complaining of “vague” chest discomfort and tightness. Hx COPD. Took aerosol bronchodilators for a few hours before presenting to the Emergency Dept.

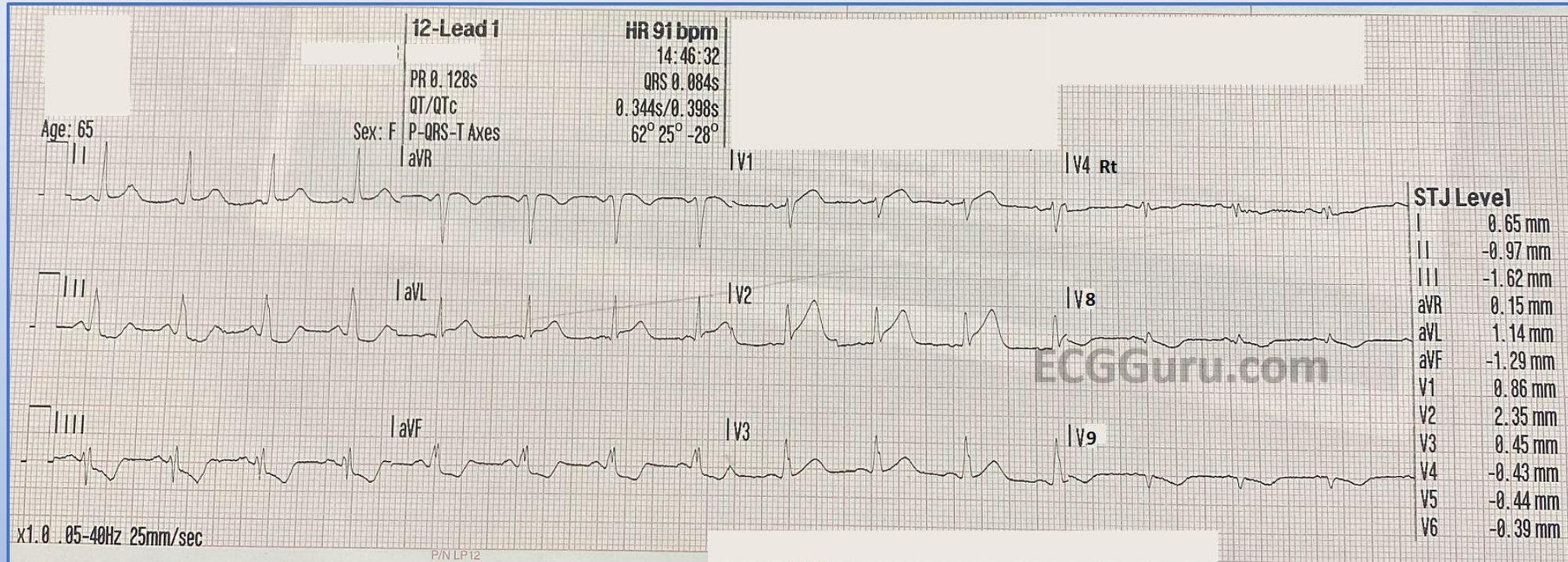


10.

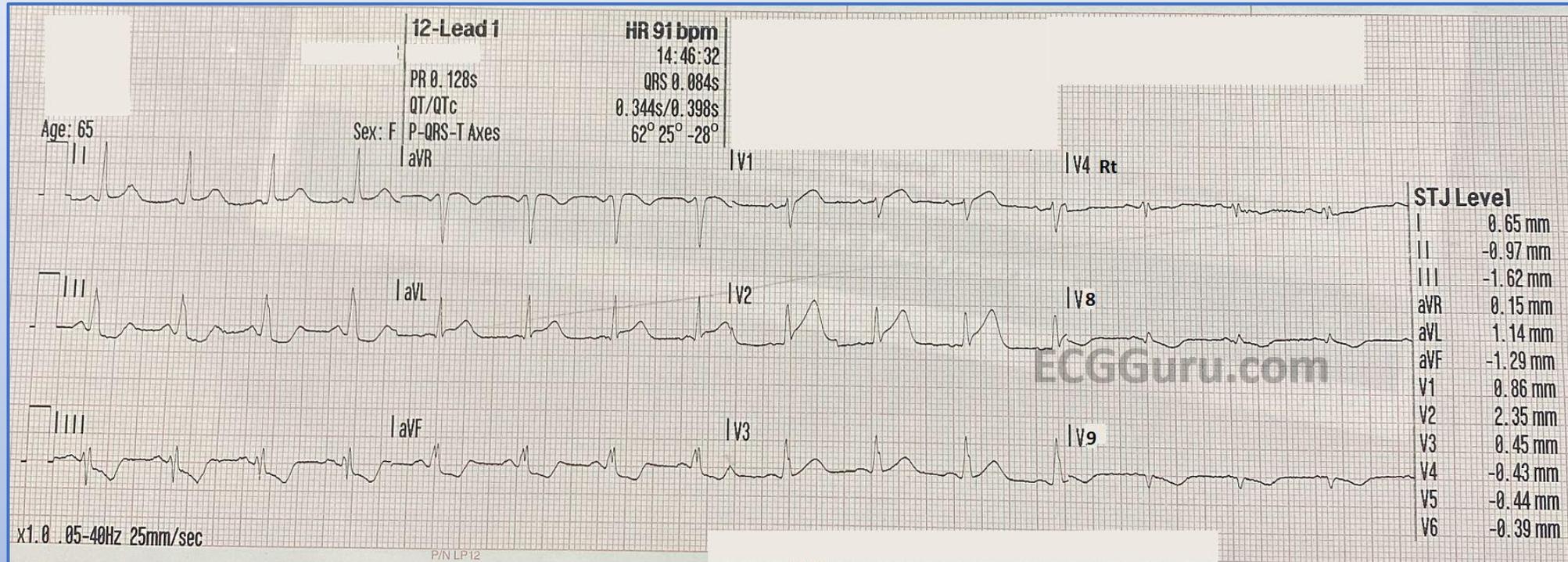


Normal sinus rhythm with ST elevation Leads II, III, aVF. Reciprocal ST depression aVL and anterior leads. *Inferior-posterior acute occlusive M.I.*

11. 65-yr-old man complaining of chest pain, shortness of breath, lightheadedness, and weakness. Suffered a V Fib cardiac arrest during treatment.

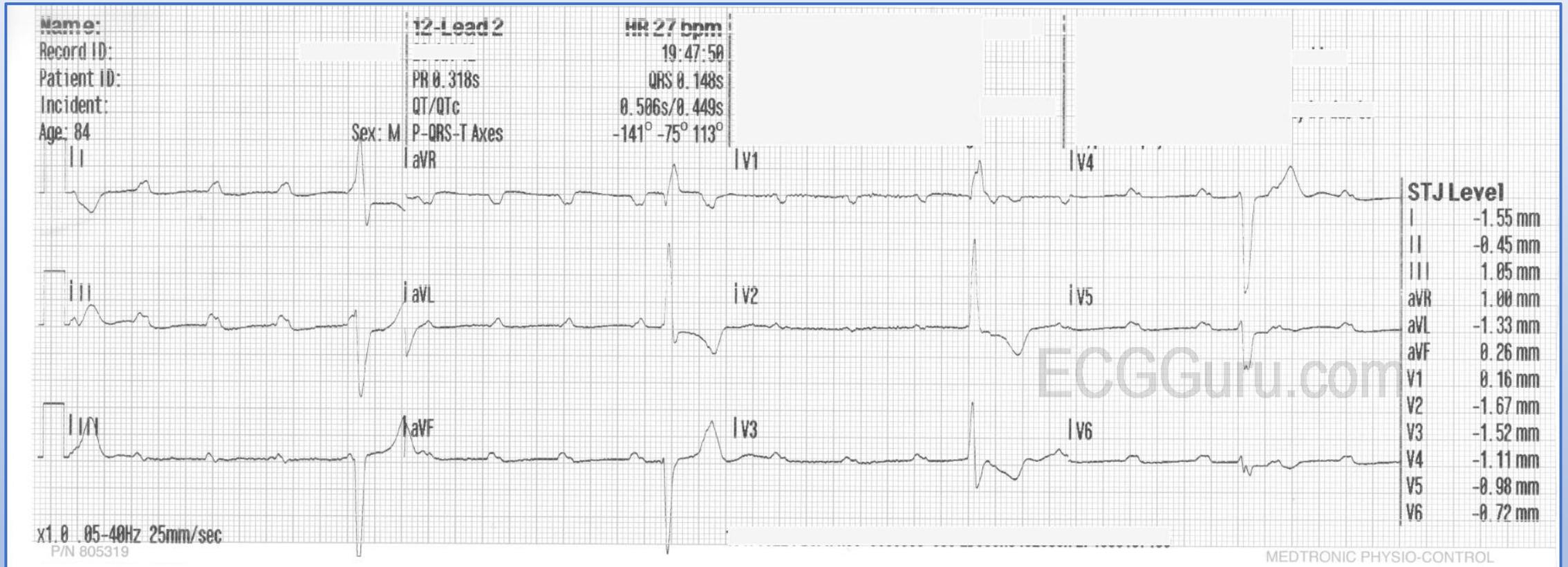


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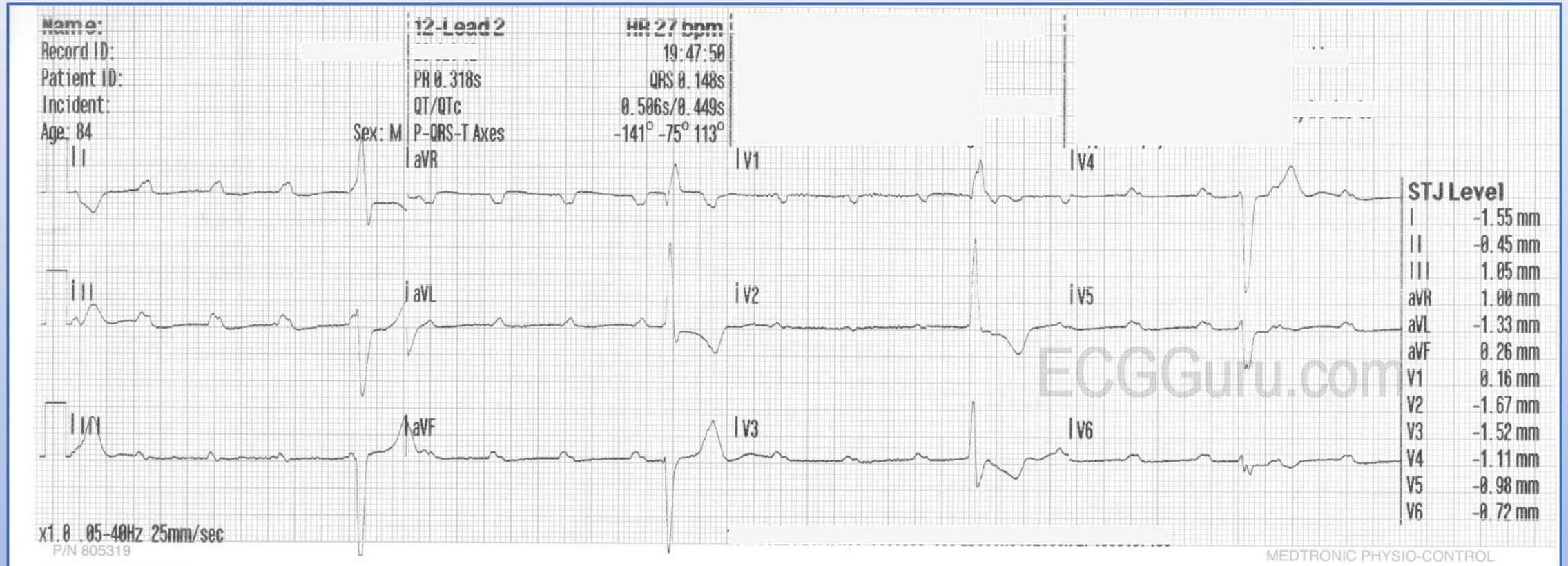


Normal sinus rhythm. ST elevation V1 – V3, I and aVL.
Reciprocal ST depression inferior wall. Poor R wave progression, possible incorrect electrode placement. *Acute anterior-lateral occlusive M.I.*

12. 84-yr-old man complaining of weakness and near-syncope.



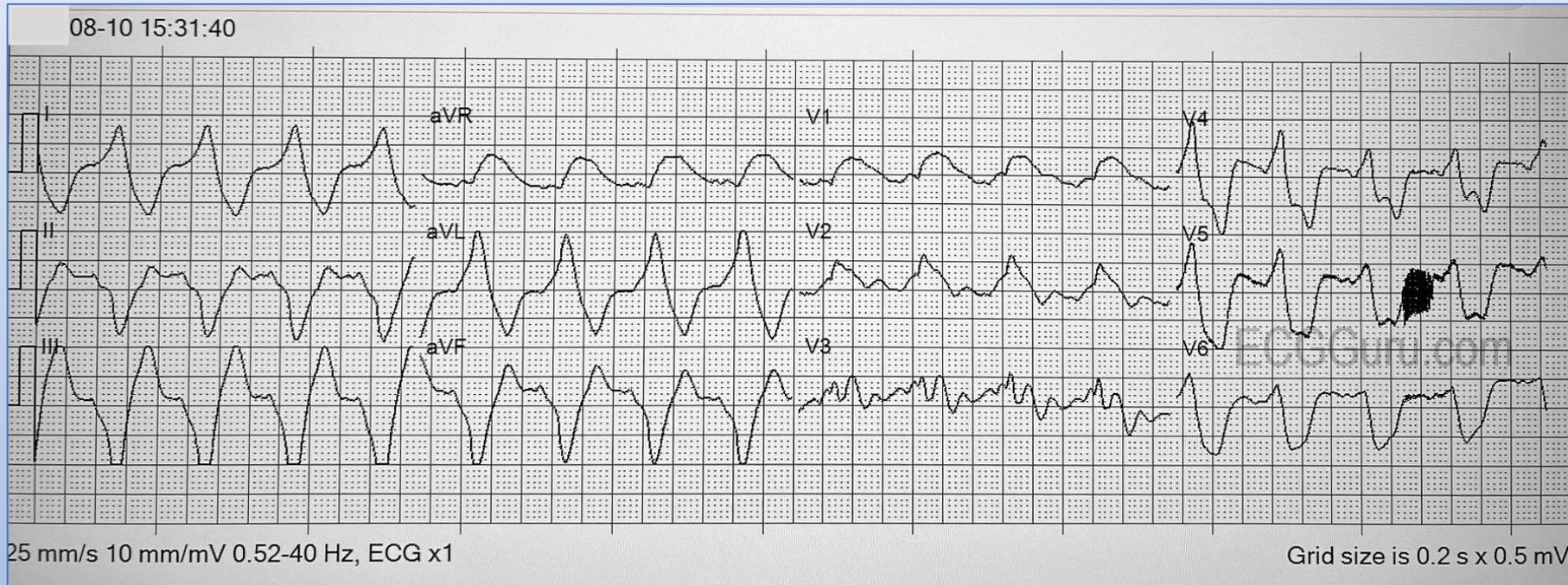
12. 84-yr-old man complaining of weakness and near-syncope.



Atrial rate: 116 bpm. Ventricular rate: 27 bpm. PRI: N/A QRS duration: 148 ms
Sinus tach with third-degree AV block and ventricular escape rhythm.

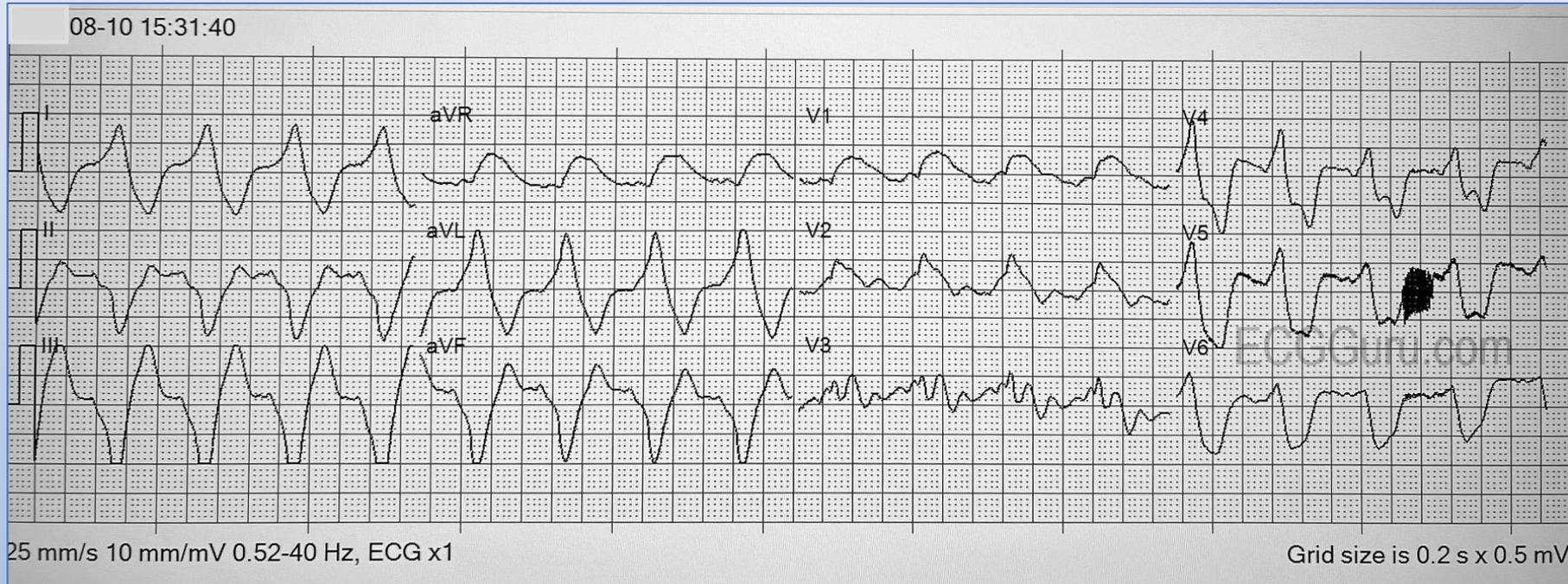
13. 48-yr-old woman complaining of severe back pain and limb numbness.
States she missed her dialysis appointment due to the pain.

HR: 104 bpm QRS duration: 280 ms PRI: 106 ms QRS Axis: Left



13. 48-yr-old woman complaining of severe back pain and limb numbness.
States she missed her dialysis appointment due to the pain.

HR: 104 bpm QRS duration: 280 ms PRI: 106 ms QRS Axis: Left



Sinus tachycardia with very wide QRS complexes. Labs revealed high serum potassium.
Really wide-complex tachycardia.

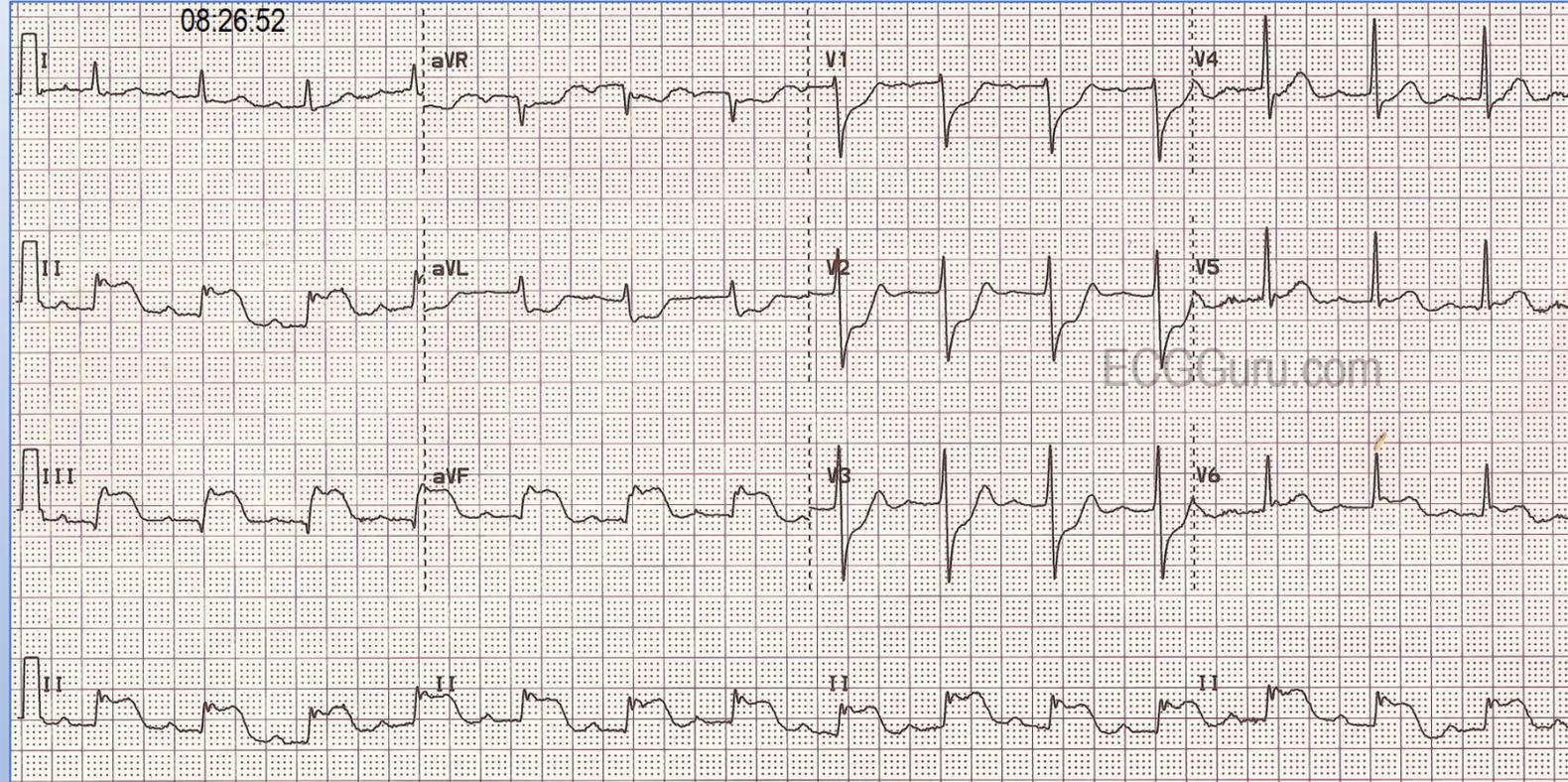
14. Man in his 60's complaining of severe, substernal chest pain.

HR: 87 bpm

QRS Duration: 93 ms

PRI: 249 ms

QRS axis: Normal



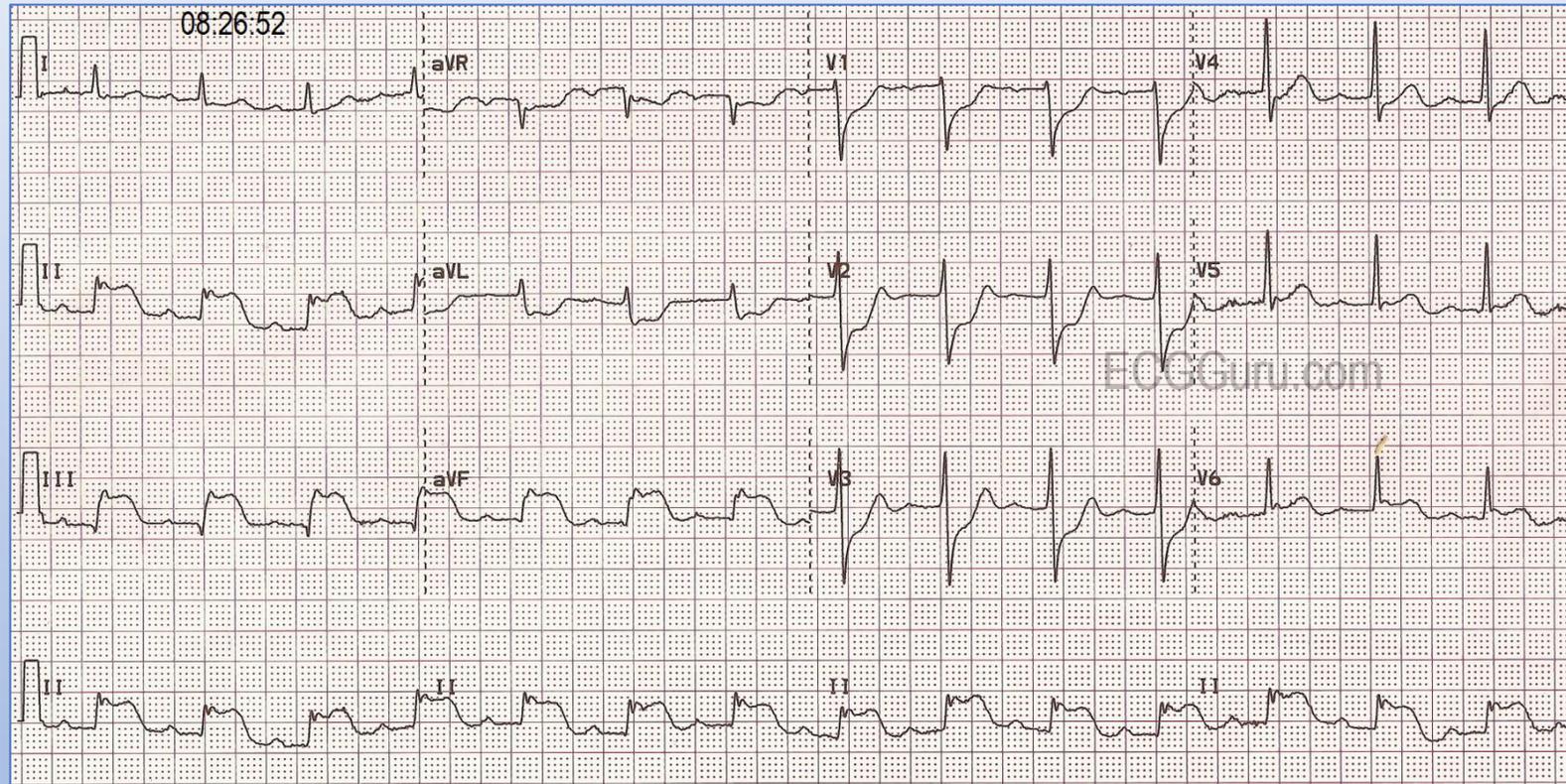
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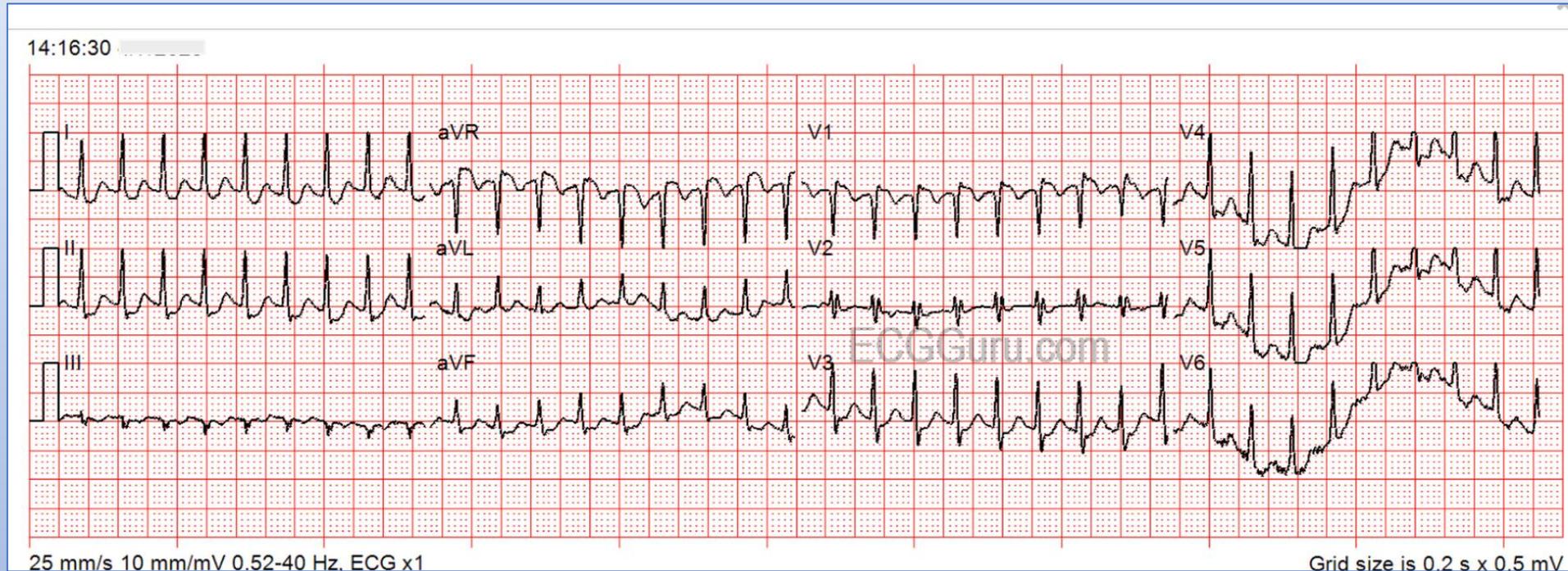
Normal sinus rhythm with first-degree AV block (prolonged PRI).

ST elevation Leads II, III, aVF, V6. Reciprocal ST depression Leads I, aVL, V1, V2, V3, V4.

Acute occlusive M.I. inferior-posterior wall.

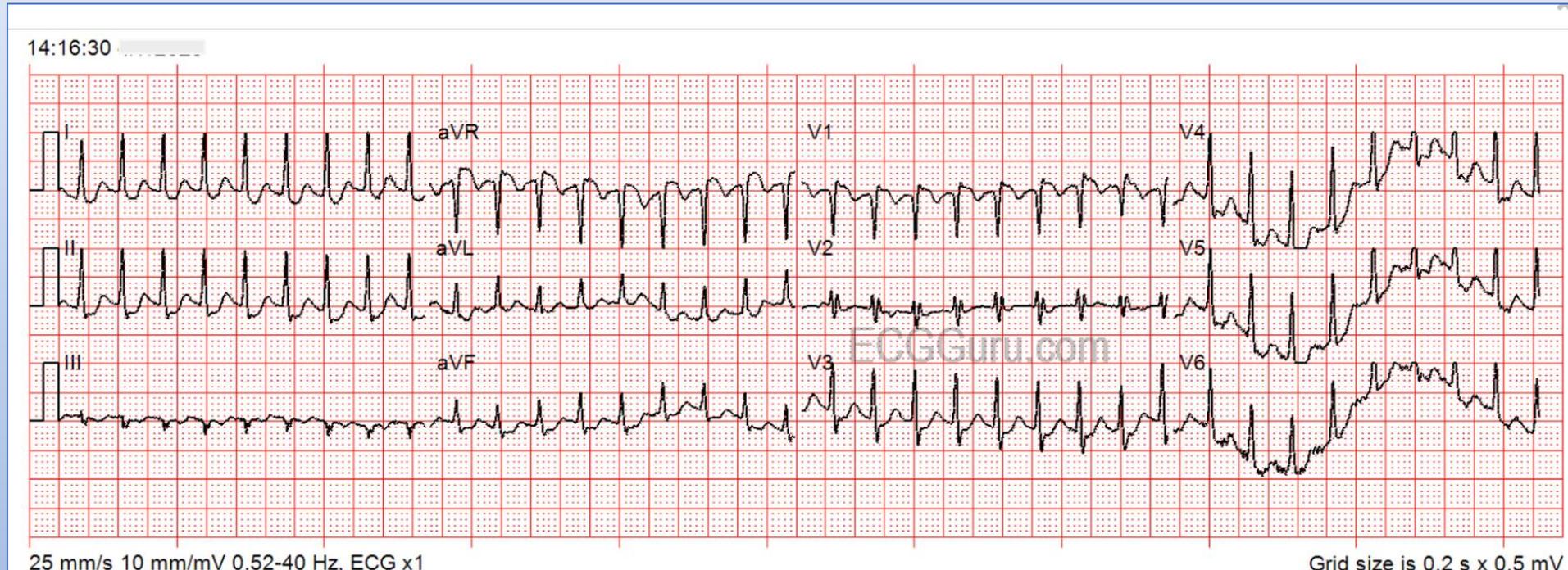
15. 43-yr-old woman complaining of palpitations, weakness and dizziness. No known medical history.

HR: 214 bpm QRS duration: 67 ms QRS axis: Normal leftward



15. 43-yr-old woman complaining of palpitations, weakness and dizziness. No known medical history.

HR: 214 bpm QRS duration: 67 ms QRS axis: Normal leftward

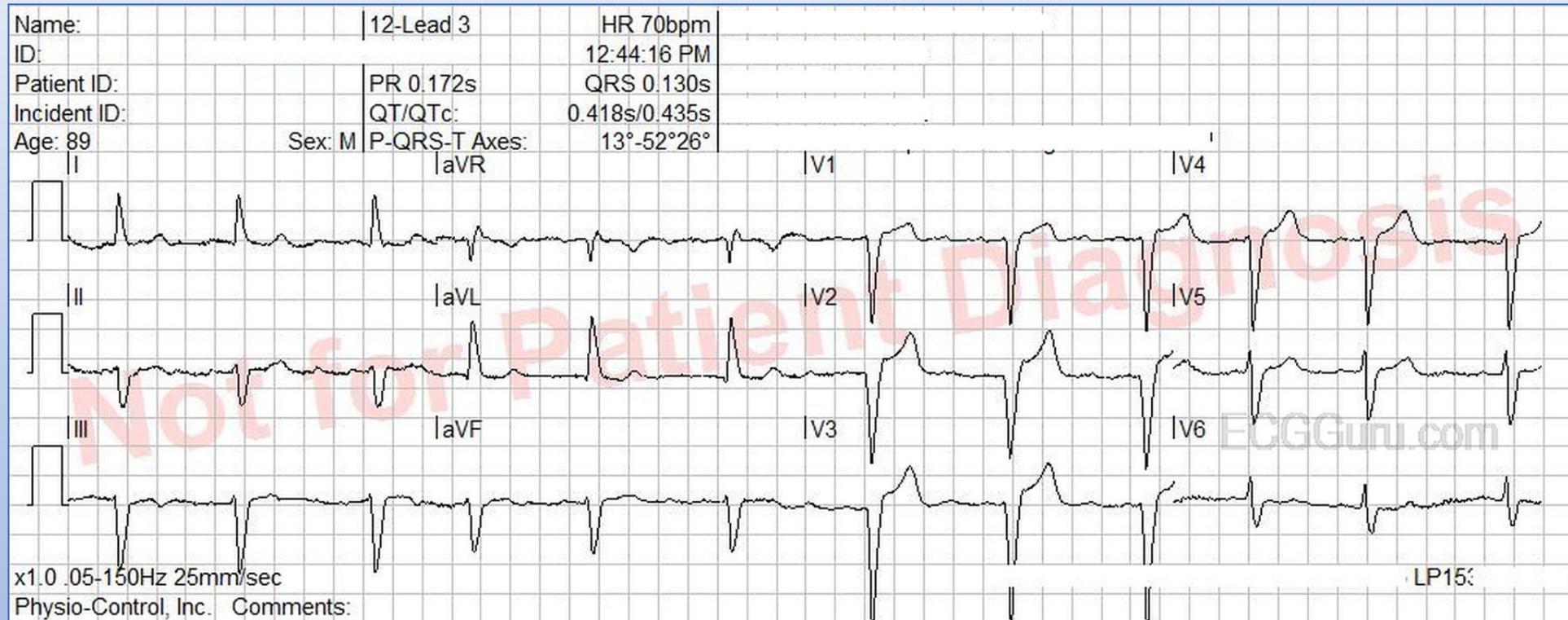


Narrow-complex rhythm, regular at 214 bpm. P on T. Baseline artifact left chest leads.

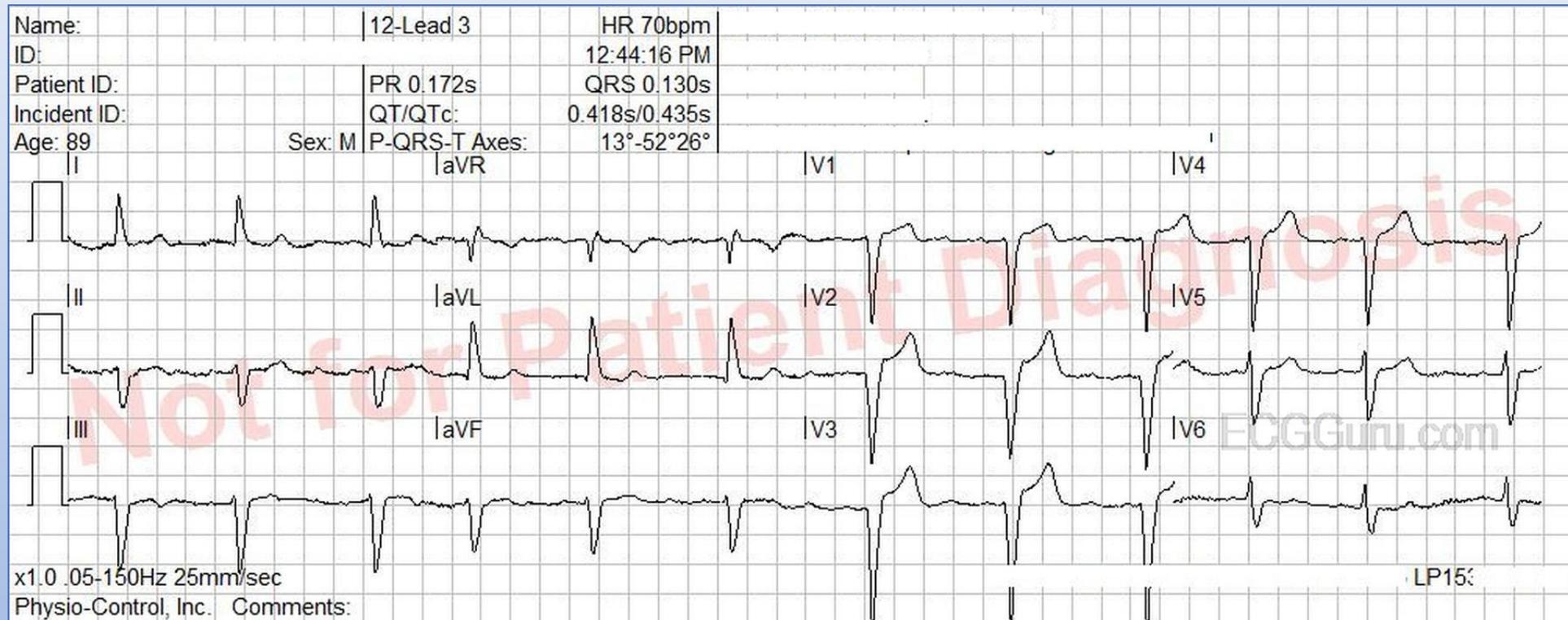
Supraventricular tachycardia.

Converted with one dose of adenosine.

16. 89-yr-old man states he tripped and fell. Has head laceration. A&O, denies loss of consciousness.



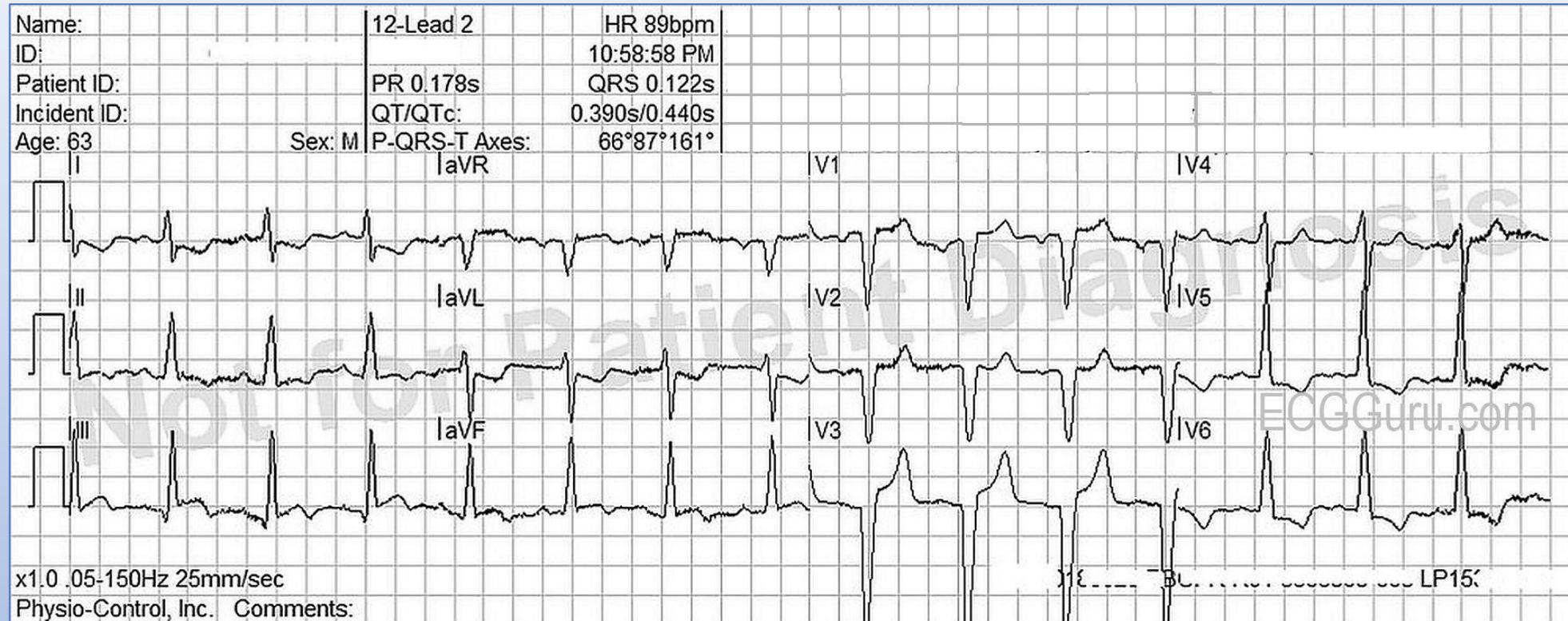
16. 89-yr-old man states he tripped and fell. Has head laceration. A&O, denies loss of consciousness.



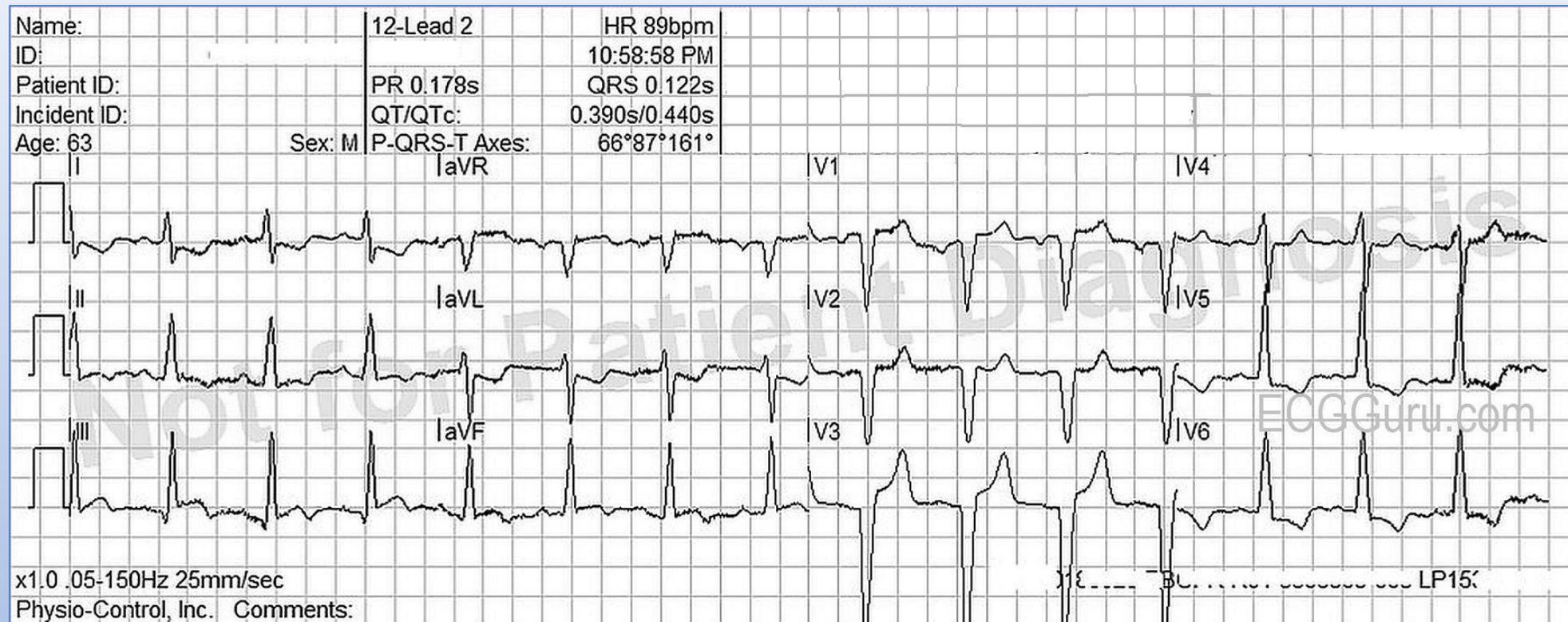
Normal sinus rhythm with wide QRS. Negative in V1, positive in Lead I, with discordant T waves. Late transition in chest leads, or electrode misplacement.

NSR with left bundle branch block.

17. 63-yr-old man complaining of chest pain and nausea.



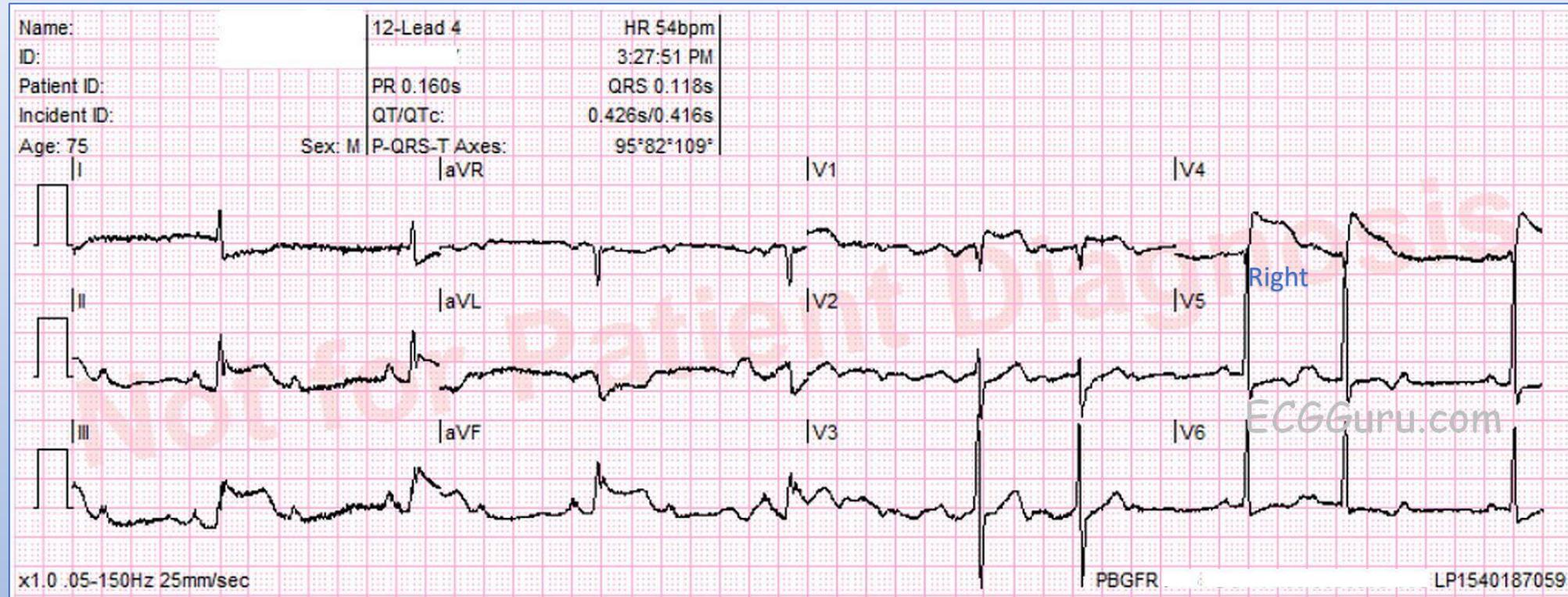
17. 63-yr-old man complaining of chest pain and nausea.



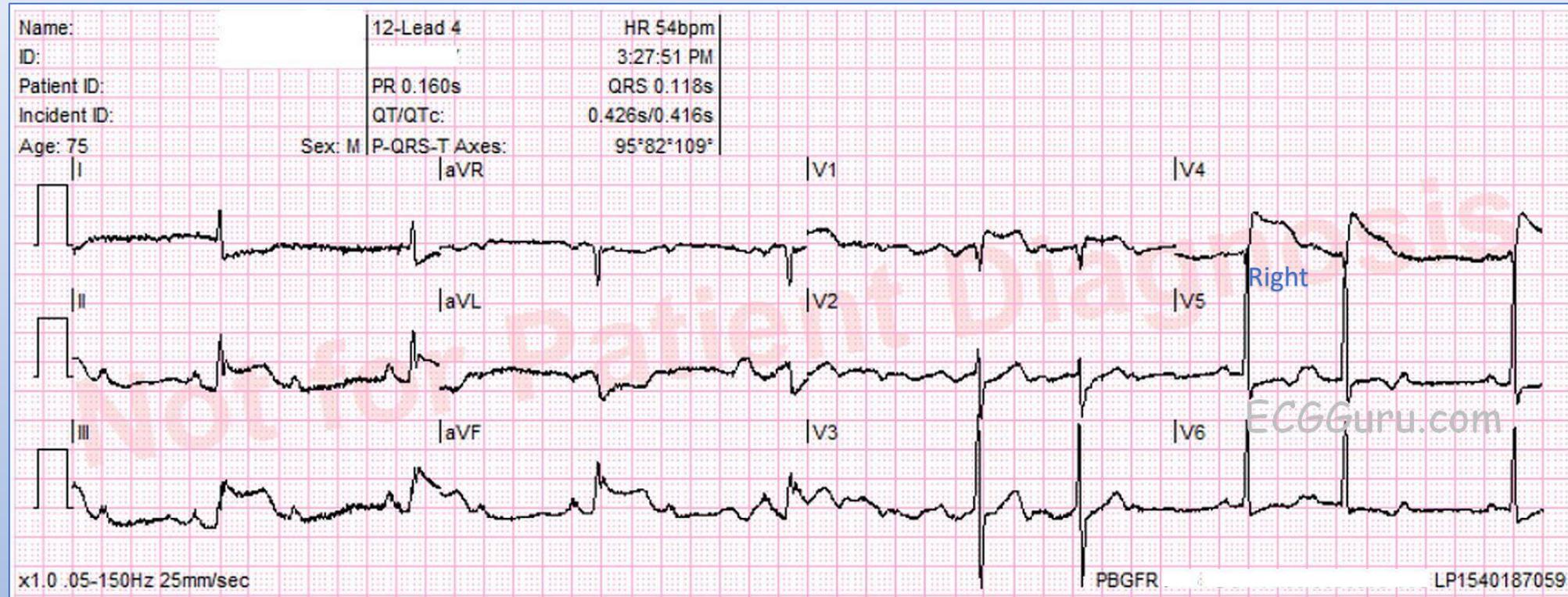
Normal sinus rhythm. QRS wide with negative V1 and positive Leads I and V6.

Discordant ST-T wave changes in anterior leads. Concordant ST elevation in Leads II, III, & aVF. *Acute inferior wall occlusive M.I. with left bundle branch block.*

18. 75-year-old man with severe chest pain, nausea, & diaphoresis. This ECG has V4 right in place of standard V4.

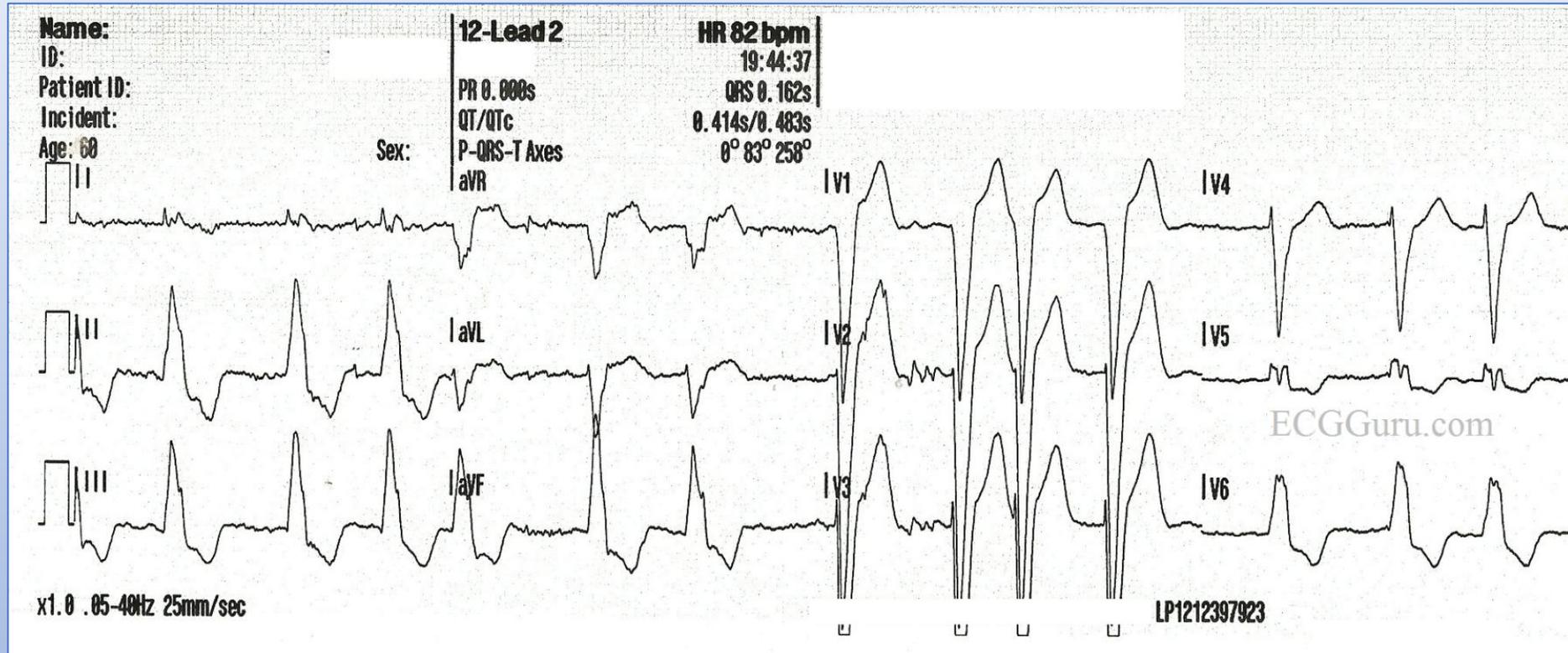


18. 75-year-old man with severe chest pain, nausea, & diaphoresis. This ECG has V4 right in place of standard V4.



Atrial rate 108, ventricular rate 54. PRI 160 ms. QRS 80 ms (disagree with computer). ST elevation II, III, aVF, V1 and V4 Right. Reciprocal ST depression Leads I and aVL. Sinus tach with 2:1 AV block, inferior occlusive M.I. and right ventricular M.I.

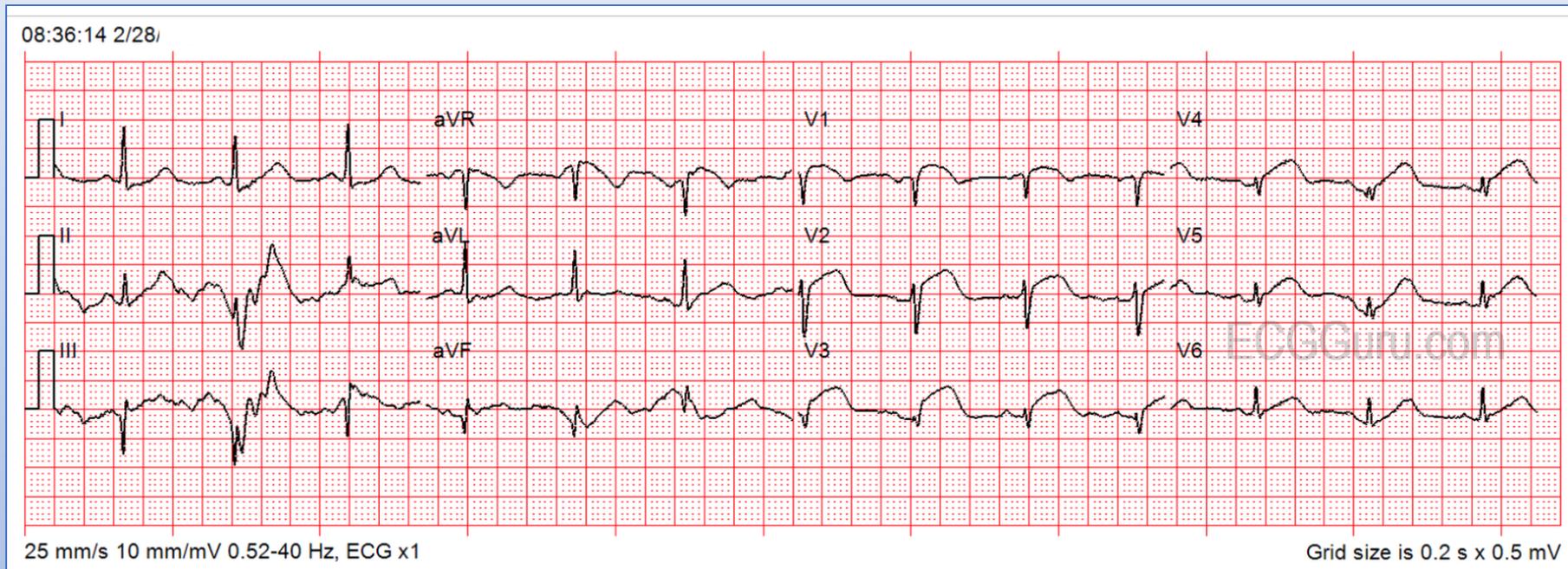
19. 60-yr-old woman with shortness of breath and bibasilar rales.



Irregularly-irregular rhythm at approximately 80 bpm. No P waves. QRS wide at 162 ms. QRS negative in V1 and and positive in Leads I and V6. The axis is normal but slightly rightward. (vertical). Atrial fibrillation with left bundle branch block.

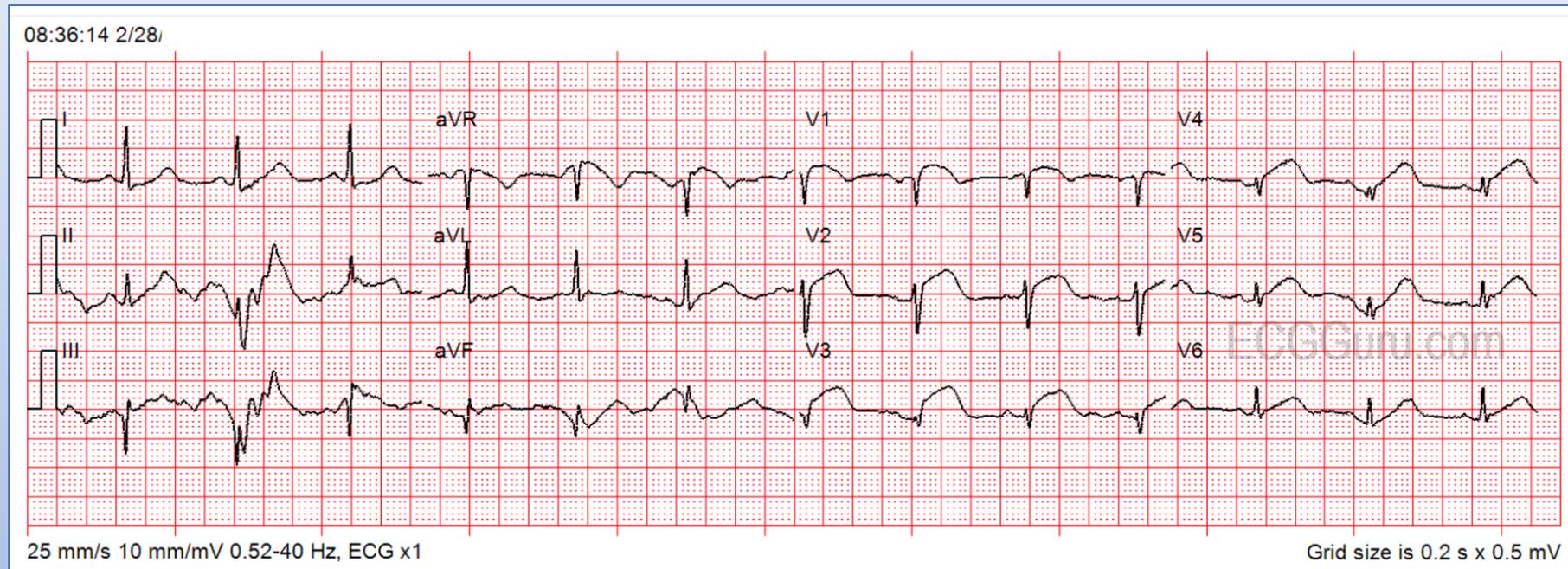
20. 65-yr-old woman complaining of “heartburn and sweating”.
Past medical Hx of multiple M.I.s and atrial fibrillation.

HR: 90 bpm PRI: 78 ms QRS duration: 72 ms QRS axis: Normal leftward



20. 65-yr-old woman complaining of “heartburn and sweating”.
Past medical Hx of multiple M.I.s and atrial fibrillation.

HR: 90 bpm PRI: 78 ms QRS duration: 72 ms QRS axis: Normal leftward



Normal sinus rhythm. ST elevation V1 – V4, with abnormal ST shape V5-V6.

Artifact in inferior leads.

Acute anterior occlusive M.I.

Cath revealed 100% occlusion of left anterior descending coronary artery.



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