Lucas County EMS Continuing Education
March 2009

12-Lead ECG Review

LUCAS COUNTY

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February 17, 2009

TO: **ALL LUCAS COUNTY PARAMEDICS**

FROM: Brent Parquette, NREMT-P
Lucas County EMS Continuing Education Administrator

RE: Continuing Education – **March 2009**

In the month of March we will once again review the ***"12-Lead ECG in the setting of ACS."*** Classes will involve a review of "interpretive" skills as well as hands-on stations for acquisition and transmission. I have included, for your review, ten 12-Lead ECG tracings for you to interpret before you attend class. These tracings will serve as a basis for discussion during one of the breakout sessions.

Review questions have also been supplied for you to "test" your 12-Lead knowledge. The questions will be reviewed, and answers provided at each of the training classes in March.

For National Registry re-registrants –

Please remember to bring your completed registry forms with you to class so that I may review them for completeness and accuracy.

As always, if you have any questions or comments, please feel free to contact me at 419-213-6508.

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Lucas County EMS Continuing Education
March 2009

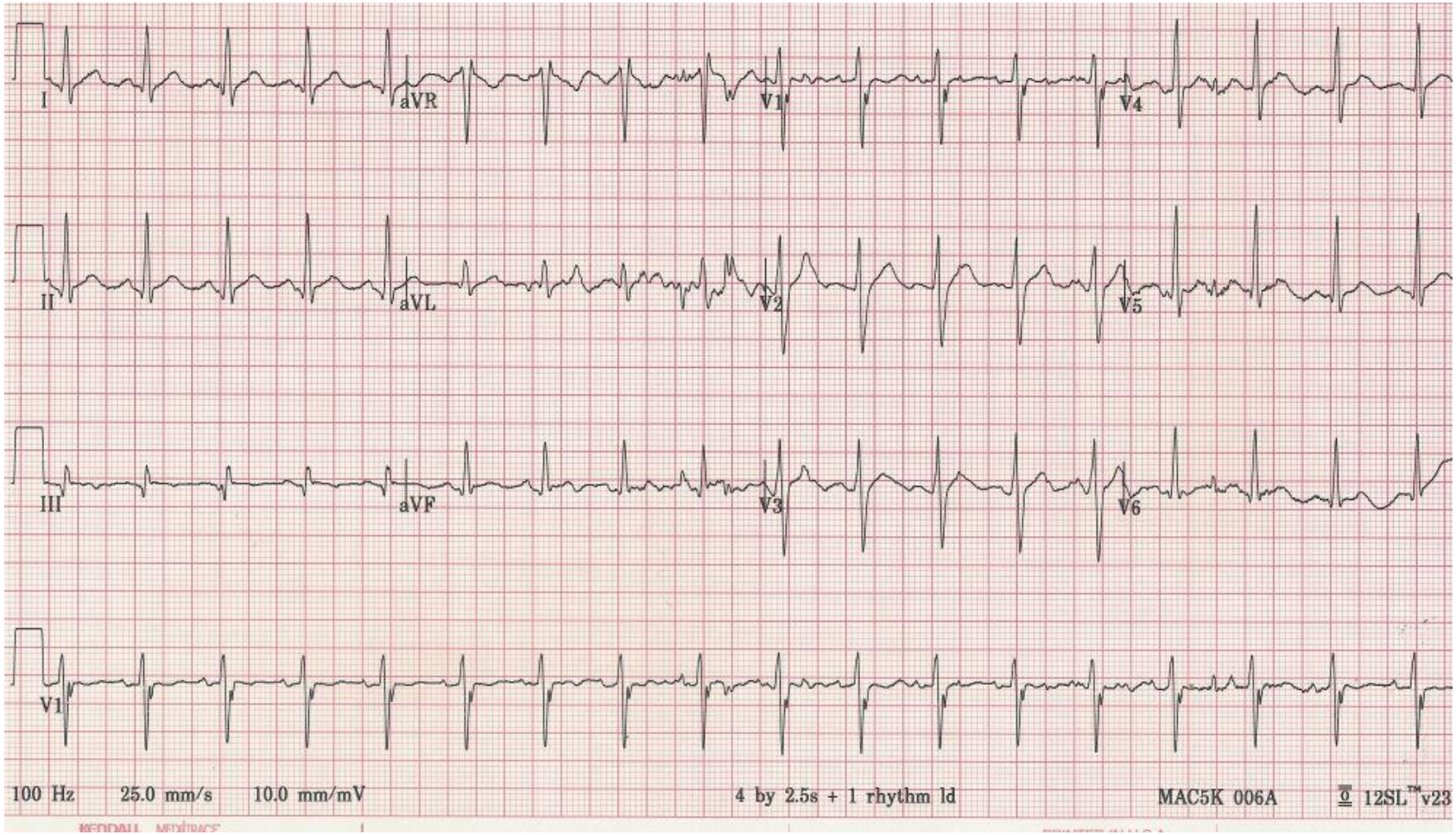
Agenda

20 minutes	Announcements / Pediatric Protocol Test Review
60 minutes	12-Lead ECG in ACS "A Review"
15 minutes	BREAK
2 Hours 5 minutes	Skill Stations (25 minutes each): • 12-Lead Transmission • ECG Rhythm Interpretation / Cardiac Algorithms • 12-Lead Acquisition / LP 12 Data Entry • ACS Scenario • 12-Lead Interpretation
20 minutes	Recap / Review / Evaluations / Peds Protocol Re-Test

March CE – Class Schedule

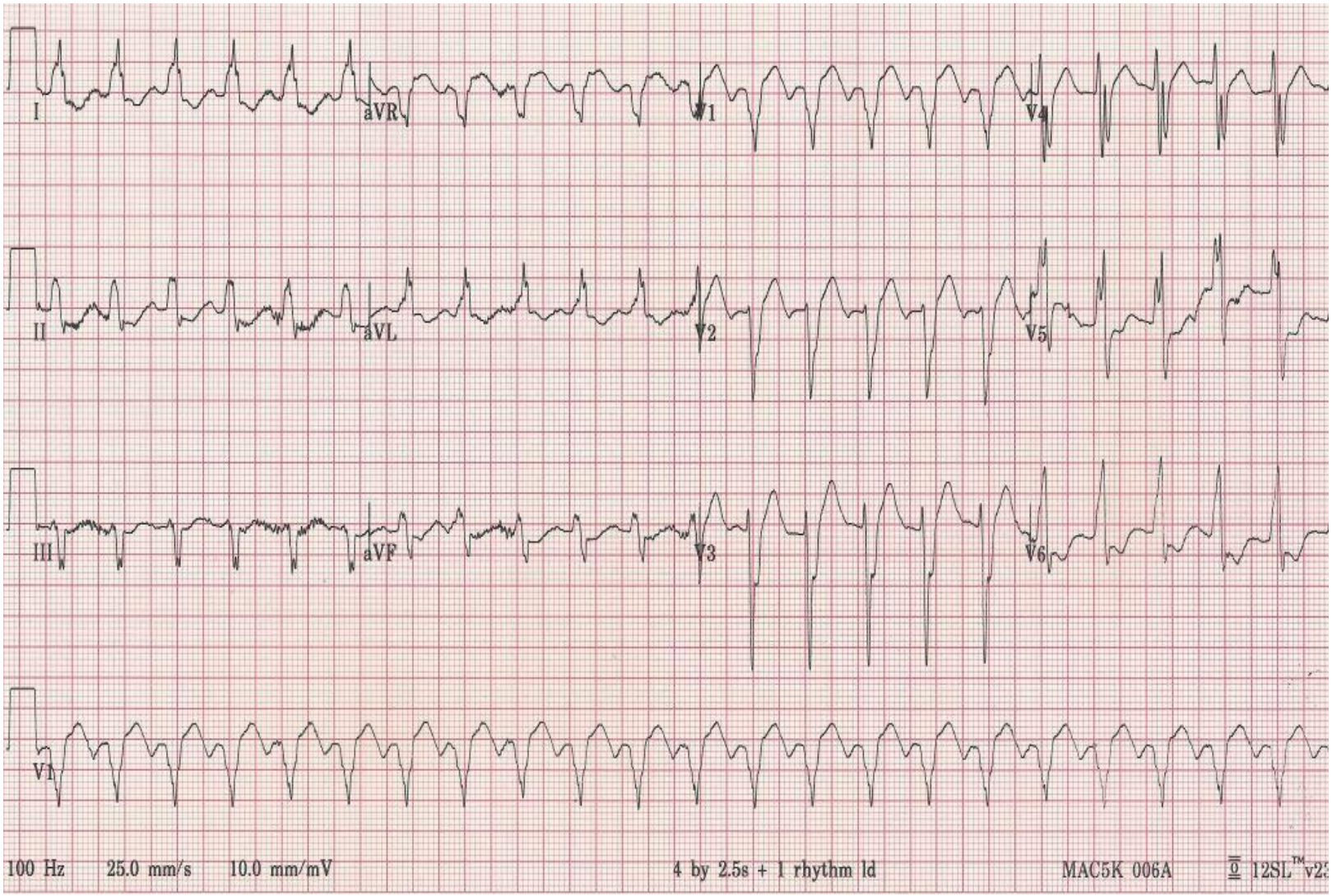
Date	Time	Shift
March 3, 2009 (Tues)	1800 – 2200	B
March 4, 2009 (Wed)	1300 – 1700	C
March 5, 2009 (Thurs)	0900 – 1300	A
March 10, 2009 (Tues)	1800 – 2200	C
March 11, 2009 (Wed)	1300 – 1700	A
March 12, 2009 (Thurs)	0900 – 1300	B
March 17, 2009 (Tues)	1300 – 1700	A
March 18, 2009 (Wed)	0900 – 1300	B

12-Lead #1



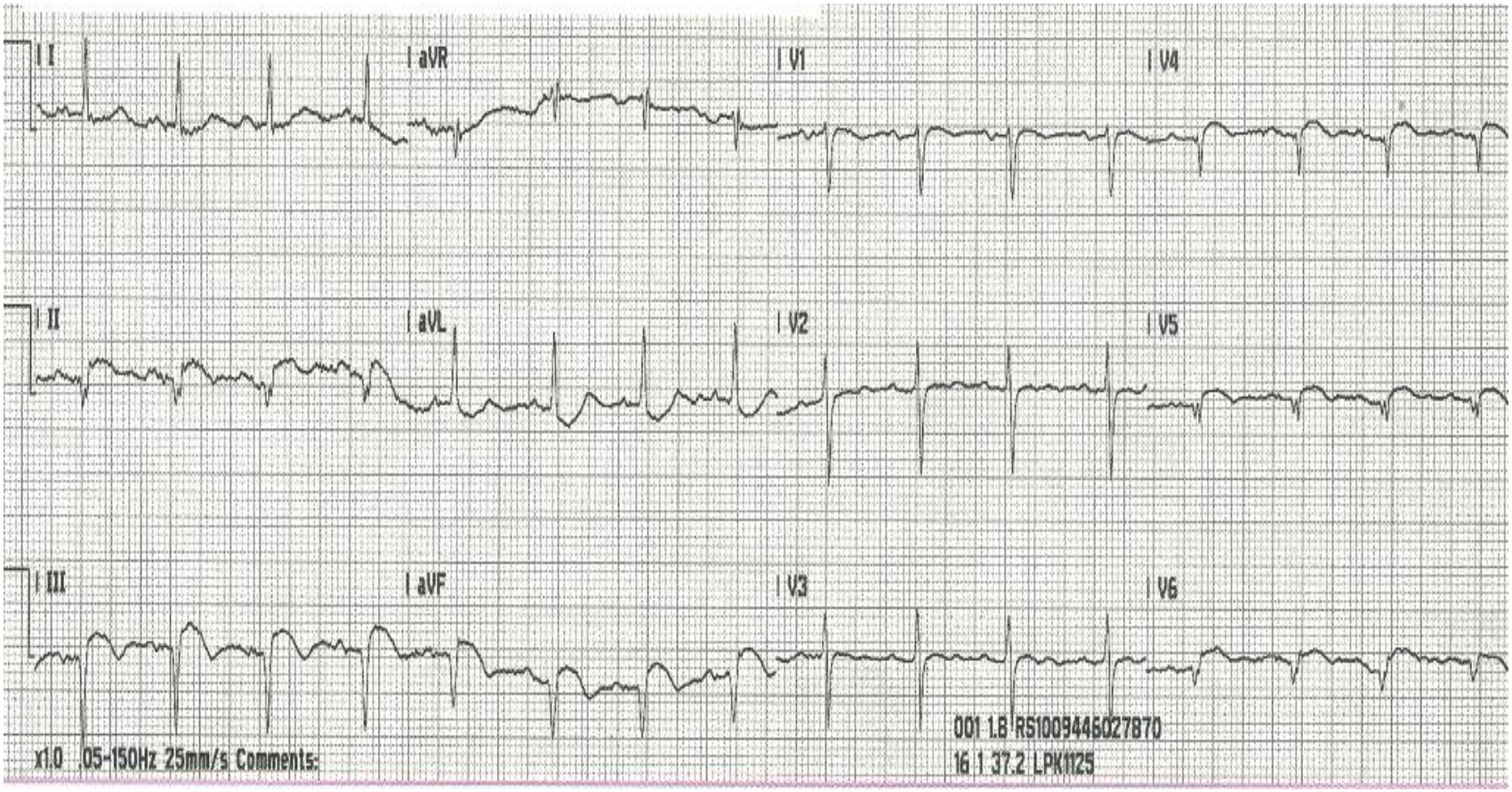
Interpretation: _____

12-Lead #2



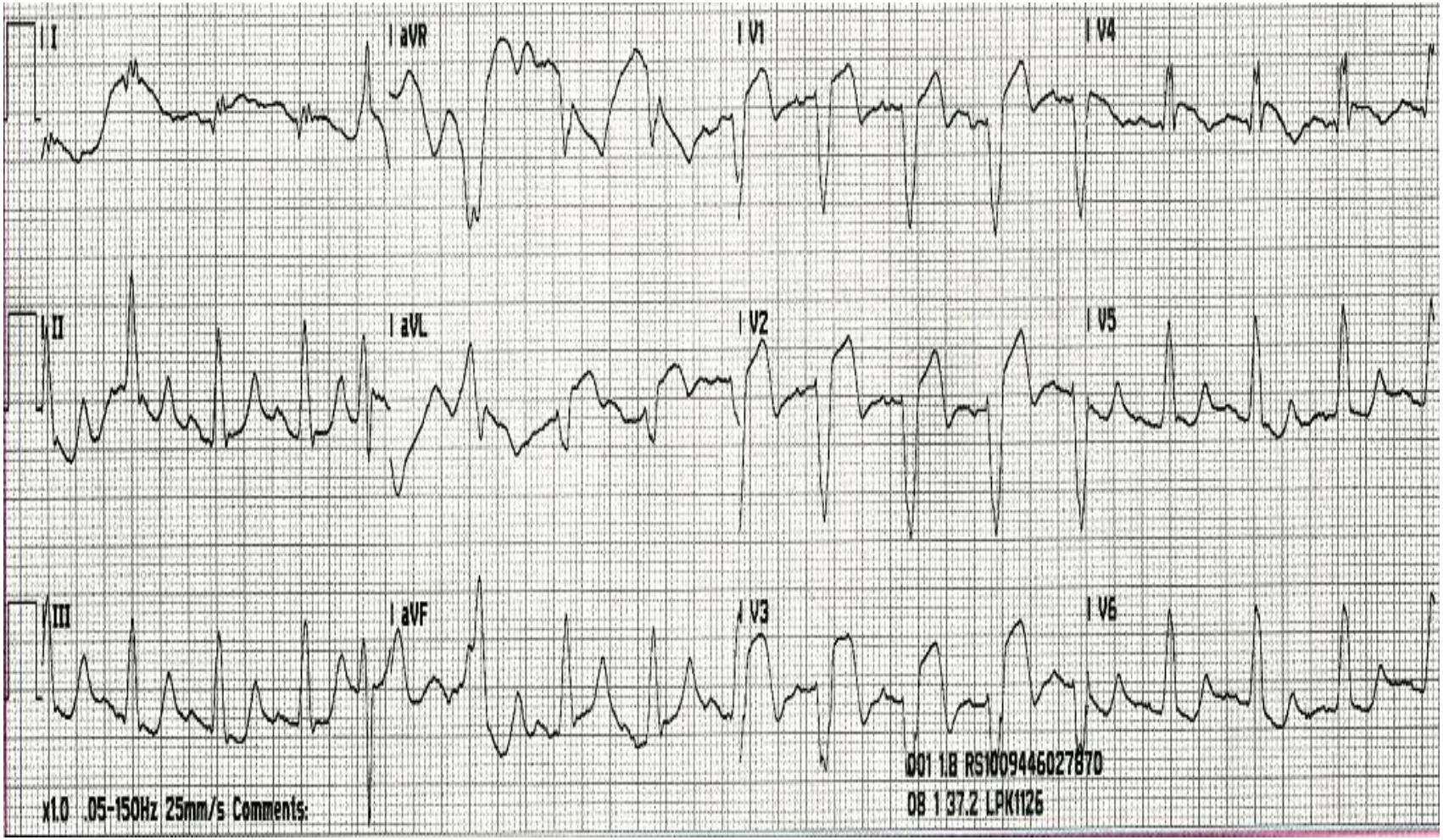
Interpretation: _____

12-Lead #3



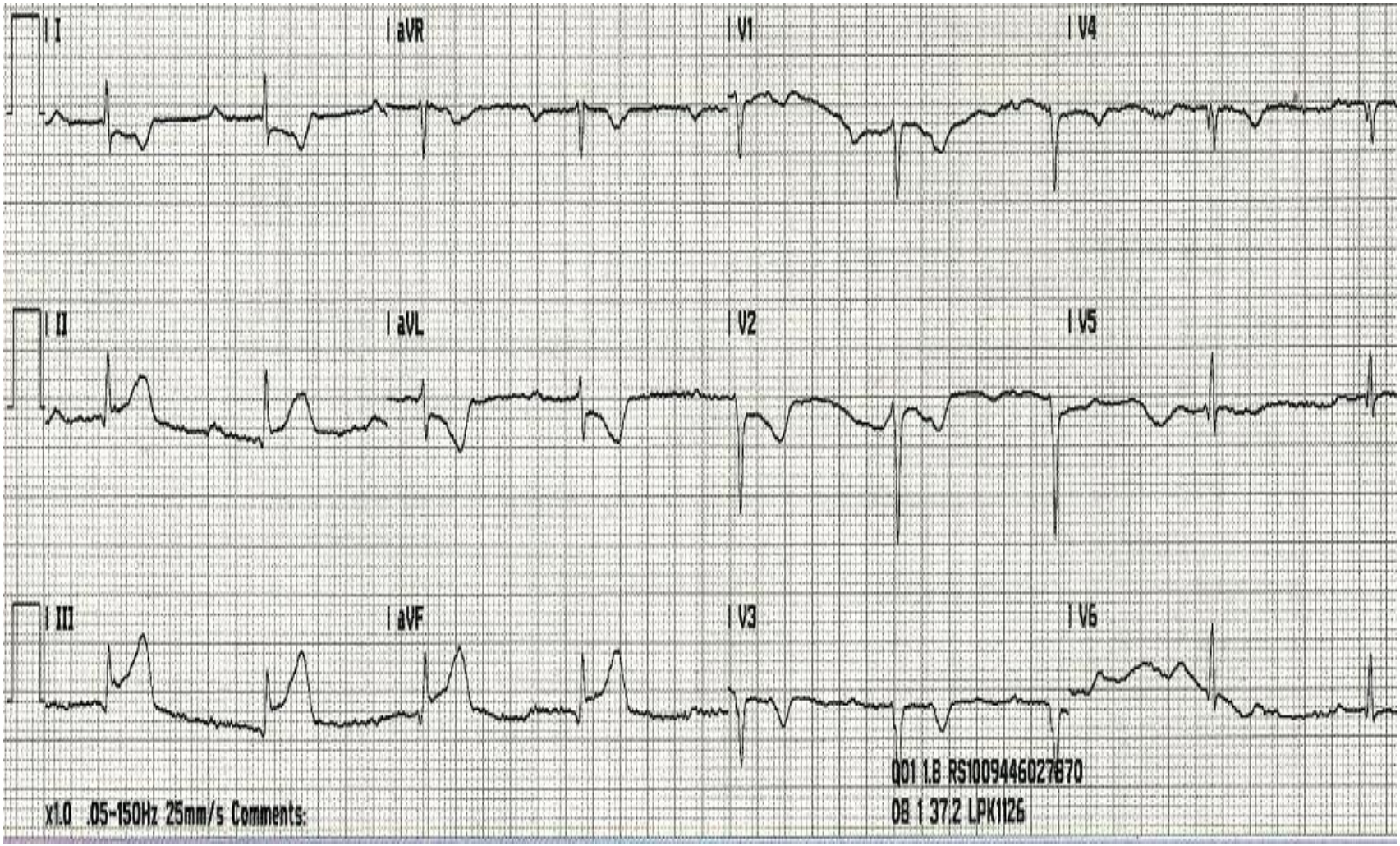
Interpretation: _____

12-Lead #4



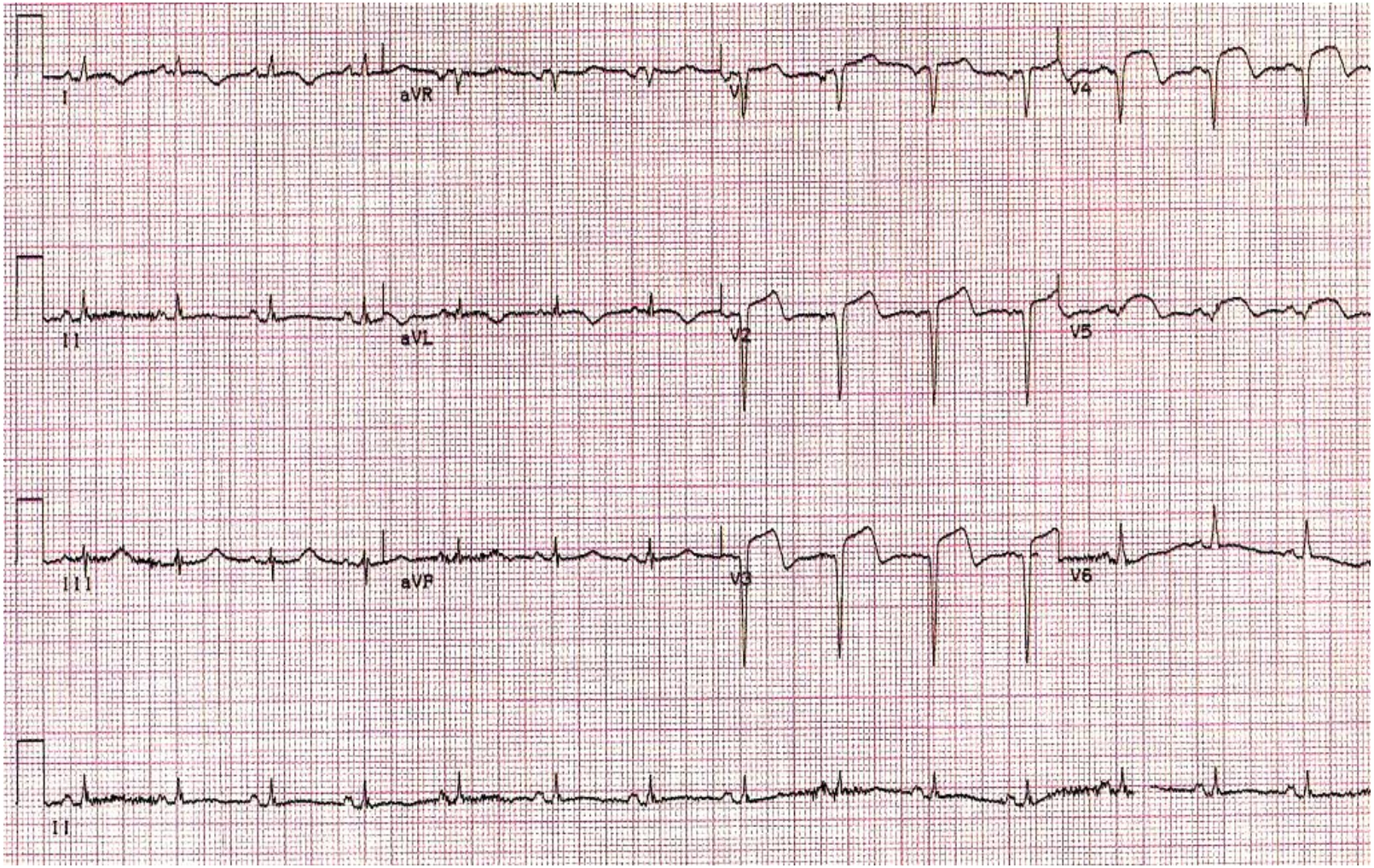
Interpretation: _____

12-Lead #5



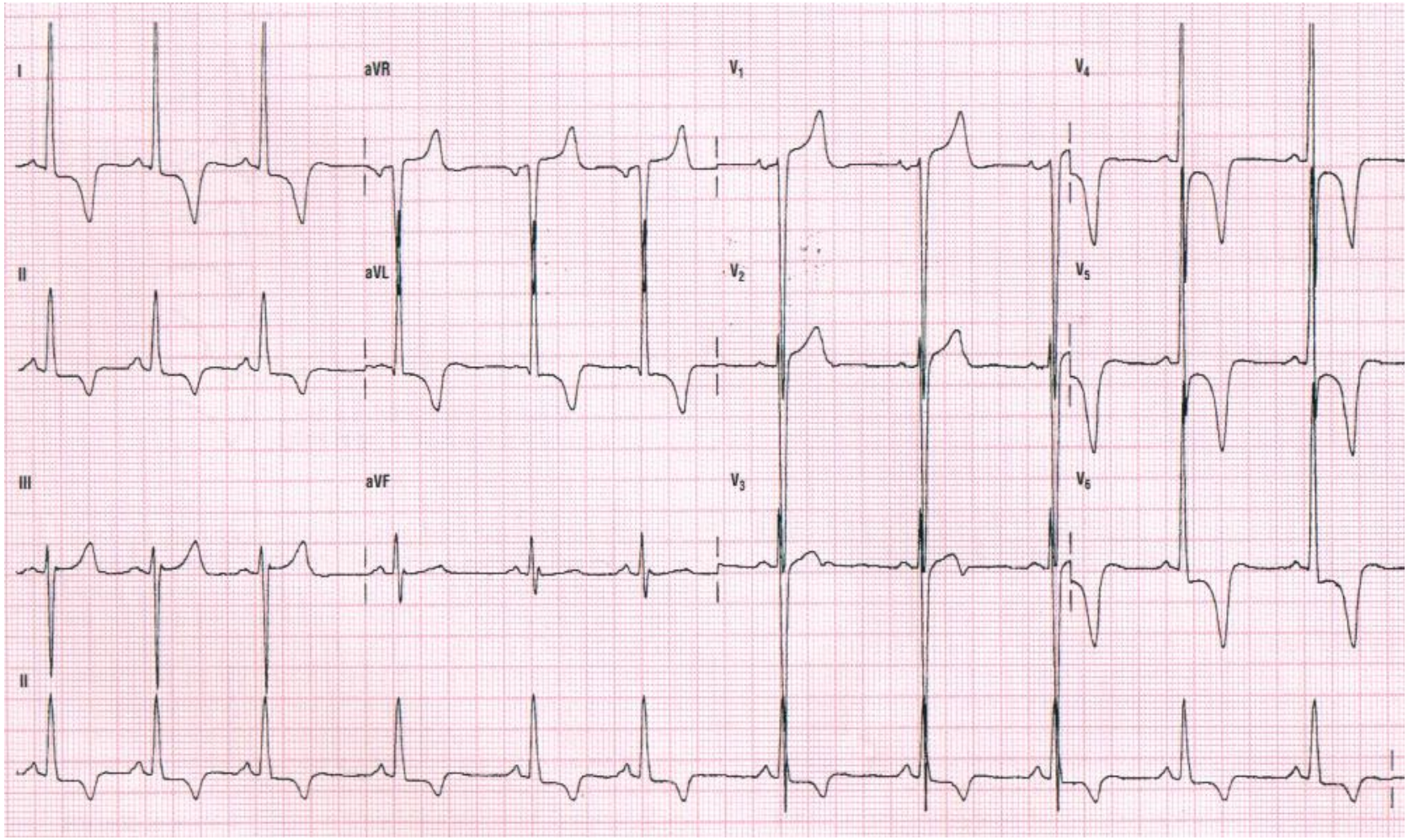
Interpretation: _____

12-Lead #6



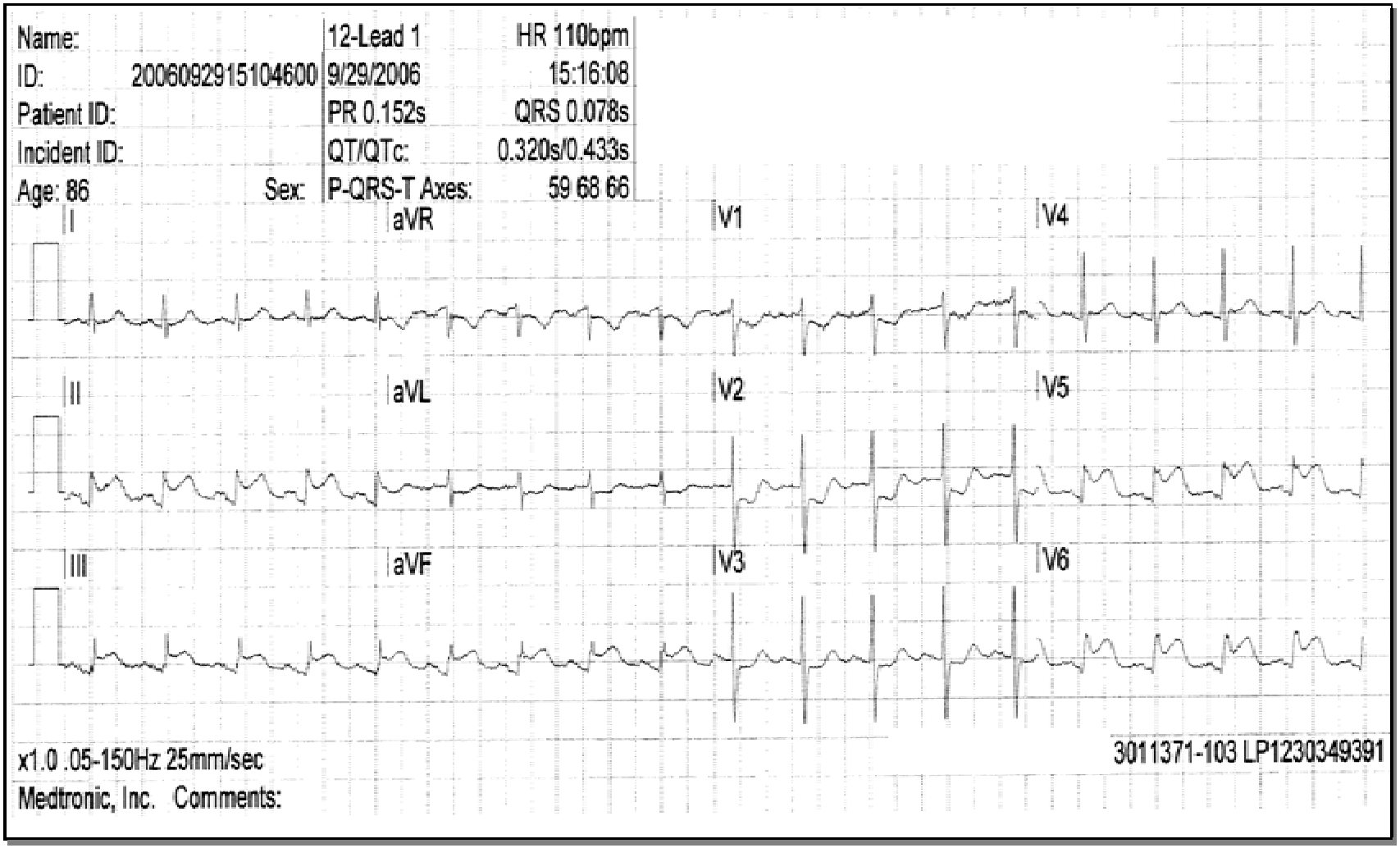
Interpretation: _____

12-Lead #7



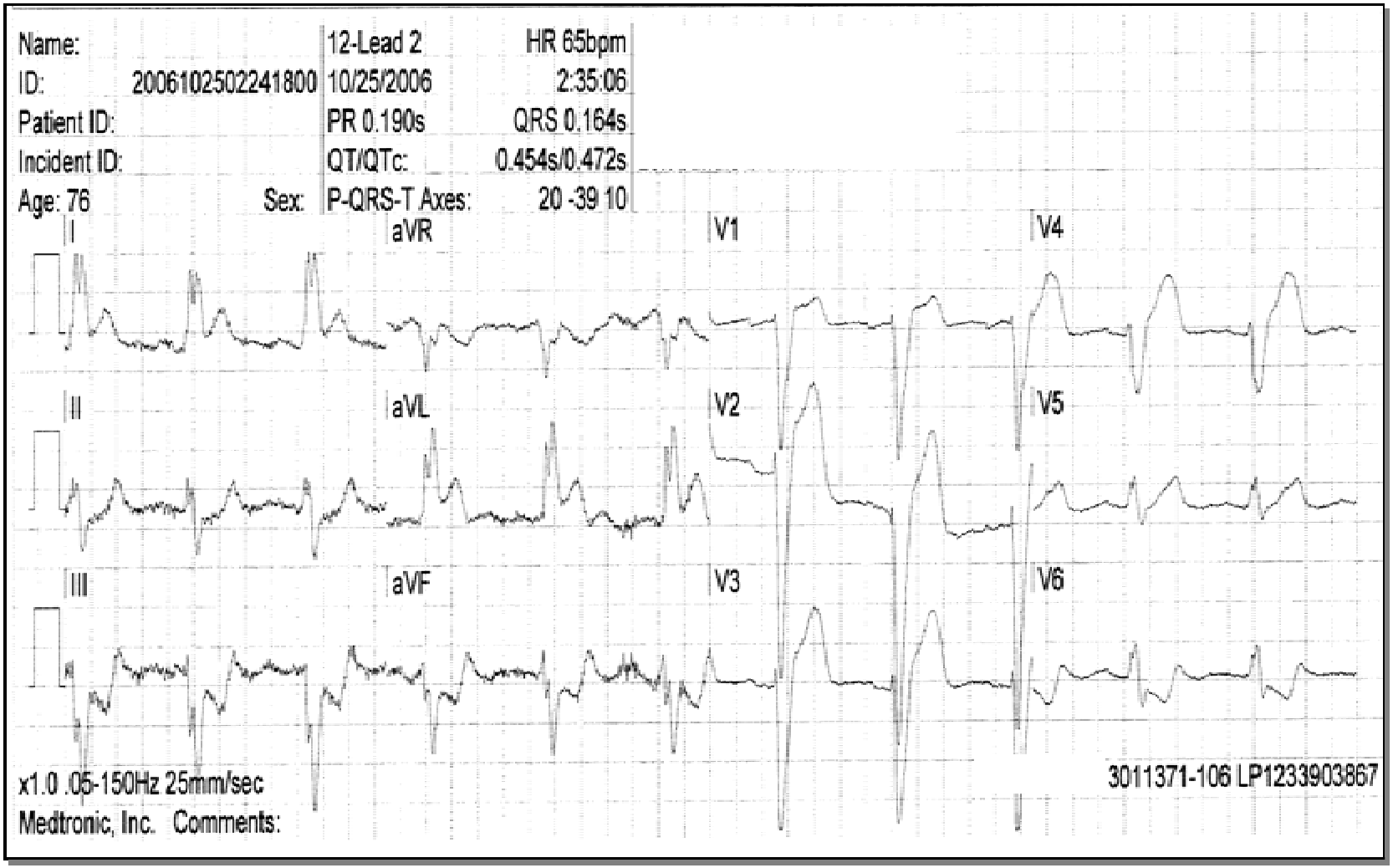
Interpretation: _____

12-Lead #8



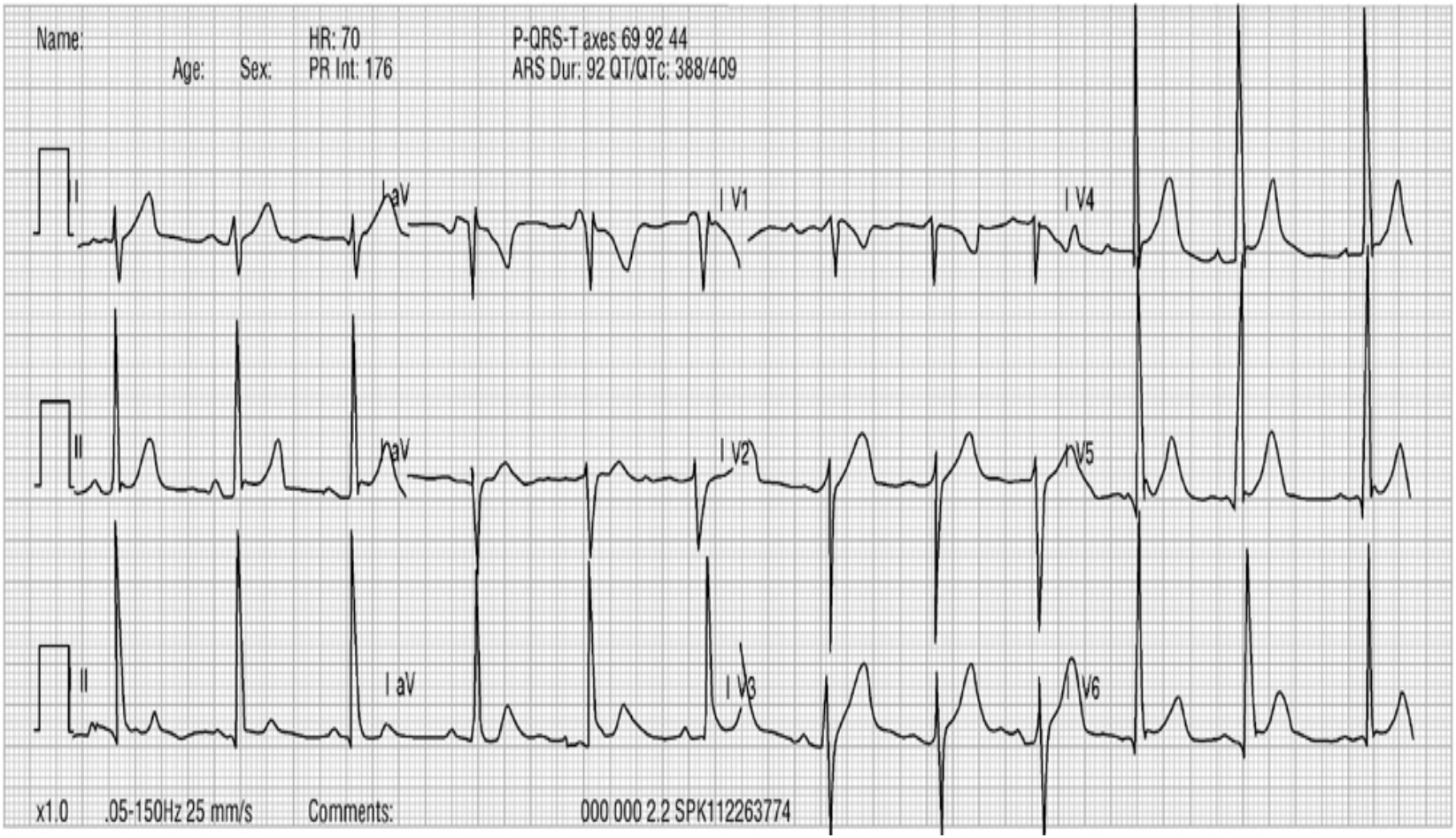
Interpretation: _____

12-Lead #9



Interpretation: _____

12-Lead #10



Interpretation: _____

Review Questions
12-Lead ECG

1. The QRS interval should normally be _____ or smaller.

    a. 0.20 sec
    b. 0.11 sec
    c. 0.18 sec
    d. 0.36 sec

2. The point at which the QRS complex meets the ST segment is known as the:

    a. Delta wave
    b. End point
    c. J point
    d. Vector

3. ST segment depression indicates:

    a. Myocardial ischemia
    b. Coronary vasospasm
    c. Prinzmetal's angina
    d. Chronic pericarditis

4. ST segment elevation is a primary indicator of:

    a. Ventricular atrophy
    b. Ventricular hypertrophy
    c. Myocardial injury
    d. Atrial aneurysm

5. ECG changes that may be anticipated as a result of myocardial ischemia, injury, and/or necrosis of the myocardial tissues include all of the following **EXCEPT**:

    a. PR interval prolongation
    b. ST segment elevation
    c. ST segment depression
    d. Pathologic Q wave

Review Questions
12-Lead ECG

6. ST segment depression may be evident on a 12-Lead ECG strip following both angina and strenuous exercise.

    a. True
    b. False

7. ECG changes of significance with myocardial ischemia includes ST segment depression, T wave inversion, or:

    a. Depressed T wave
    b. Peaked T wave
    c. Peaked P wave
    d. Inverted P wave

8. Inferior wall infarctions are generally associated with blockage of the:

    a. Right coronary artery
    b. Left coronary artery
    c. Bundle of His
    d. Coronary sinus

9. Myocardial infarctions may be classified as either transmural or:

    a. Supraendocardial
    b. Subendocardial
    c. Endocardial
    d. Precardial

10. If ST segment elevation is noted in the lower limb leads (Leads II, III and aVF), this finding is indicative of:

    a. Anterior myocardial infarction
    b. Lateral myocardial infarction
    c. Superior myocardial infarction
    d. Inferior myocardial infarction

Review Questions
12-Lead ECG

11. ECG leads that record the electrical impulse formation in uninvolved myocardium directly opposite the involved myocardium are termed:

    a. Facing leads
    b. Viewing leads
    c. Reciprocal leads
    d. Endocardial leads

12. If your patient is hypotensive and exhibiting ECG changes consistent with an inferior wall injury pattern, you should consider the possibility of:

    a. Right atrial infarction
    b. Left atrial infarction
    c. Right ventricular infarction
    d. Left ventricular infarction

13. Leads V3 and V4 visualize the _____wall of the heart's left ventricle.

    a. Medial
    b. Lateral
    c. Anterior
    d. Posterior

14. Right bundle branch will obscure ECG evidence of myocardial injury on the 12-Lead ECG:

    a. True
    b. False

15. Which of the following statements regarding LVH is true:

    a. LVH will abnormally widen the QRS complex.
    b. LVH causes global ST segment depression on the 12-Lead ECG.
    c. LVH causes concordant ST-T wave deflection (same polarity as QRS).
    d. LVH causes discordant ST-T wave deflection (opposite polarity of QRS).