

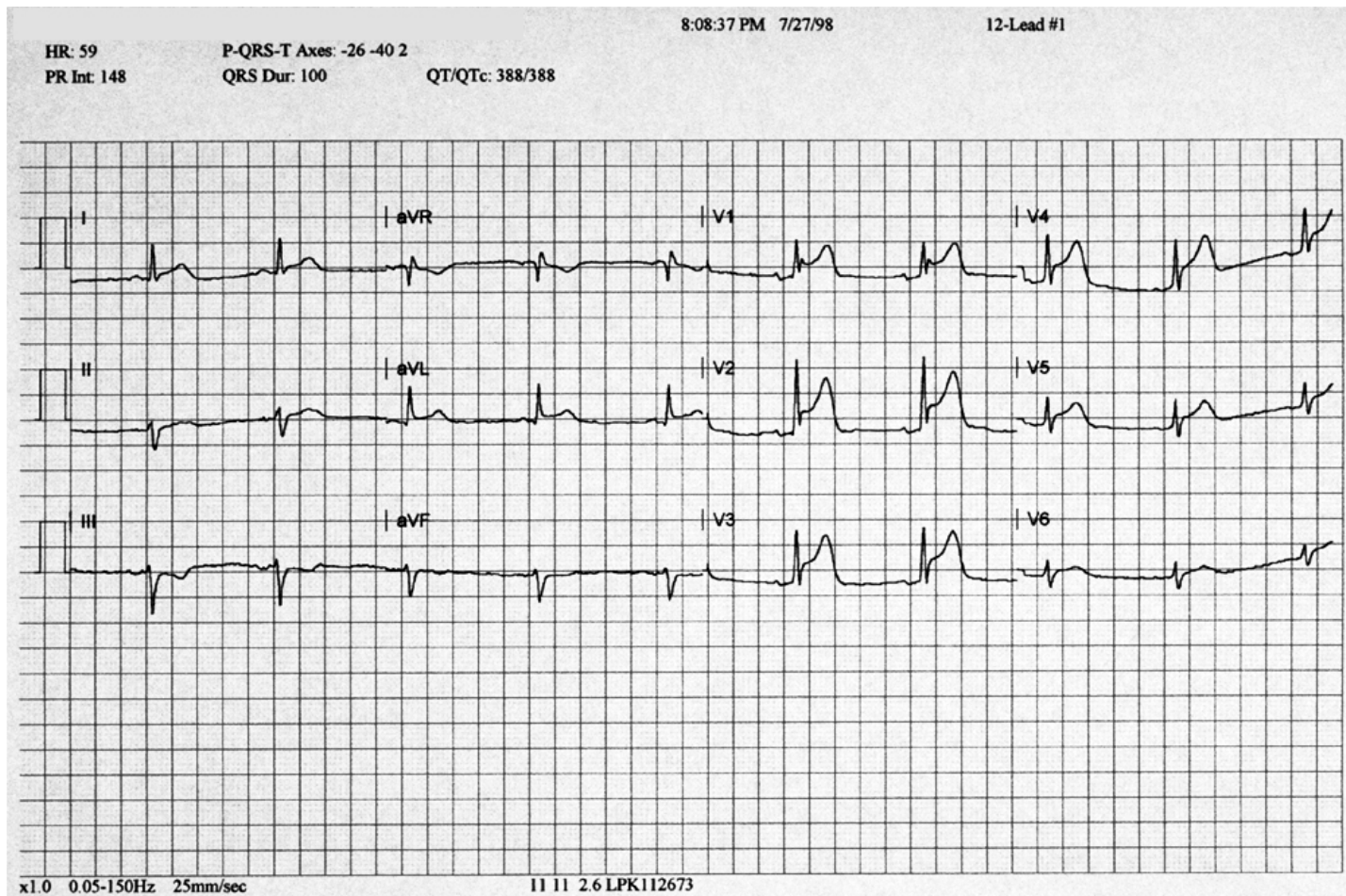


12 Lead ECGs:

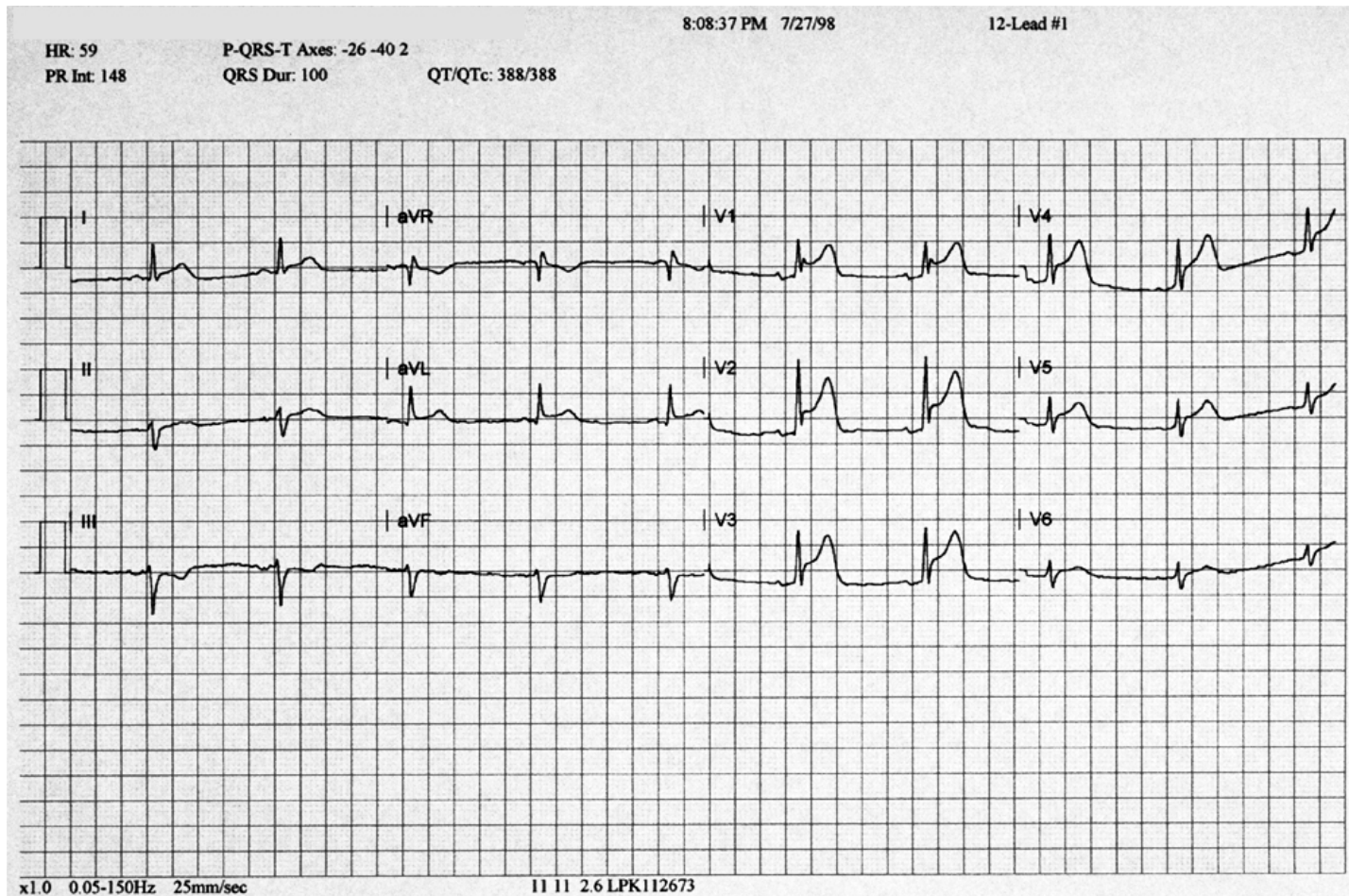
Ischemia, Injury & Infarction Part 3

*McHenry Western Lake County
EMS*

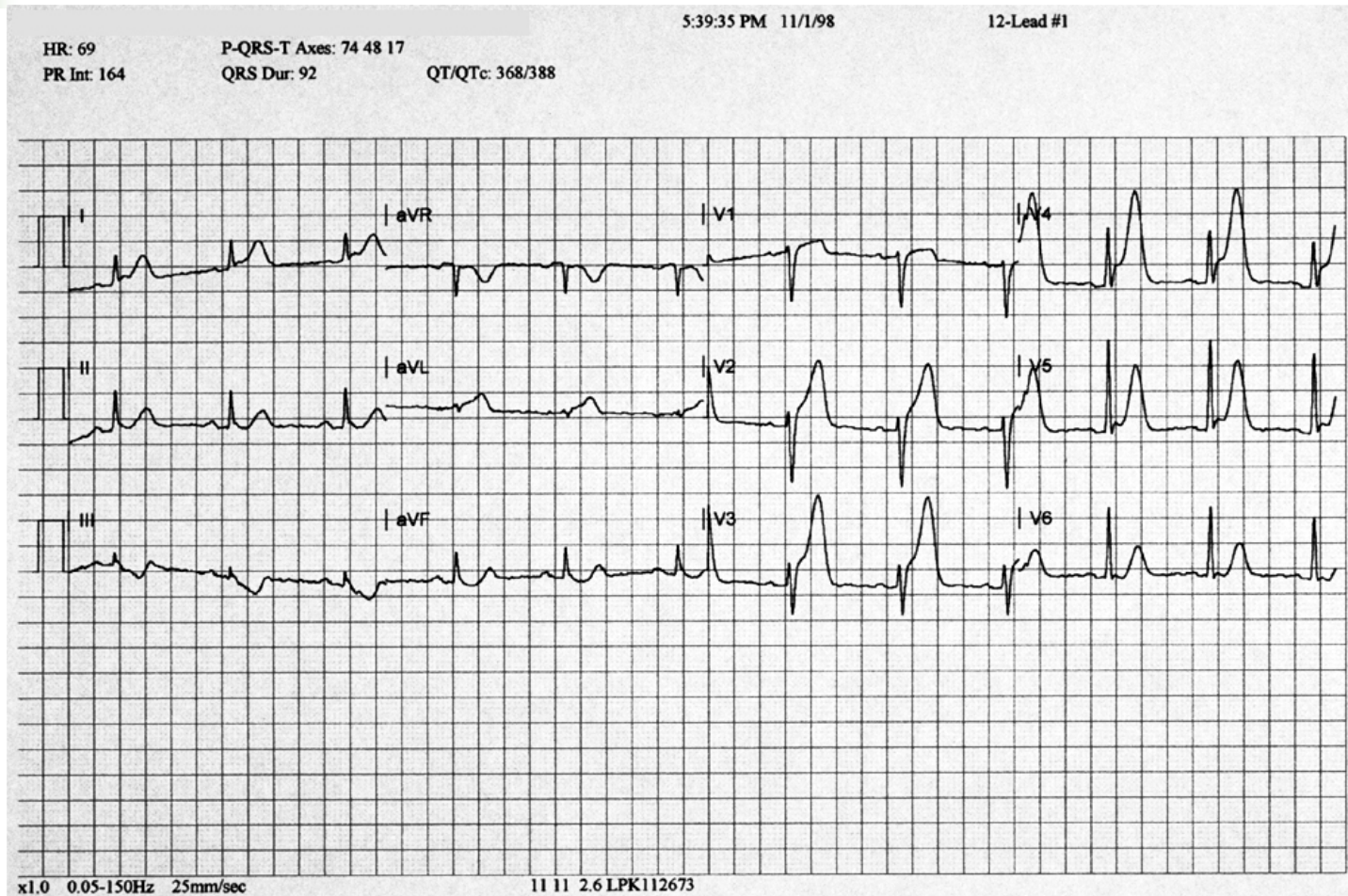
Practice



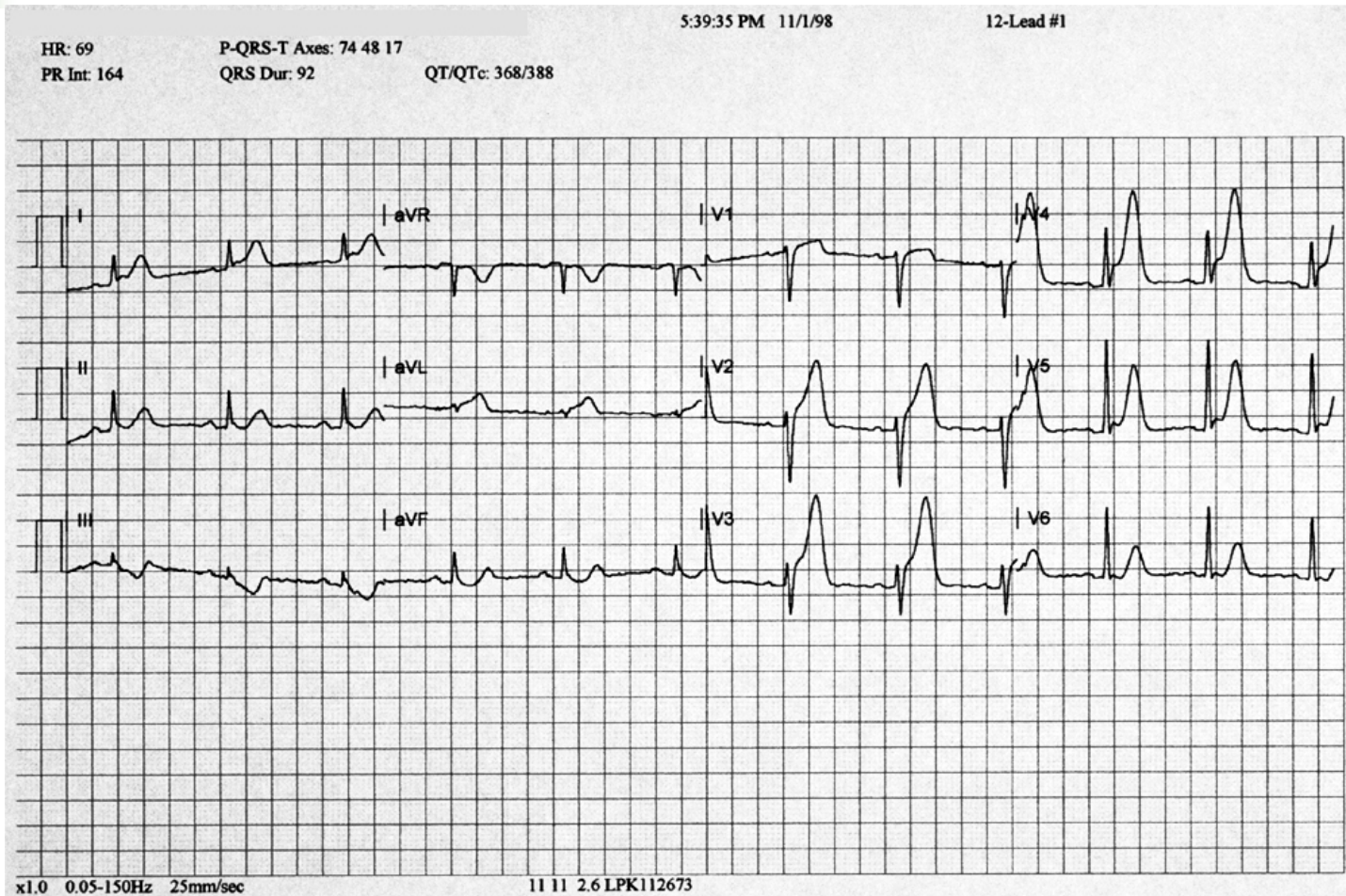
Antero-Septal Wall MI



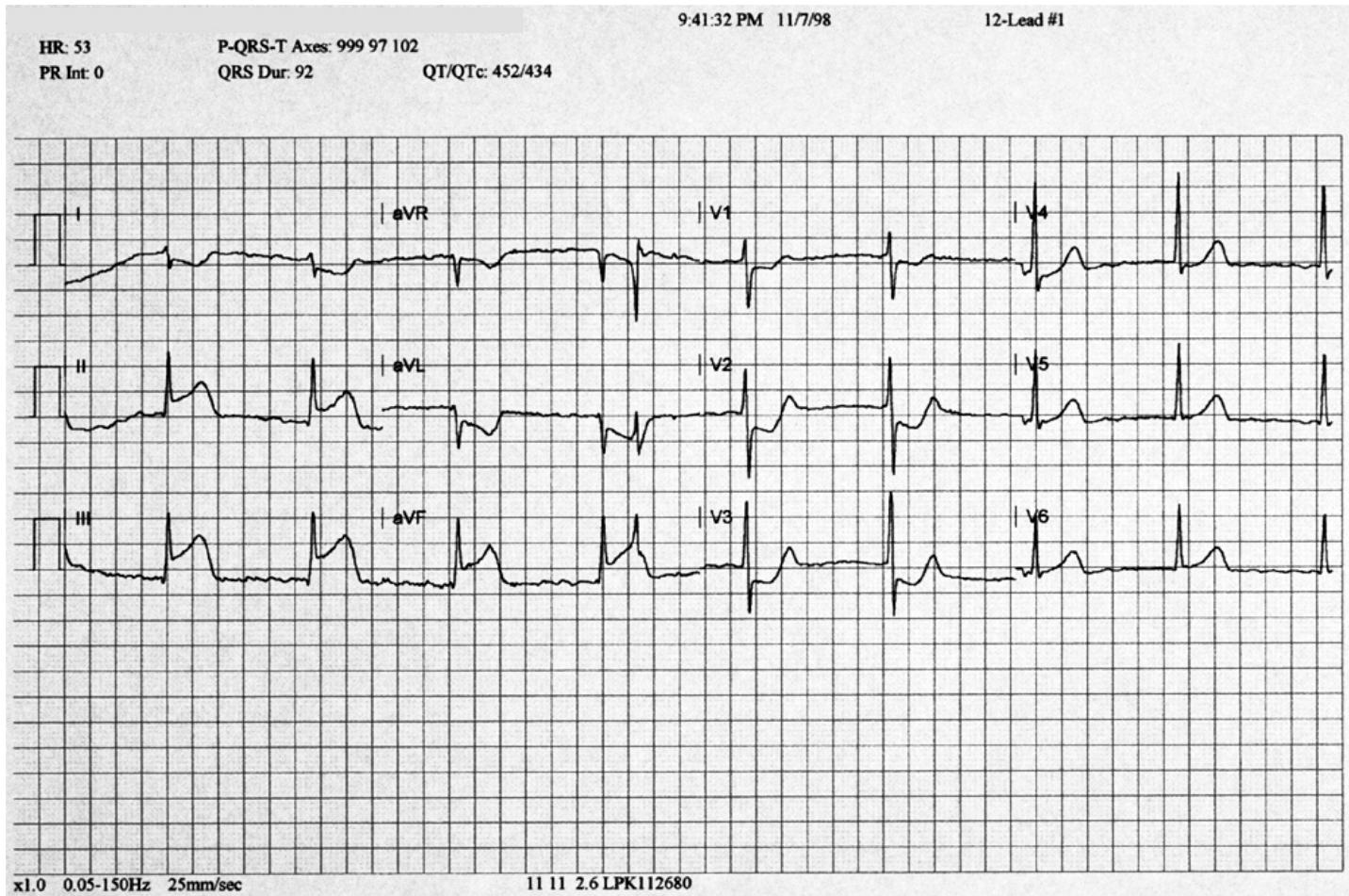
Practice



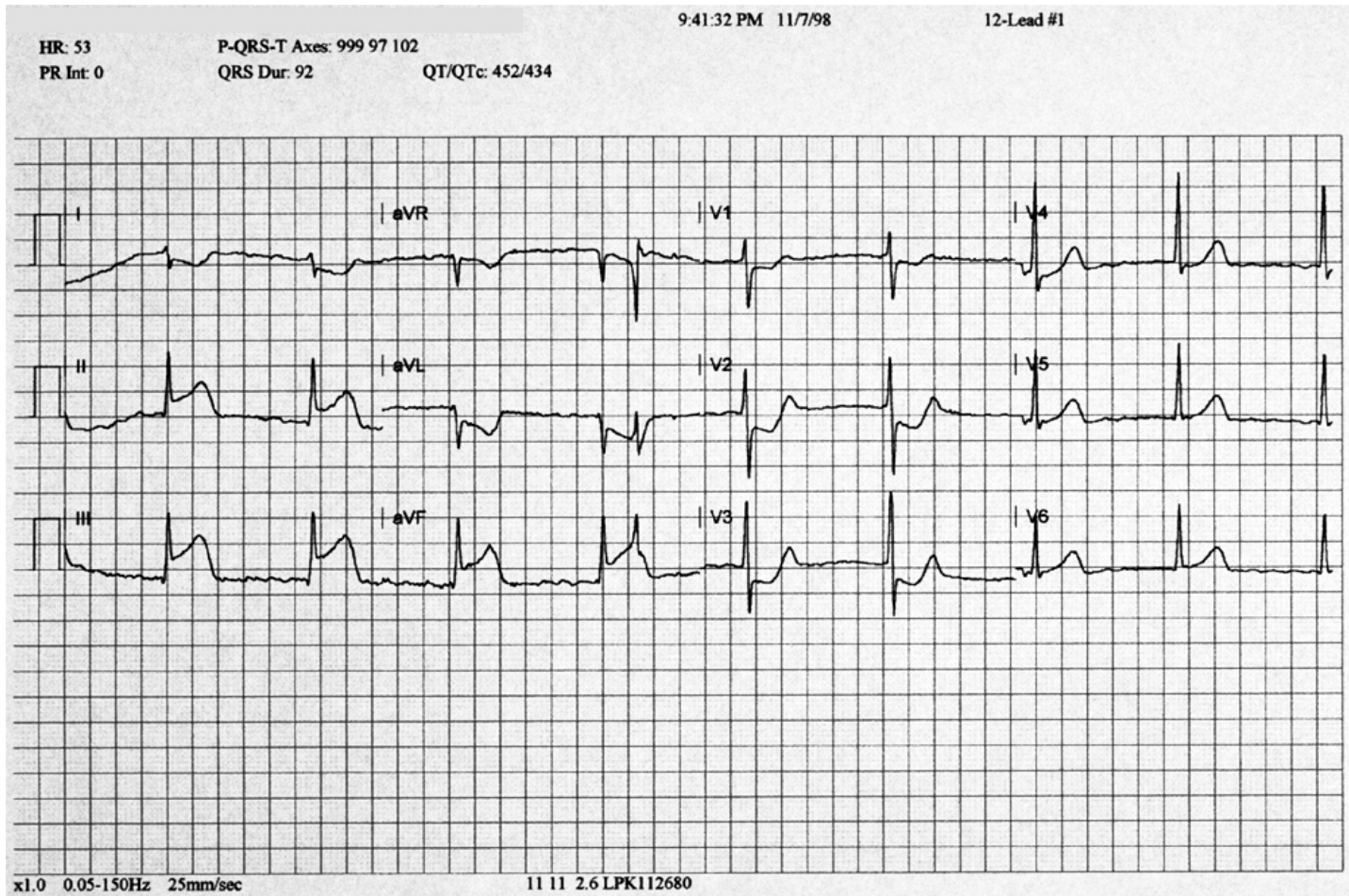
Extensive Anterior (Septal, Anterior and Lateral)



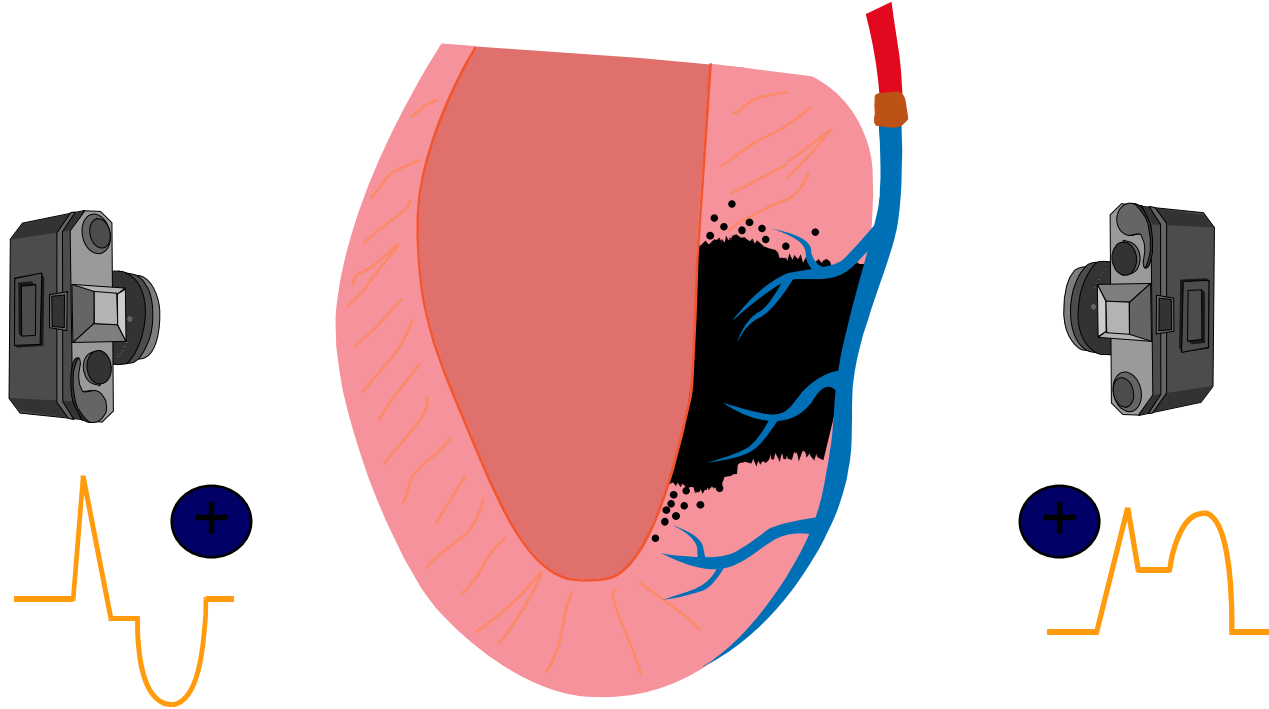
Practice



Inferior Wall MI



Reciprocal Changes

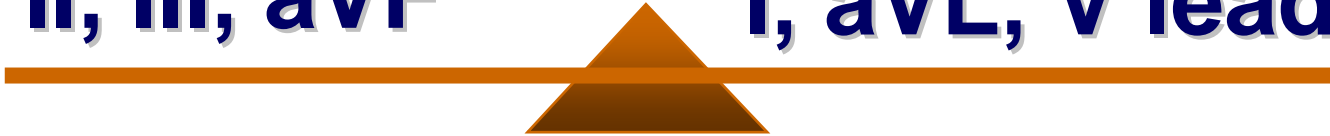


Reciprocal Changes

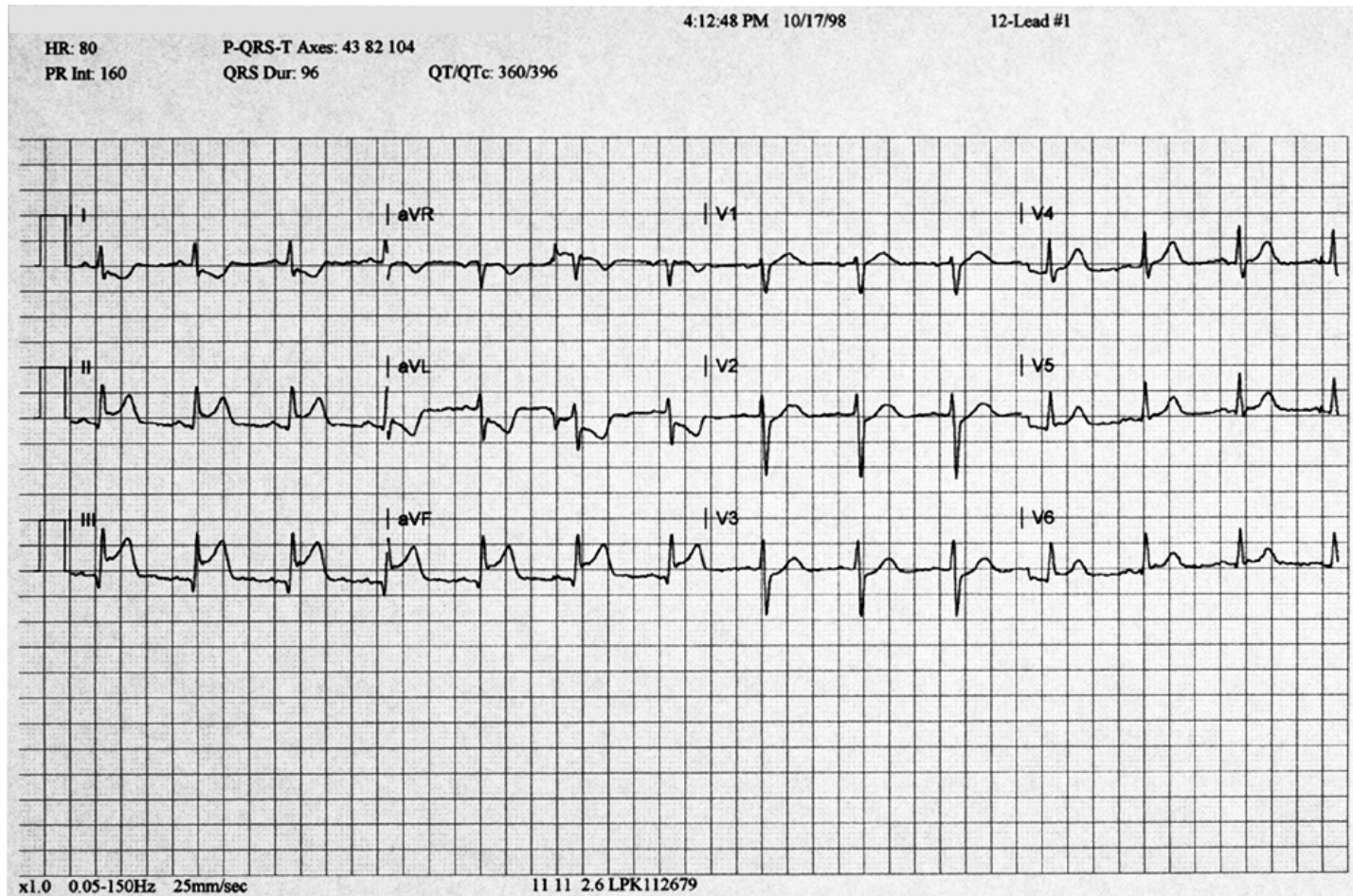


II, III, aVF

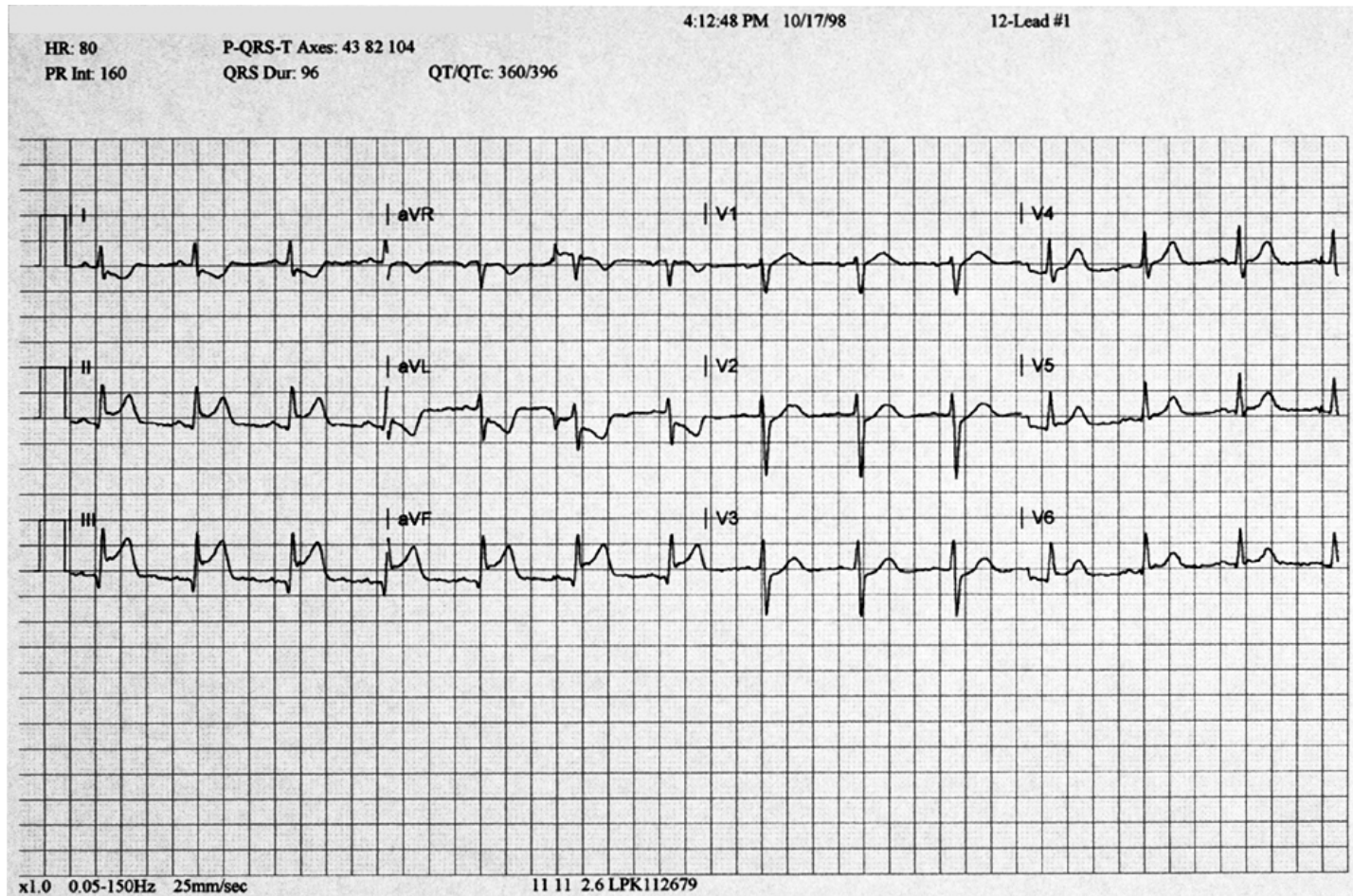
I, aVL, V leads



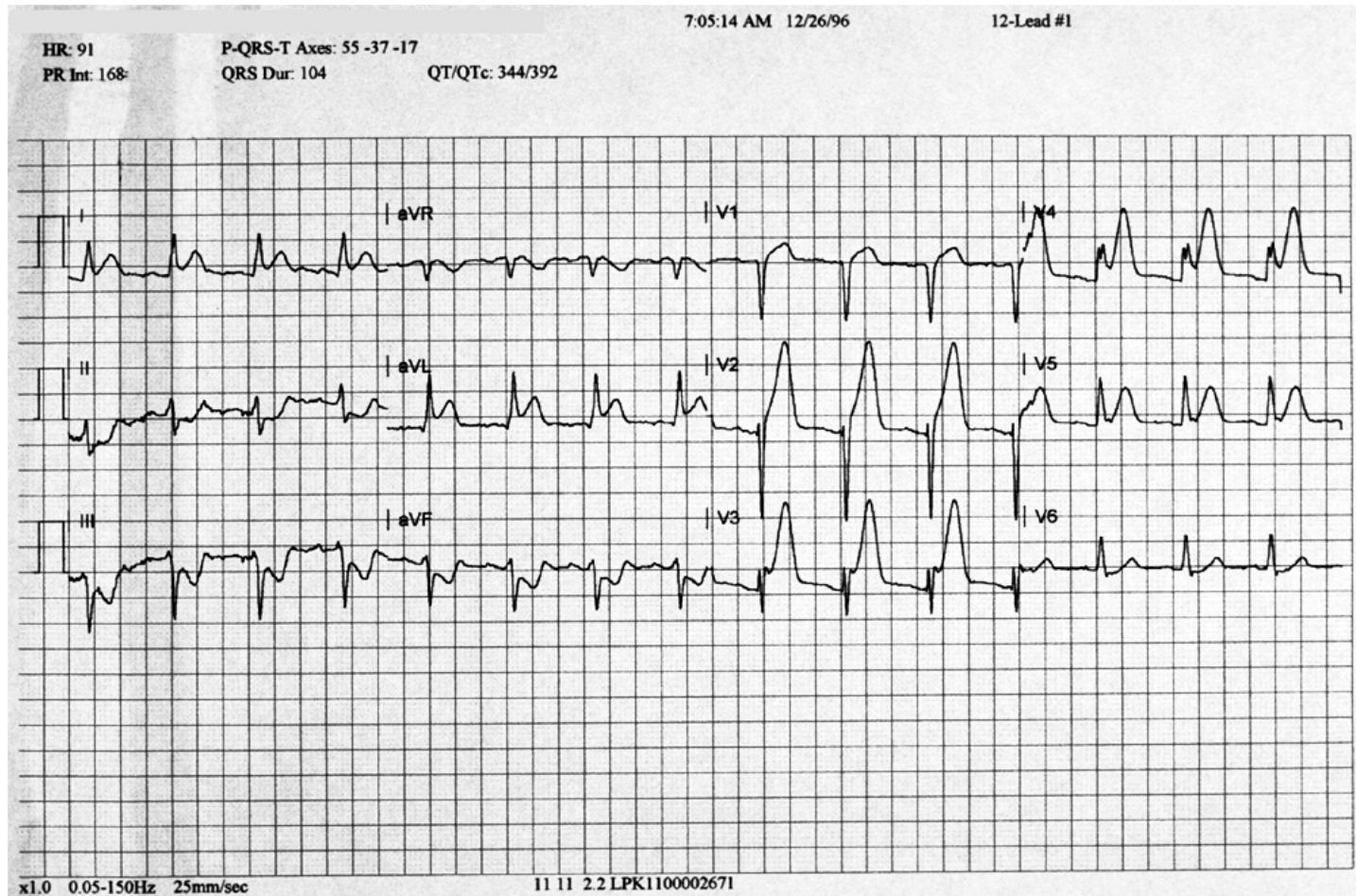
Reciprocal Changes: Practice



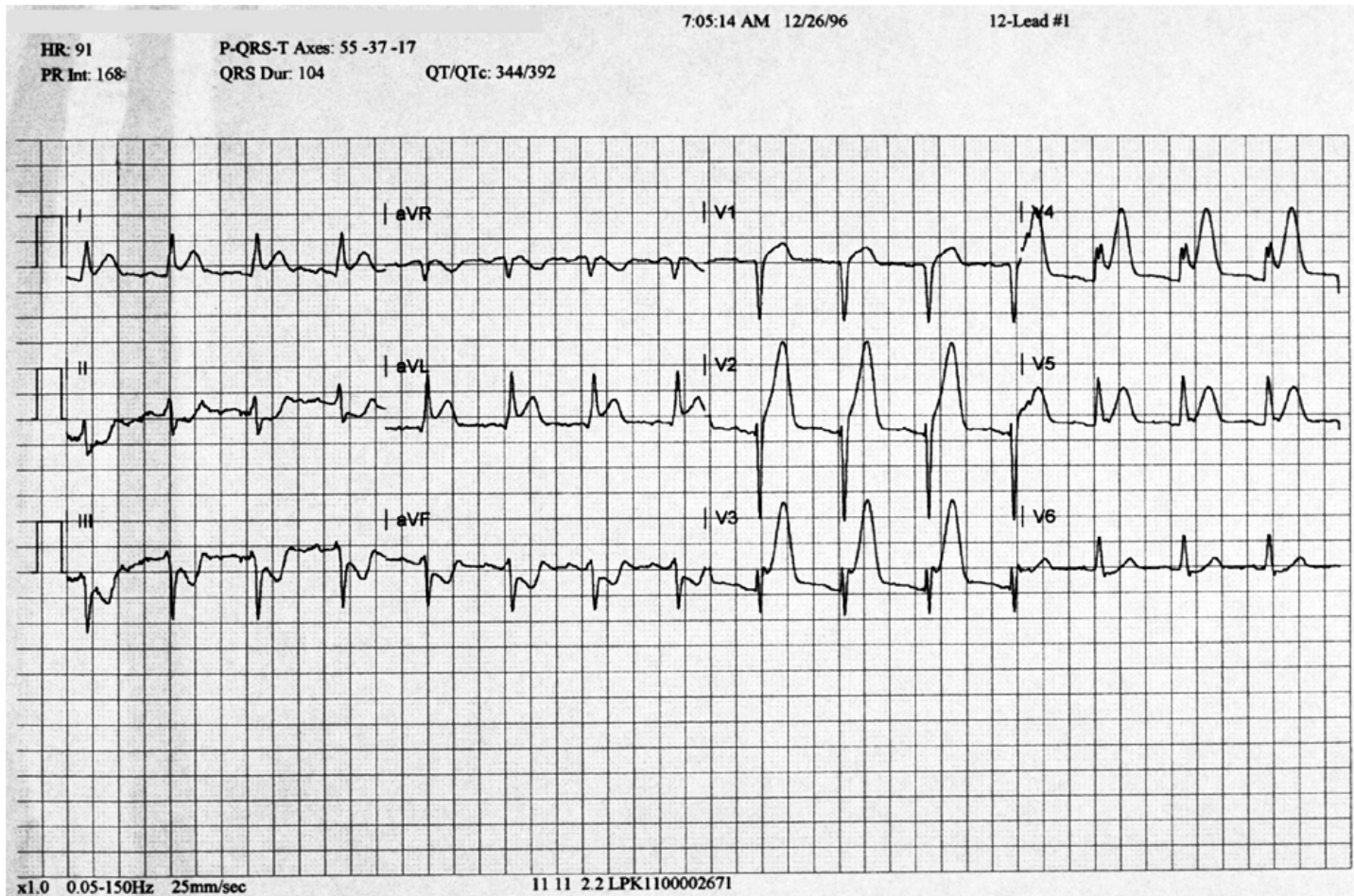
ST elevation in II, III, aVF ST depression in I and aVL



Reciprocal Changes: Practice



ST elevation in I, aVL, V1-V5 ST depression in II, III and aVF





AMI Recognition

- Reciprocal changes
 - Not necessary to presume infarction
 - Strong confirming evidence when present
 - Not all AMIs result in reciprocal changes



Summary

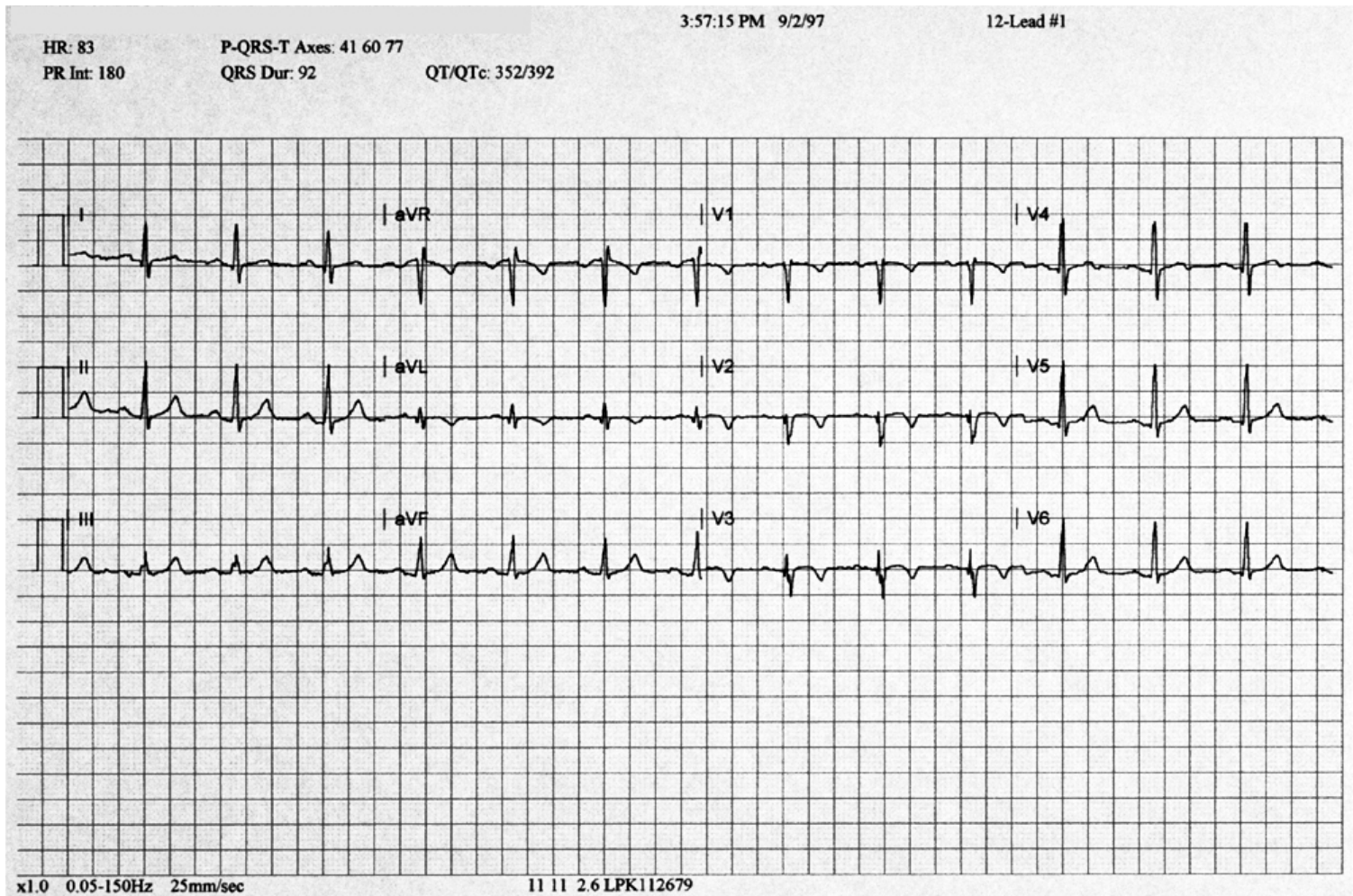
- ST segment elevation is presumptive evidence for AMI
- Other conditions may also cause ST elevation
 - Known as Imposters



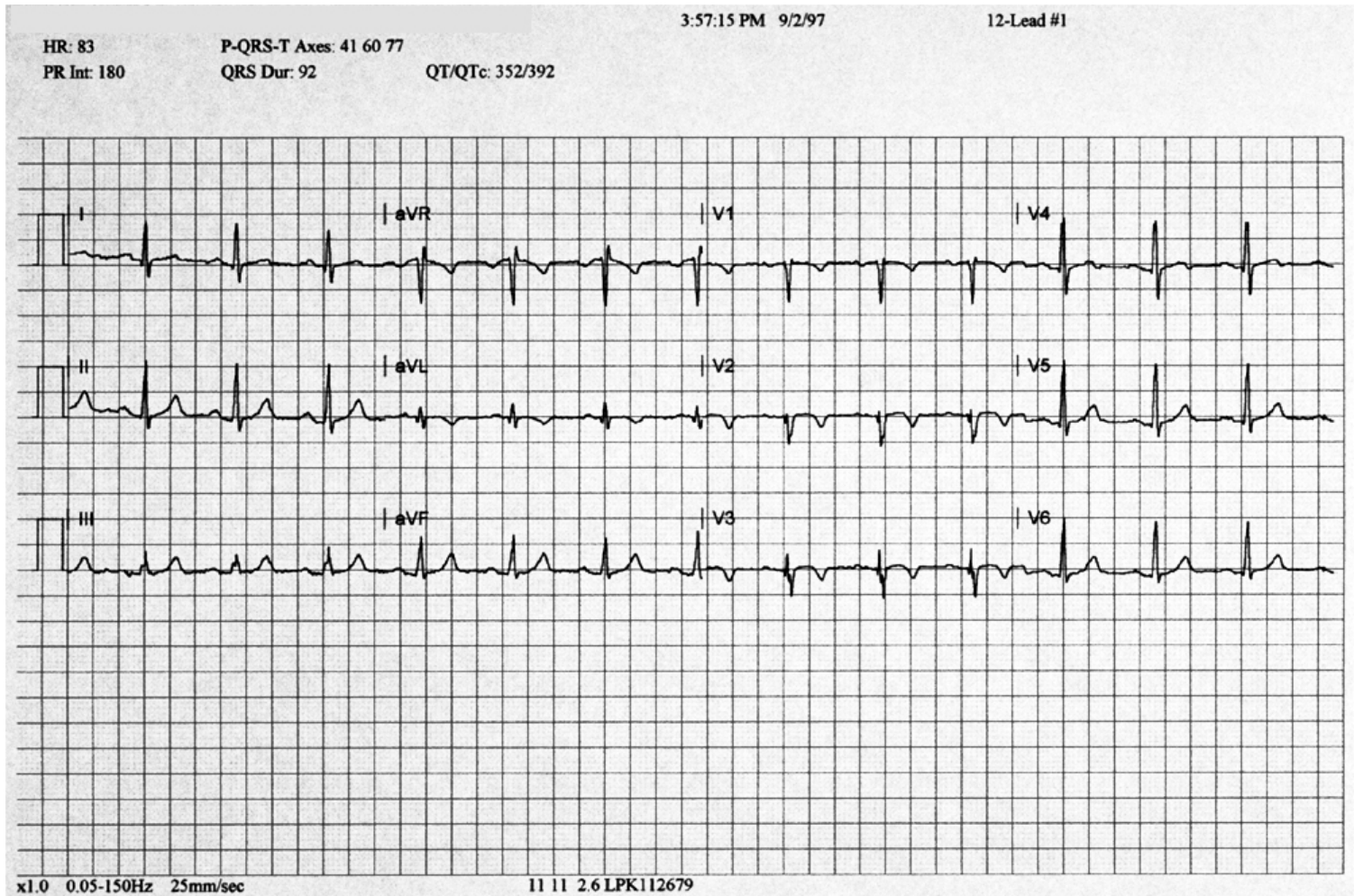
Practice Case 1

- 48 year old male
 - Dull central CP 2/10, began at rest
- Pale and wet
- Overweight, smoker
- Vital signs: RR 18, P 80, BP 180/110, SaO₂ 94% on room air

Practice Case 1



Normal ECG

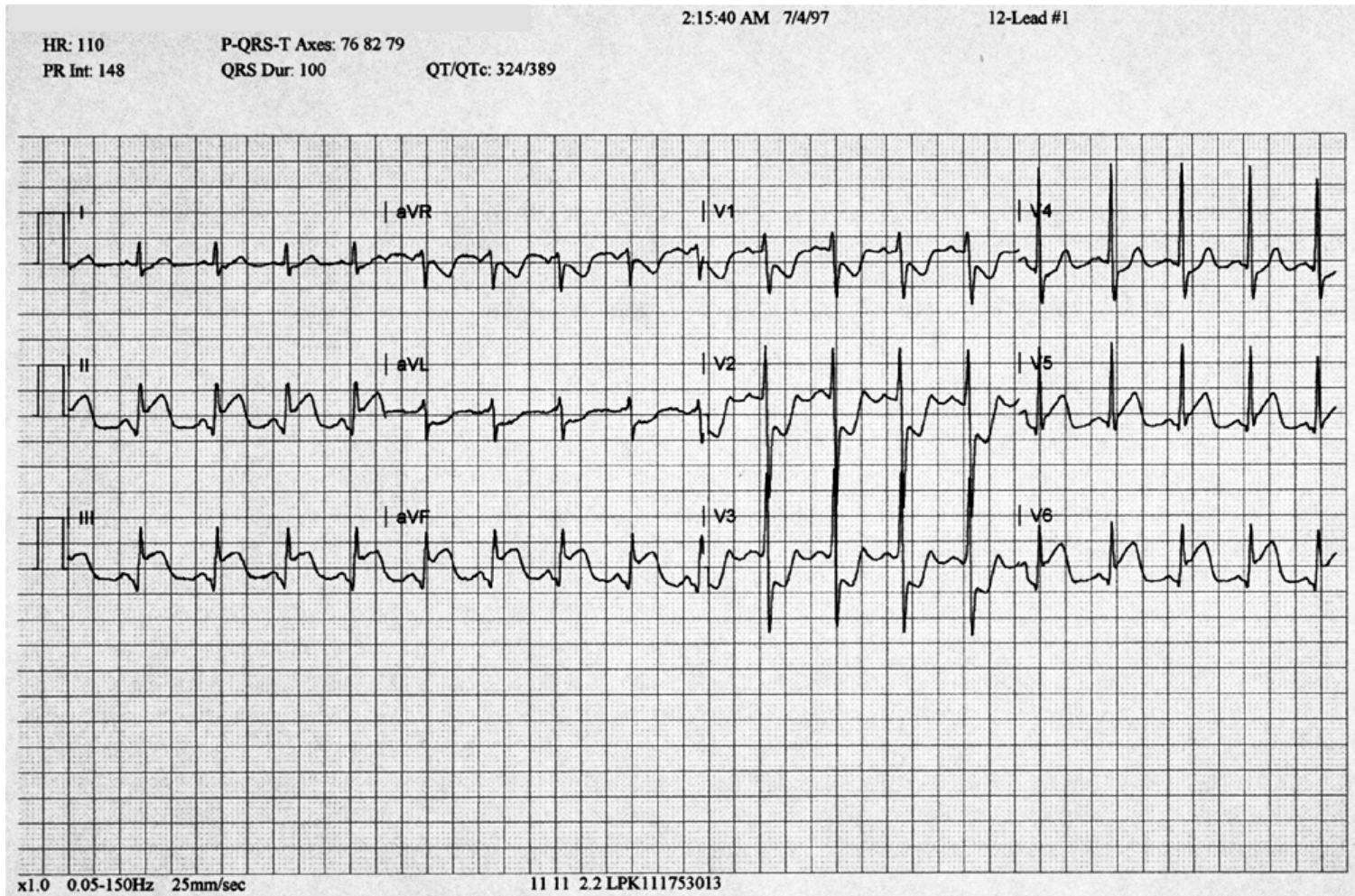




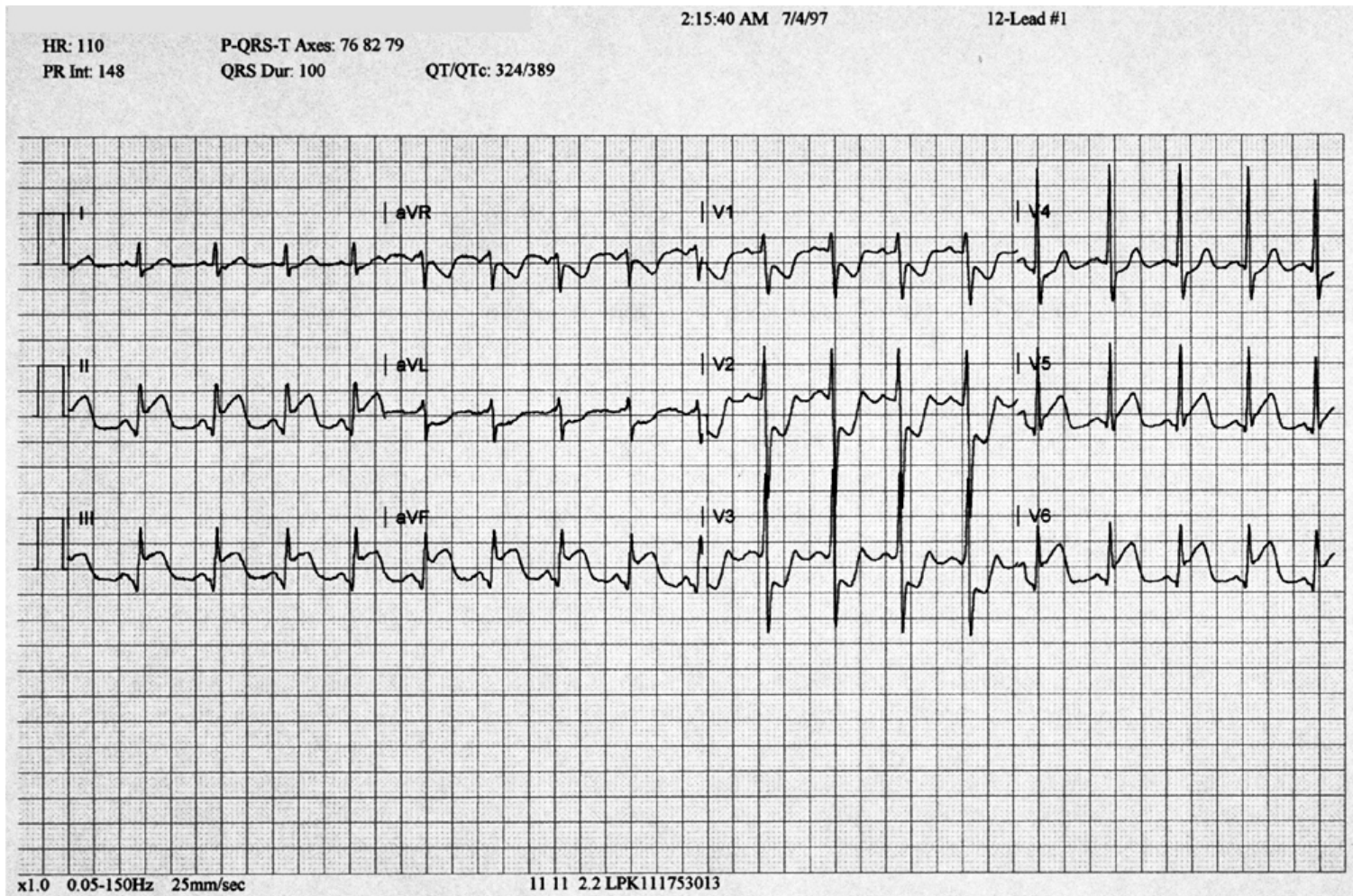
Practice Case 2

- 68 year old female
 - Sudden onset of anxiety and restlessness,
 - States she “can’t catch her breath”
 - Denies chest pain or other discomfort
- History of IDDM and hypertension
- RR 22, P 110, BP 190/90, SaO₂ 88%

Practice Case 2



Inferior/Lateral Wall MI





Practice Case Summary

- Must take into Account
 - Story
 - Risk factors
 - ECG
 - Treatment



STEMI

- *ST Elevated Myocardial Infarction*
- *Rapidly* identify and treat patients eligible for acute reperfusion therapy

Acute Reperfusion Therapy

- Thrombolytics
 - Reteplase (rPA)
 - Actiplase (tPA)
- Percutaneous Transluminal Coronary Angioplasty (PTCA)
 - Balloon
 - Stent
 - Atherectomy

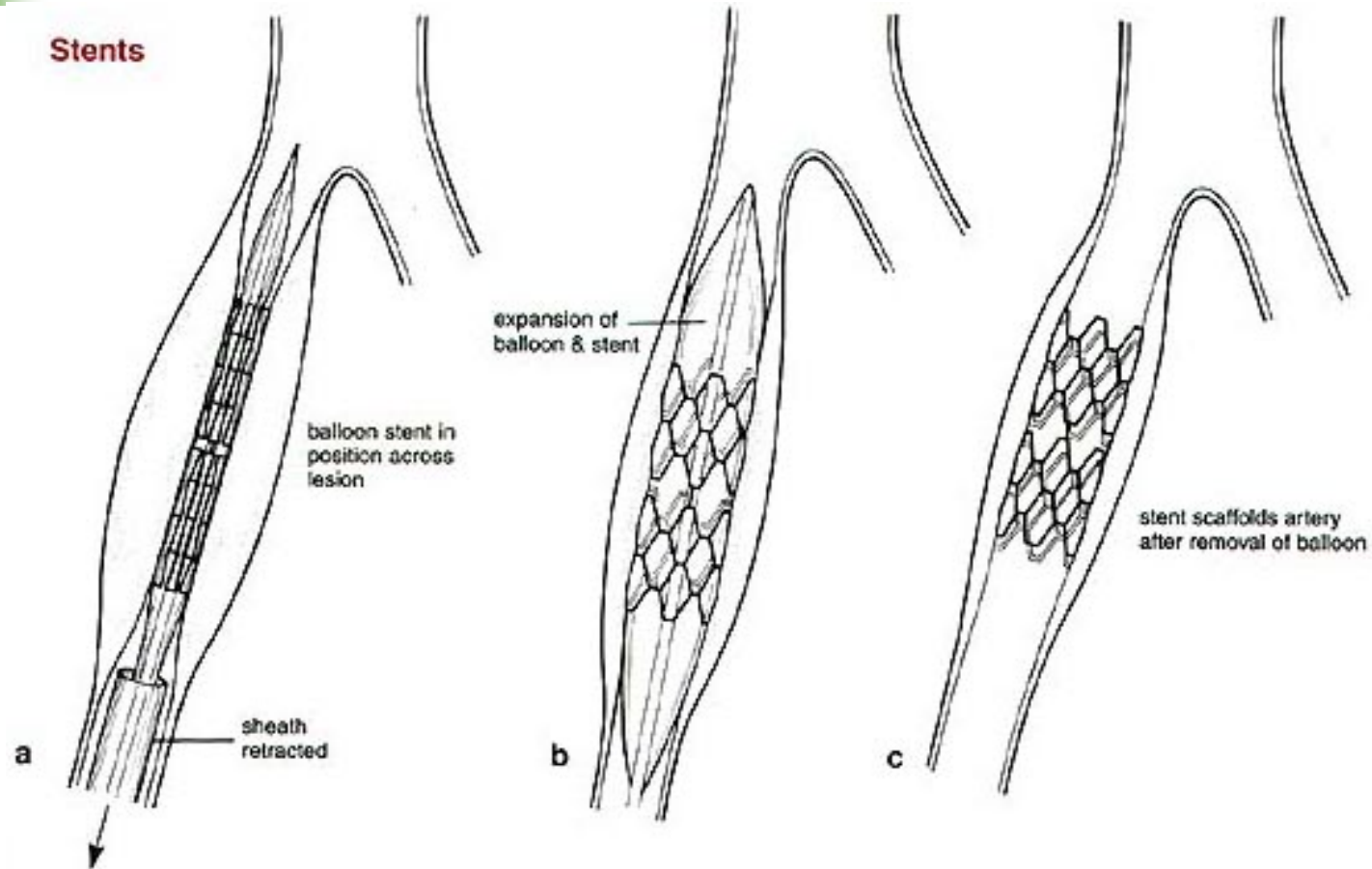




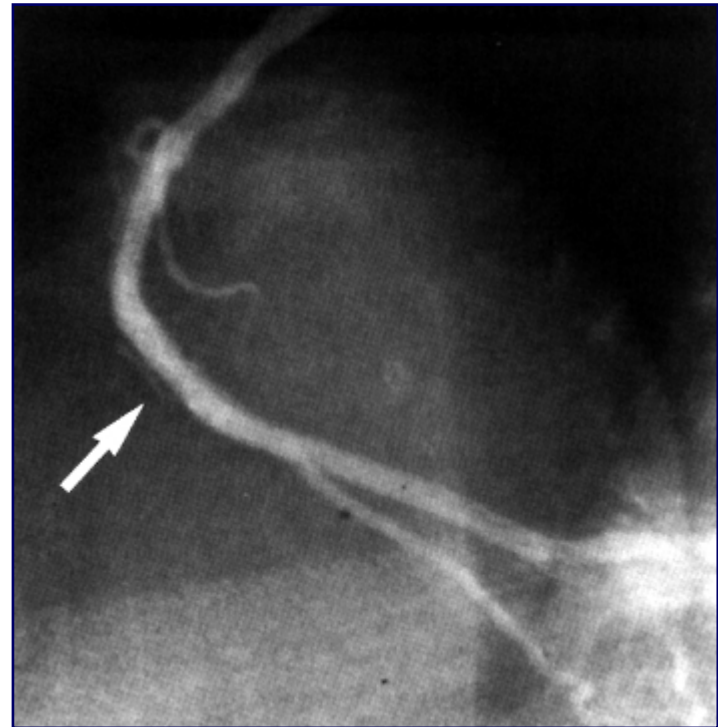
Atherectomy

- Atherectomy is a non-surgical procedure to open blocked coronary arteries or vein grafts by using a device on the end of a catheter to cut or shave away atherosclerotic plaque

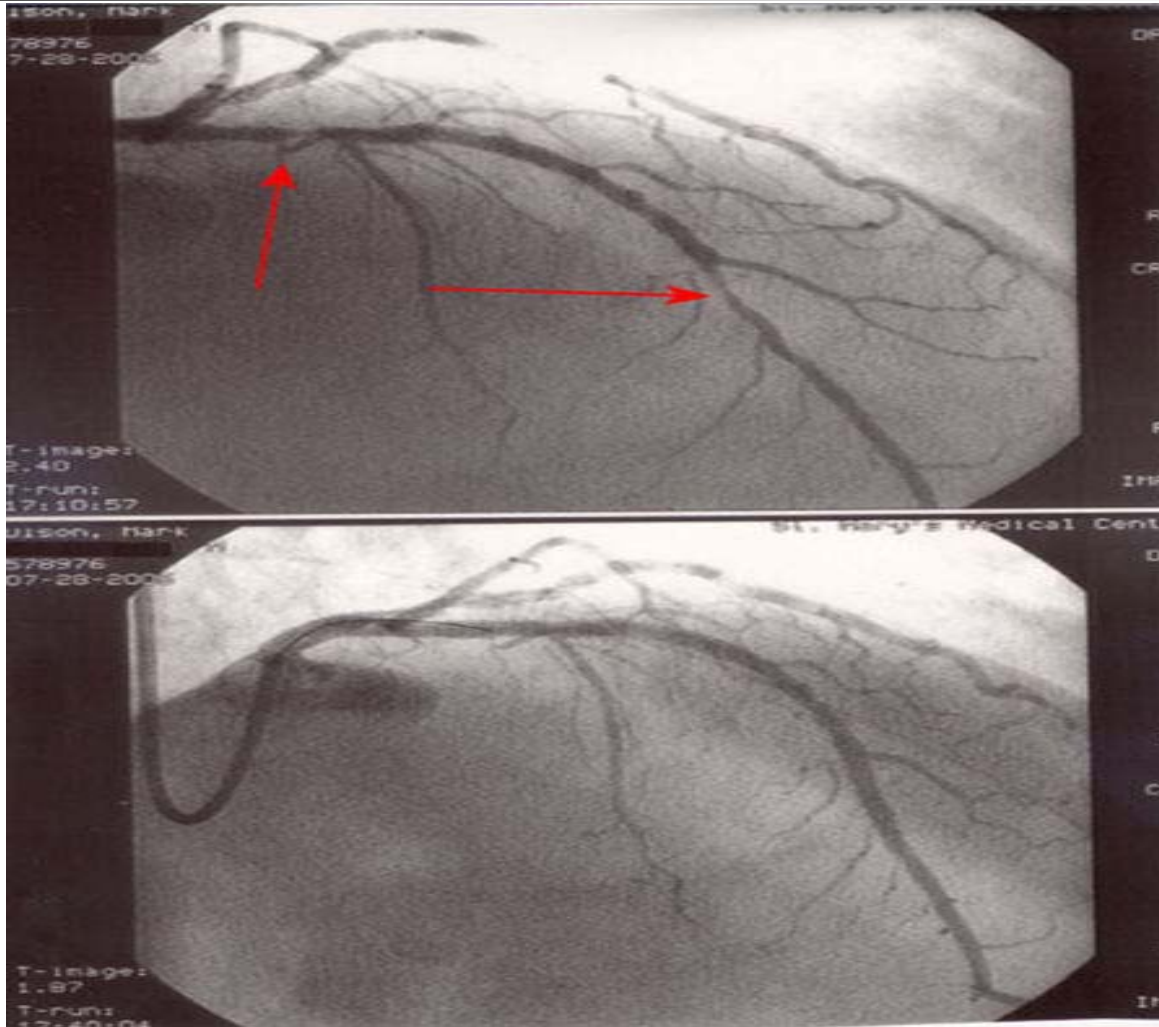
Acute Reperfusion Therapy



Acute Reperfusion Therapy



Acute Reperfusion Therapy





Intra Aortic Balloon Pump

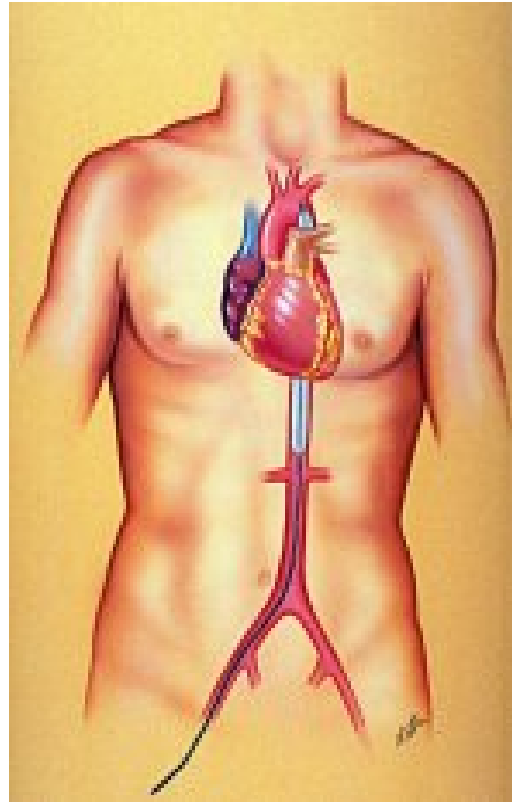
- The balloon is guided into the descending aorta, approximately 2 cm from the left subclavian artery.
- At the start of diastole, the balloon inflates, augmenting coronary perfusion.



Intra Aortic Balloon Pump

- At the beginning of systole, the balloon deflates; blood is ejected from the left ventricle, increasing the cardiac output by as much as 40 percent and decreasing the left ventricular stroke work and myocardial oxygen requirements.
- In this manner, the balloon supports the heart indirectly.

Intra Aortic Balloon Pump





The 12-Lead ECG Summary

- ST elevation - the key to the acute reperfusion therapy subset
- You can't see ST elevation without a 12-lead ECG



The 12-Lead ECG Summary

- Perform on *every* patient suspected of ACS
- Obtain *early*
 - with the first vital signs
- *Repeat* frequently
 - every 5-10 minutes
 - each change of symptoms



Special Thanks!

To Acute Coronary Syndrome
Consultants, Inc.

Tim Phalen, Gary Denton and Assoc.
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materials in this presentation