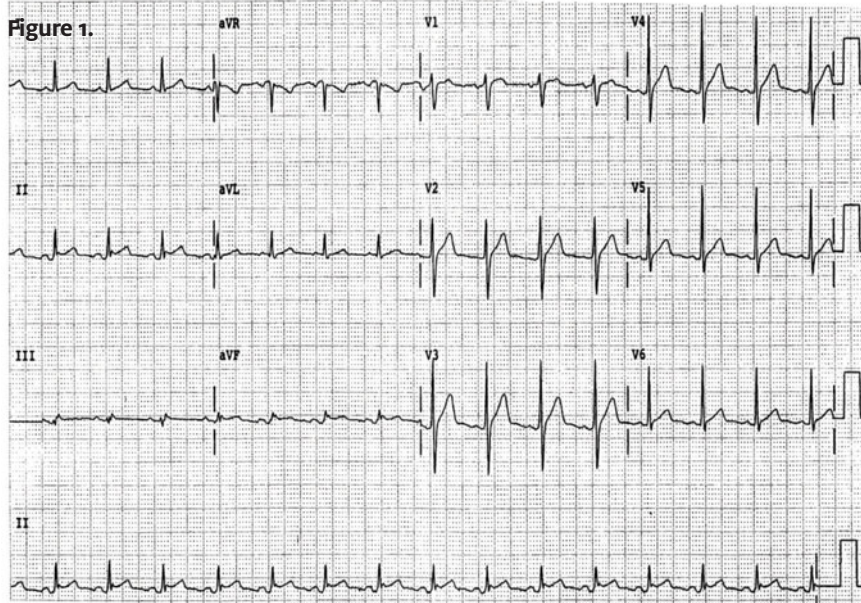




In each issue, *JUCM* will challenge your diagnostic acumen with a glimpse of x-rays, electrocardiograms, and photographs of conditions that real urgent care patients have presented with.

If you would like to submit a case for consideration, please email the relevant materials and presenting information to editor@jucm.com.

A 37-Year-Old Man with a Two-Day History of Chest Pain



View the ECG (**Figure 1**) and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

Case

The patient is a 37-year-old man who reports a two-day history of chest pain. It worsens with exertion, and when he lays back; it improves when he's sitting or leaning forward. He denies any diaphoresis, radiation, or back pain. No pleuritic aspect.

During the exam, he is alert and oriented, and in no distress. In addition, you find:

- Lungs: Clear to auscultation bilaterally
- Cardiovascular: Regular rate and rhythm without murmur, rub, or gallop
- Abdomen: Soft and nontender without rigidity, rebound, or guarding. No pulsatile abdominal mass
- Extremities: No pain or swelling of the lower extremities; pulses are 2+ and equal in all 4 extremities

PR	149
QRSD	90
QT	310
QTc	379
Axes	
P	60
QRS	42
T	35

THE RESOLUTION

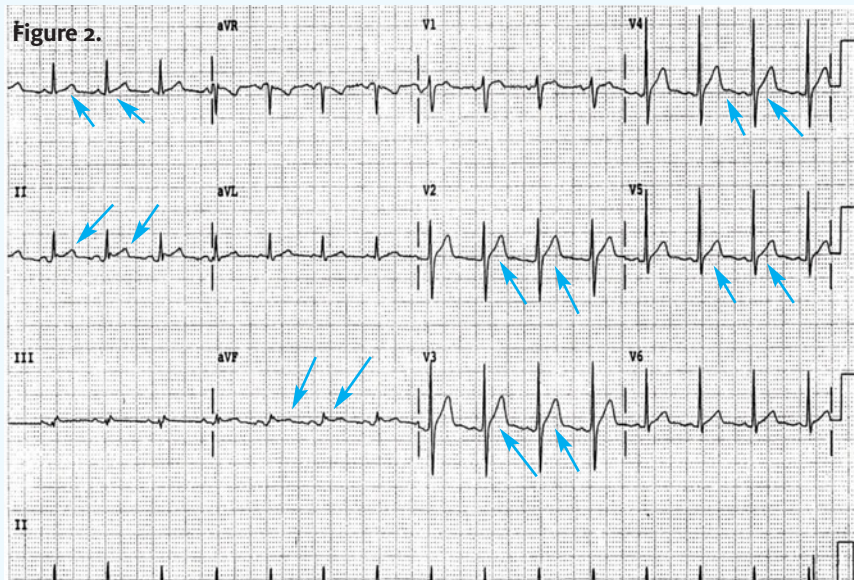


Figure 2. Note: Arrows point to the generalized ST elevations.

Differential Diagnosis

- A. Inferior STEMI
- B. Acute pericarditis
- C. Anterior STEMI
- D. Sinus bradycardia
- E. Ventricular tachycardia

Diagnosis

The ECG shows diffuse ST elevation secondary to acute pericarditis (answer B). Post ECG, the patient confirms he had a viral upper respiratory infection 2 weeks ago, with resolution of URI symptoms within the last few days.

Learnings

- ST elevation may be caused by an acute ischemia/infarction, but other causes include:
 - Ventricular aneurysm
 - Early repolarization
 - Prinzmetal's angina
 - Pericarditis (diffuse ST segment elevation)
- How can ST elevation from acute pericarditis be differentiated from a STEMI? The answer is, the STEMI generally occurs from occlusion of a coronary artery (plaque rupture → platelet aggregation → coronary artery occlusion). STEMI will generally occur in an *anatomic* distribution, and not a *generalized* distribution. For example:
 - Occlusion of the right coronary artery (RCA) will usually result in inferior ischemia, seen as ST elevation in the inferior leads (II, III, and aVF) and will often have

reciprocal change

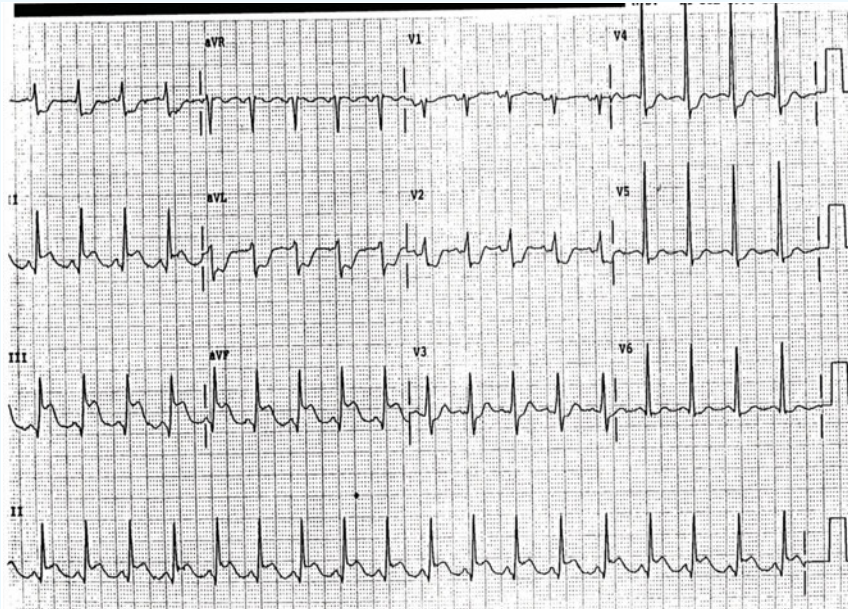
- Occlusion of the left anterior descending artery (LAD) will result in anterior ischemia seen as ST elevation in the anterior leads V3 and V4
- Occlusion of the circumflex artery will result in lateral ischemia seen as ST elevation in the lateral leads I, aVL, V5 and V6
- Key point: with acute pericarditis, the ST elevation is *generalized* and does NOT follow an anatomic distribution
- Etiologies of acute pericarditis include:
 - Idiopathic
 - Infectious—usually viral, but may include bacterial or even tuberculosis
 - Inflammatory—consider lupus, rheumatoid arthritis
 - Other—drugs, radiation, sarcoidosis, trauma
- The classical exam finding is a cardiac “rub,” a rough-type rubbing/scratching sound, though (as in our patient), this is not always present
- ECHO may be performed to look for pericardial effusion/tamponade
- Management is with NSAIDs

Pearls for Initial Management and Considerations for Transfer

- Unstable vital signs
- Diagnostic uncertainty
- Inability to follow up or return with worsening symptoms
- Inability to definitively exclude STEMI/ACS ■



A 42-Year-Old Woman with Short-Term Dizziness and Vomiting



Case

This 42-year-old woman presents to your urgent care center with a 2-hour history of intermittent dizziness and vomiting. She denies diarrhea or exposure to ill persons. Further history reveals that she has recently had some epigastric discomfort.

In the exam room, she is alert and oriented. She seems comfortable, in fact. In addition, you find:

- **Lungs:** Minimal bilateral symmetric wheezing
- **Cardiovascular:** Regular rate and rhythm without murmur, rub, or gallop
- **Abdomen:** Soft and nontender without rigidity, rebound, or guarding. No epigastric discomfort with palpation
- **Extremities:** No pain or swelling of the lower extremities; pulses are 2+ and equal in all 4 extremities

Just as you are getting ready to write a prescription for an antiemetic, the patient breaks out in a sweat. You order an ECG.

View the ECG (**Figure 1**) and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

PR	130
QRSD	101
QT	292
QTc	395
Axes	
P	67
QRS	88
T	107

THE RESOLUTION

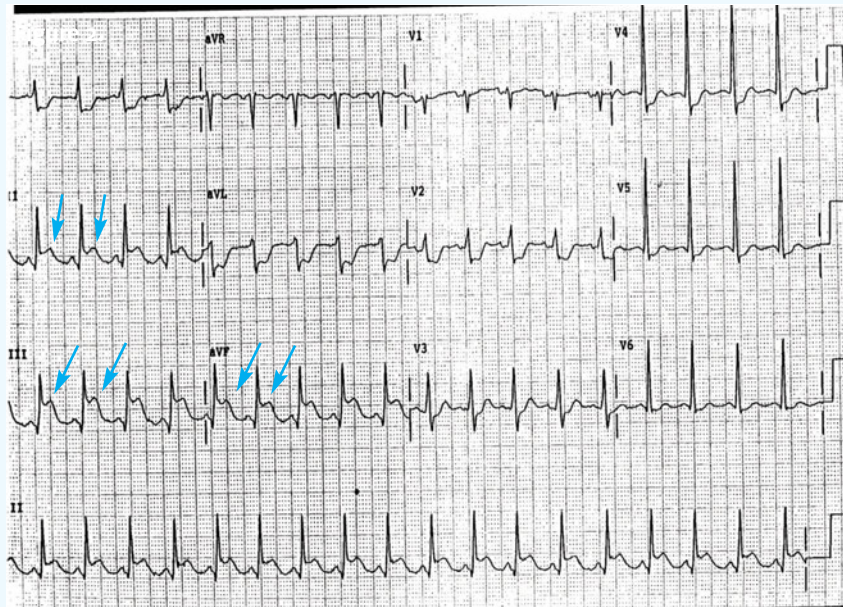


Figure 2. Note: Arrows point to the ST elevations in the inferior leads.

Differential Diagnosis

- A. Sinus tachycardia
- B. Supraventricular tachycardia
- C. Inferior STEMI
- D. Sinus bradycardia
- E. Ventricular tachycardia

Diagnosis

The ECG shows an inferior STEMI (answer C). There is ST elevation in the inferior ECG leads (II, III, aVF), with reciprocal changes consistent with an inferior STEMI.

Learnings

- Symptoms predictive of myocardial ischemia or infarction include:
 - Chest discomfort with exertion
 - Diaphoresis
 - Radiation
 - Vomiting

- Demographic groups where ischemic may present atypically include diabetics, the elderly, and women
- Inferior MIs may present as epigastric pain, and not chest pain
- Inferior STEMIs are typically due to an occlusion in the right coronary artery (RCA) and may affect the right ventricle, resulting in hypotension

Pearls for Initial Management and Considerations for Transfer

- An acute STEMI requires emergent transport to a center that can provide interventional catheterization services
- Place two IV lines, consider oxygen if hypoxic, and place on a cardiac monitor while awaiting transport
- Have patient chew an aspirin while awaiting transport
- If patient is hypotensive, give IV fluids. Extreme caution should be used with sublingual nitroglycerin. ■