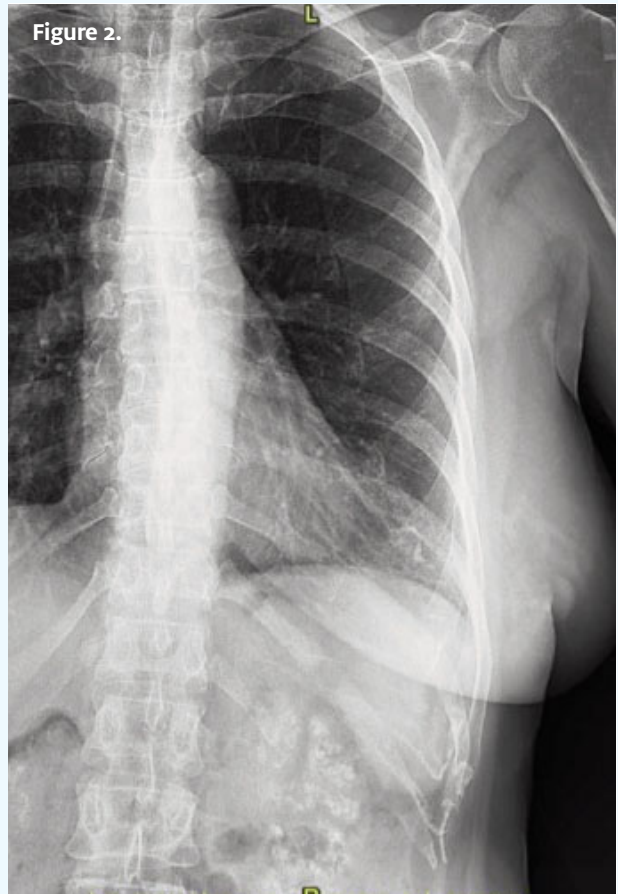
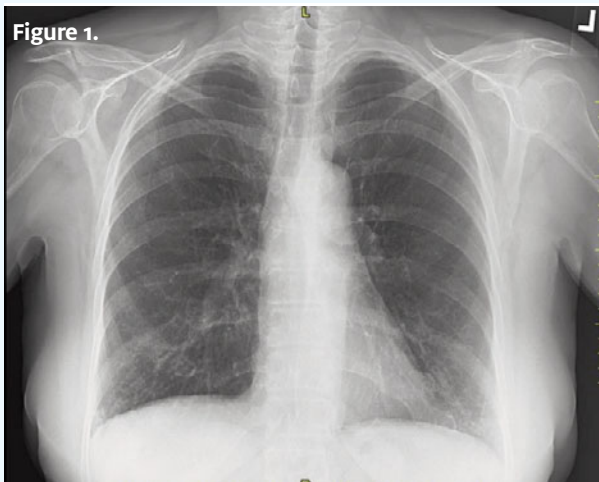




In each issue, *JUCM* will challenge your diagnostic acumen with a glimpse of x-rays, electrocardiograms, and photographs of conditions that real urgent care patients have presented with.

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

A 70-Year-Old Female with ‘Bony’ Pain in Her Chest



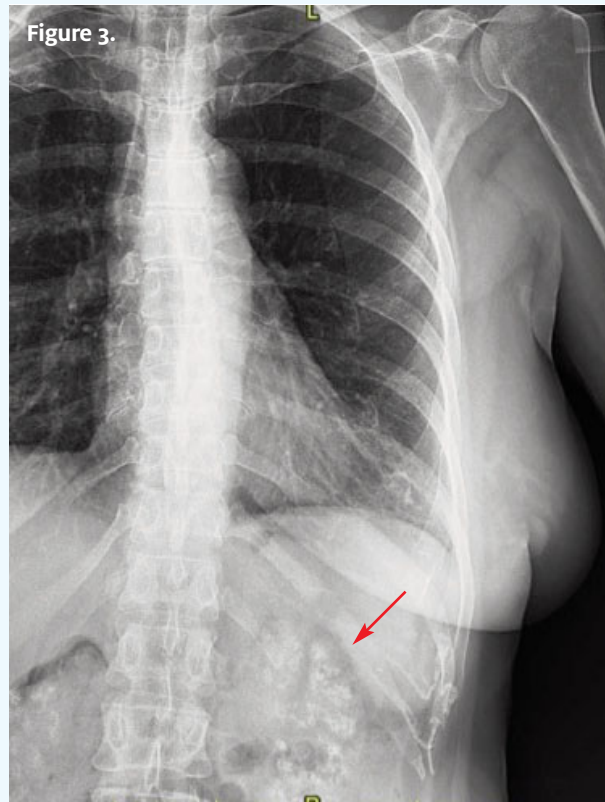
Case

The patient is a 70-year-old female who presents with gradual onset of constant pain in her left lower chest and back. She is unsure when she first noticed the pain, but reports that it has worsened since she experienced a fall several days ago. She denies shortness of breath, diaphoresis, or an exertional component.

View the images taken and consider what the diagnosis and next steps would be. Resolution of the case is described on the next page.

THE RESOLUTION

Figure 1.

**Differential Diagnosis**

- Bartter syndrome
- Dent's disease
- Hyperoxaluria
- Renal manifestation of primary mitochondrial disorders
- Renal nephrocalcinosis

Diagnosis

The images show bilateral, extensive renal medullary parenchymal calcifications, which led to a diagnosis of renal nephrocalcinosis—by definition, abnormal deposition of calcium phosphate and calcium oxalate crystals in the medullary segments of the kidneys. This is not a primary disease, but a secondary manifestation of a variety of diseases, many causing hypercalcemia. Common primary conditions causing nephrocalcinosis include hyperparathyroidism, hypoparathyroidism, hypervitaminosis D, multiple myeloma, prolonged immobilization, sarcoidosis, hyper oxaluria, renal tubular acidosis, Alpert syndrome, Bartter syndrome, sarcoidosis, and other less common causes.

Learnings/What to Look for

- Renal calculus disease often is concomitantly present and may be the presenting feature

- Renal nephrocalcinosis is often asymptomatic but can cause renal failure
- Radiographic findings on plain x-rays reveal abnormal fine granular calcium deposits in the medullary segment of the kidneys, usually bilateral
- Dense deposits can outline the medullary pyramids
- There may be accompanying renal calculus disease
- CT findings are more impressive revealing abnormally dense and calcified medullary segment of the renal parenchyma. Ultrasound usually reveals abnormally hyper-echoic medullary renal pyramids

Pearls for Urgent Care Management and Considerations for Transfer

- Treatment for nephrocalcinosis is aimed at alleviating symptoms and lowering the risk for further build-up of calcium, and includes for the primary disease. General management includes proper hydration, thiazide diuretic and citrate therapy

Acknowledgment: Images and case provided by Teleradiology Specialists, www.teleradiologyspecialists.com.



An 18-Year-Old Female with Sudden Sharp Chest Pain

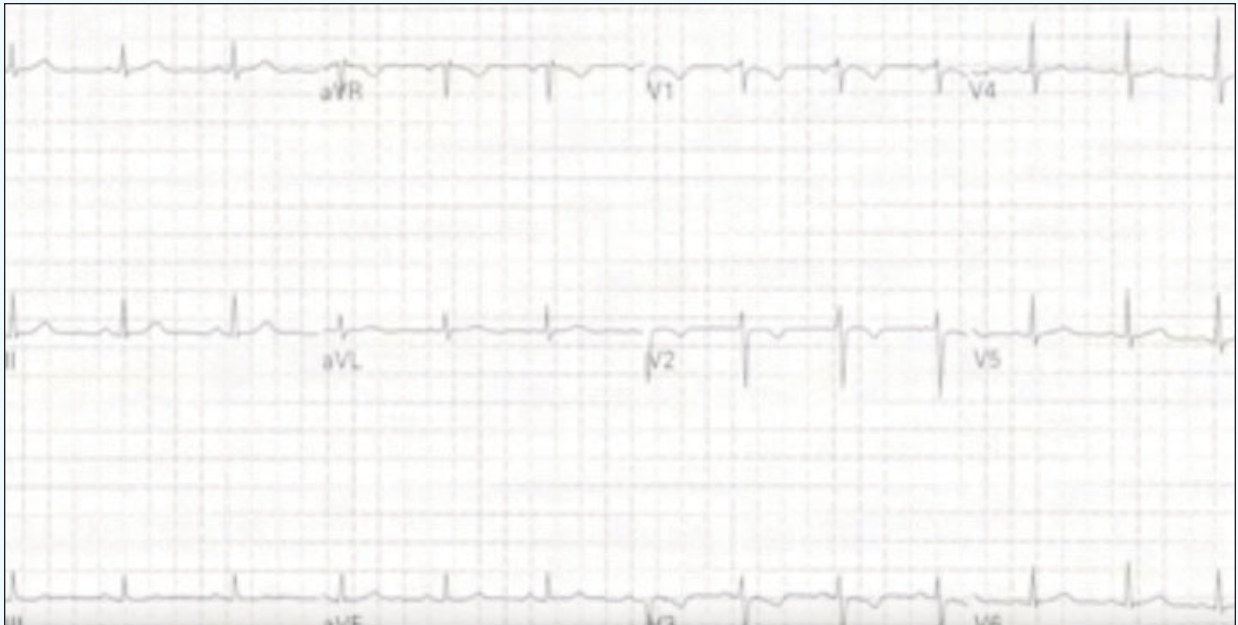


Figure 1.

Case

The patient is an 18-year-old female who presents to urgent care with 1–2 hours of “sharp” chest pain that worsens with range of motion. She reports it began suddenly while lifting boxes at work. Pain is not improved with acetaminophen. She denies exertional discomfort, pleuritic pain, and use of hormone therapy. There is no leg swelling, shortness of breath, or sweating.

Physical exam reveals:

- **General:** Sitting comfortably on the cart, breathing normally

- **Lungs:** Clear bilaterally
 - **Cardiovascular:** Regular rhythm, without m,r,g
 - **Chest:** There is point tenderness over the left lower sternal border
 - **Abdomen:** Soft and NT, no distention, without r/r/g
 - **Ext:** No edema or asymmetry, pulses are 2+ and equal in all extremities, no pain with palpation
- View the ECG and consider what the diagnosis and next steps would be. Resolution of the case is described on the next page.

THE RESOLUTION



Differential Diagnosis

- First-degree AV block
- Wolff-Parkinson-White syndrome (WPW)
- Anterior ischemia
- Posterior MI
- Persistent juvenile T wave pattern

Diagnosis

- This ECG shows normal sinus rhythm with a rate around 80. Regarding the possibilities listed in our differential diagnosis above, the normal PR interval is 120-200 ms, with first-degree AV block being a duration longer than 200 ms (not present on this ECG).
- WPW is defined by a short PR, a delta wave, and a wide QRS complex, which is not present here.
- Could this be an anterior ischemia? There is T wave inversion anteriorly, but this does not make sense with the clinical picture. Additionally, there is no ST elevation.
- How about a posterior MI? There is no ST depression in leads V1-3, as well as no clinical story consistent with ischemia or infarction.
- The correct diagnosis is persistent juvenile T wave pattern, which is a normal variant.

Learnings/What to Look for

- T wave inversions can be present with ischemia, but management of the patient needs to be based on a clinical history as well as the ECG reading
- Juvenile T wave inversions are present with T wave inversion in leads V1-3 which are asymmetric and less than 3 mm in depth
- Present commonly in young women of Afro-Caribbean descent

Pearls for Initial Management and Considerations for Transfer

- Perform an ECG in patients suspected of ischemia, syncope, and concern for arrhythmia, but not in young patients with an obvious musculoskeletal etiology
- Compare to an old ECG, if possible
- Young patients can have ischemia, so inquire about exertional pain, vomiting, diaphoresis, and dyspnea as well as risk factors
- If the T waves are over 3 mm in depth or extend to V4 or further, consider ischemia
- Consider pulmonary embolism in young patients with chest pain
- If there is a question about ischemia, err on the side of caution and phone consult with cardiology or transfer

Acknowledgment: Case adapted from Academic Emergency Medicine Education Masters. MedEDMasters. Persistent juvenile T-waves. Available at: <http://www.mededmasters.com/persistent-juvenile-twi.html>. Accessed April 10, 2019.



A 28-Year-Old Man with Fever, Diaphoresis, and Nausea



Case

The patient is a 28-year-old man who presents to urgent care with a single annular ecchymosis lesion on his leg the morning after returning home from a trip to visit his family's cabin in the mountains of North Carolina. He "thought" he noticed a small insect bite in the vicinity. The lesion has become increasingly painful.

View the photo taken, and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

THE RESOLUTION

**Differential Diagnosis**

- CA-MRSA skin infection
- Brown recluse spider envenomation
- Centipede envenoming
- Coumadin necrosis

Diagnosis

The correct diagnosis is brown recluse spider envenomation. The brown spiders (*Loxosceles* species) are found in temperate and tropical latitudes around the world. They live and build nests in dark areas, either indoors or outdoors.

Learnings

- Symptoms of brown recluse spider envenomation include reddened skin that may be followed by a blister at the site of the bite

- Short of capture or definitive identification, the diagnosis is clinical
- The North American brown recluse (*L. reclusa*) is the most common species responsible for human injury in the U.S., but deaths are rare

Pearls for Urgent Care Management and Considerations for Transfer

- The wound site should be cleaned with soap and water, following by application of a topical antibiotic
- Ice may reduce pain and swelling
- Over-the-counter pain relievers may provide further relief
- If necrosis develops, patients can later follow up with plastic surgery

Acknowledgment: Images courtesy of VisualDx.