INSIGHTS IN IMAGES

CLINICAL CHALLENGE: CASE 1

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 10-Year-Old Girl with Foot Pain After Falling from a Tree

Figure 1.

Figure 2.

Case

A 10-year-old girl presents with pain after falling from a tree, landing on her right foot. On examination, the pain emanates from the second through fifth metatarsals and proximal phalanges.

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

Differential Diagnosis

- Fracture of the distal fourth metatarsal
- Plantar plate disruption
- Sesamoiditis
- Turf toe

Diagnosis

Angulation of the distal fourth metatarsal metaphyseal cortex and hairline lucency consistent with fracture.

Learnings/What to Look for

- Proximal metatarsal fractures are most often caused by crushing or direct blows
- In athletes, an axial load placed on a plantar-flexed foot should raise suspicion of a Lisfranc injury

Pearls for Urgent Care Management and Considerations for Transfer

- Emergent transfer should be considered with associated neurologic deficit, compartment syndrome, open fracture, or vascular compromise
- Referral to an orthopedist is warranted in the case of an intra-articular fracture, or with Lisfranc ligament injury or tenderness over the Lisfranc ligament

Acknowledgment: *Images courtesy of Teleradiology Associates.*

CLINICAL CHALLENGE: CASE 2

A 55-Year-Old Man with 3 Hours of Epigastric Pain

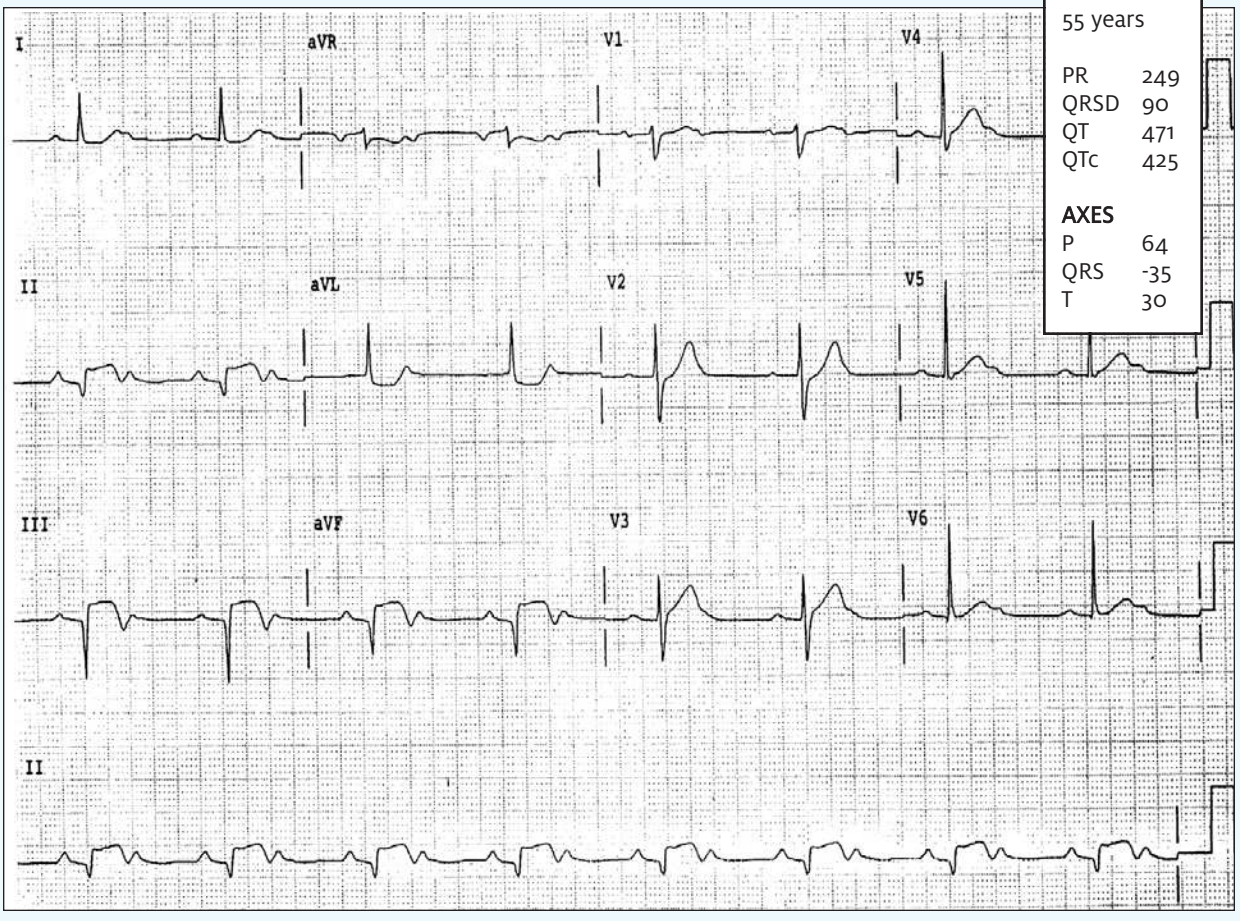


Figure 1.

Case

A 55-year-old man presents to urgent care with 3 hours of epigastric pain which began gradually and is constant. He has associated diaphoresis and minimal dyspnea. There is family history of hypertension and high cholesterol. Personal medical history is significant for diabetes mellitus and hypertension. The patient reports that he stopped smoking 2 years ago.

Upon exam, you find:

- **General:** Alert, breathing comfortable, skin clammy
- **Lungs:** CTAB
- **Cardiovascular:** RRR, without m,r,g
- **Abdomen:** Soft and NT, no distention, without r/r/g, no pulsatile mass
- **Ext:** No peripheral edema, pulses are 2+ and equal in all extremities

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

THE RESOLUTION

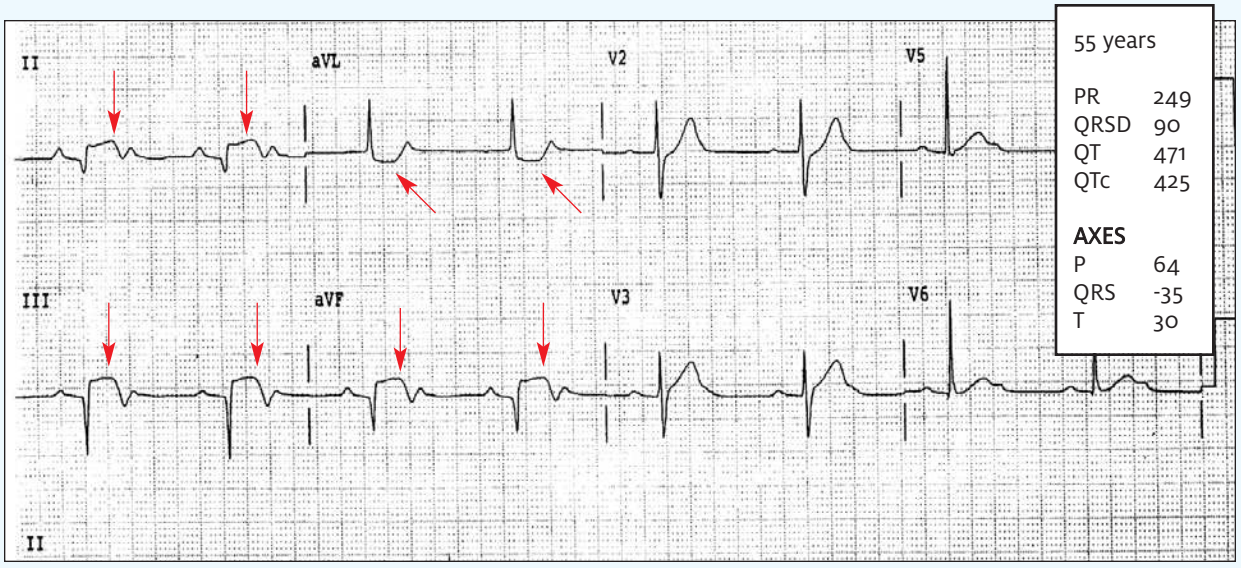


Figure 2. The downward facing arrows show the ST elevation indicating an inferior STEMI. The upward facing arrows highlight the reciprocal changes in lead aVL.

Differential Diagnosis

- Atrial fibrillation
- Multifocal atrial tachycardia
- Third-degree AV block
- Inferior STEMI
- Wolff-Parkinson-White syndrome (WPW)

Diagnosis

This patient has an inferior STEMI.

This ECG is normal sinus rhythm, with a P wave preceding each QRS. The normal PR interval is 120-200 ms; this PR is prolonged at 249, consistent with first-degree AV block, a generally benign finding. But that is only an incidental notation on this ECG, as there are major abnormalities in the ST segments inferiorly.

The inferior leads, II, III, and aVF, are limb leads which reflect changes at the inferior aspect of the heart, typically with blood supply from the right coronary artery. Further confirming the diagnosis is ST depression in lead aVL, called a reciprocal change, increasing the concern for inferior STEMI.

Atrial fibrillation is an irregularly irregular rhythm without defined p waves, not present on this ECG. Multifocal atrial tachycardia is often present in patients with COPD, and though irregular and fast, there *is* a p wave preceding each QRS. Third-degree AV block is confirmed with P waves which are not associated with the QRS complex, usually with a rate in the 30s. WPW is defined by a short PR segment (not present here) and a delta wave which is a gradual upsloping of the initial reflection of the QRS complex, often seen in the lateral precordial leads such as leads V5 and V6.

This ECG shows an inferior STEMI with reciprocal changes as well as first-degree AV block.

Learnings/What to Look for

- Patients with inferior ischemia or STEMI may present with epigastric pain, as opposed to chest pain
- In patients with epigastric pain, inquire about associated symptoms of ischemia/infarction such as diaphoresis, dyspnea, radiation, exertional discomfort, or vomiting
- Reciprocal changes will help to confirm the diagnosis of STEMI, but lack of reciprocal changes does not exclude the diagnosis of STEMI

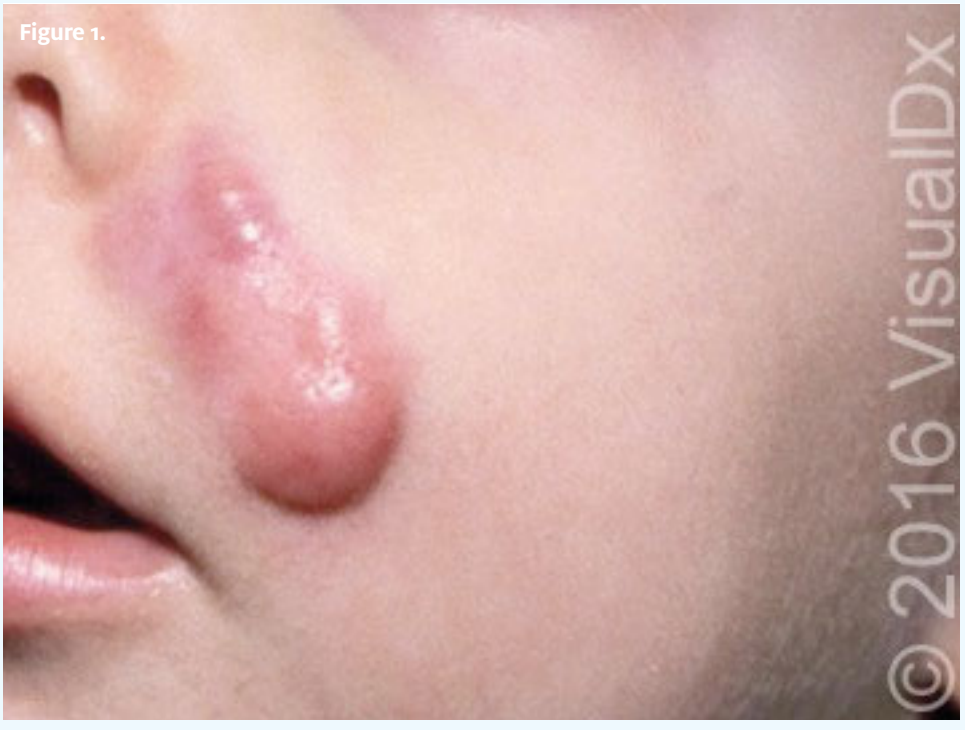
Pearls for Urgent Care Management and Considerations for Transfer

- All patients presenting to the urgent care with STEMI will need emergent transfer to an ED with capability to perform percutaneous coronary intervention
- Inform EMS that the patient has a STEMI to facilitate rapid arrival
- While awaiting transfer the patient should be monitored, ACD at bedside (if available), and 1-2 IVs placed
- Provider-to-provider contact should optimally occur with the receiving facility and a copy of the ECG sent

CLINICAL CHALLENGE: CASE 3

A 2-Year-Old with a Nodule on His Face—and Other Concerning Symptoms

Figure 1.



Case

A mother and father bring their 2-year-old son to your urgent care center because of a smooth nodule on his face, which they noticed the previous day. They also reveal they noticed a small lump on his testicle about a week ago, and that they've been going through diapers faster than usual because he seems to be urinating more frequently over the past few days.

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

Figure 2.

Differential Diagnosis

- Neuroblastoma
- Merkel cell carcinoma
- Rhabdomyosarcoma
- Epidermoid cyst

Diagnosis

This boy has a rhabdomyosarcoma (RMS), a malignant mesenchymal tumor of skeletal muscle derivation. Though rare in adults, it is the most common soft tissue carcinoma in children and adolescents.

Learnings

- Primary cutaneous RMS most often occurs due to invasion from deeper structure or a frank metastatic event; secondary cutaneous RMS represents advanced disease with a poor prognosis
- RMS can occur anywhere in the body, but is more likely to originate in the head and neck; the urinary system (including the bladder); the reproductive system; or the arms and legs
- Genetic syndromes and maternal factors associated with childhood RMS include parental cocaine and marijuana use, Li-Fraumeni syndrome, neurofibromatosis type 1, Beckwith-Wiedemann syndrome, and Costello syndrome

Pearls for Urgent Care Management and Considerations for Transfer

- Emergent transfer is not necessary, but immediate referral to the child's pediatrician is advisable. Ultimately, the child should be seen by a pediatric oncologist as soon as possible

Acknowledgment: *Images courtesy of VisualDx.*