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 59-Year-Old Man with a Painful Elbow After a Fall

Figure 1.

Figure 2.

Case

The patient is a 59-year-old man who presents with pain in his elbow. He says he was experimenting with his son's hoverboard, hanging on to a pole to steady himself. He lost his balance and fell, with his right arm taking the brunt of the impact. His range of motion is limited by both pain and swelling.

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.

Figure 3.

Differential Diagnosis

- Acute avulsion fracture of the radial tuberosity
- Bicipitoradial tendinitis/bursitis
- Partial biceps tear
- Tear at the myotendinous junction

Diagnosis

The x-ray reveals multiple chip avulsion fractures anterior to the radial tuberosity and a flattened radial tuberosity. The patient experienced an acute biceps tendon tear at the insertion site on the radial tuberosity, with avulsion fracture of the radial tuberosity.

Learnings/What to Look for

- Radial tuberosity is a localized bony protrusion below the radial neck. It is a major elbow flexor and forearm supinator
- Biceps tendon avulsion tears occur when excessive tension/force is applied when the arm is extended from a flexed position to the extended position. Tears usually occur at the insertion site on the radial tuberosity
- Clinical history is that of a painful pop, localized pain on supination, and weakness
- Clinical findings are palpable defect in the biceps tendon region, retracted belly of biceps, and loss of flexion and supination strength
- Radiographic findings include avulsion fracture of the radial tuberosity. Diagnosis may be confirmed on MRI study, which reveals a completely torn and retracted biceps tendon from its insertion and attached bone fragment
- Contributory factors include male gender, smoking, use of anabolic steroids, and chronic impingement between the bones

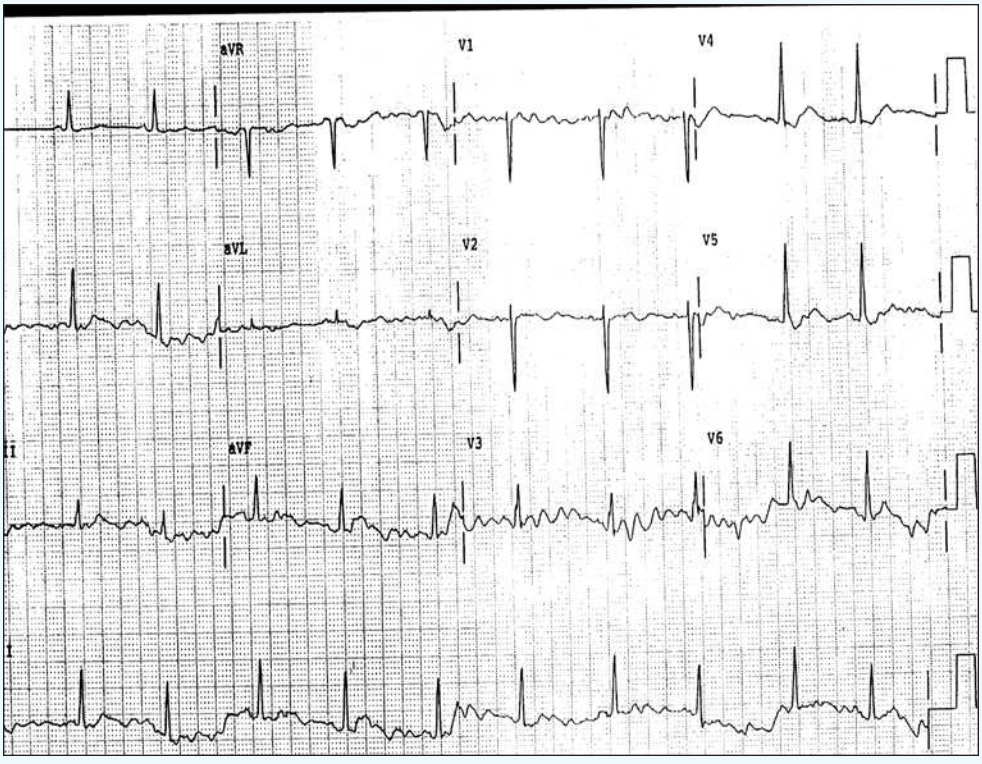
Pearls for Urgent Care Management and Considerations for Transfer

- Treatment in older, sedentary, low-demand patients is usually conservative, with immobilization, analgesia, and later physical therapy. This results in diminished strength in sustained supination, flexion, and the grip strength
- In healthy young patients, surgical repair is indicated with reimplantation of the biceps tendon on the radial tuberosity

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

CLINICAL CHALLENGE: CASE 2

An 88-Year-Old Woman with Several Weeks of Dizziness



88 years	
Female	
PR	
QRSD	77
QT	388
QTc	403
--AXES--	
P	
QRS	50
T	75

Figure 1.

Case

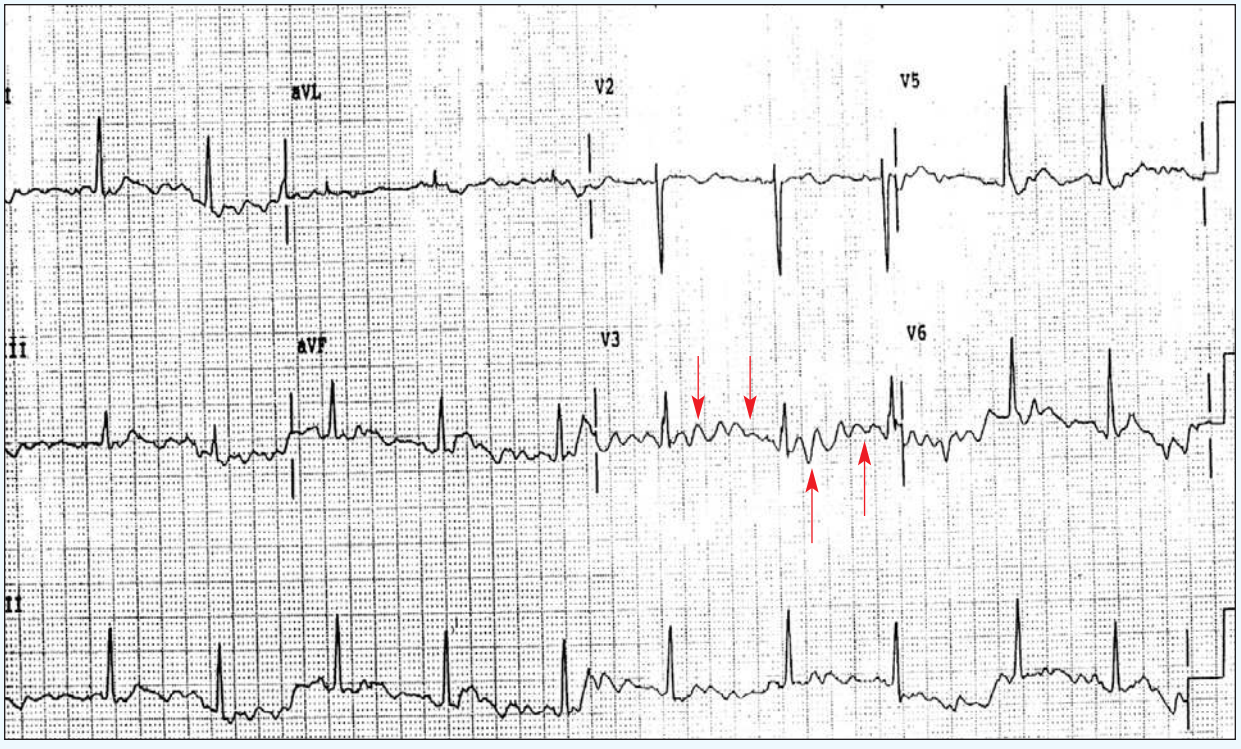
The patient is an 88-year-old woman with 3 weeks of dizziness but no complaints of chest pain/discomfort, shortness of breath, focal neurological signs, or diaphoresis. An ECG is performed by staff prior to clinician evaluation.

Upon exam, you find:

- **General:** Alert and oriented X 3, ambulatory
- **Lungs:** Clear to auscultation
- **Cardiovascular:** RRR without m/r/g
- **Abdomen:** Soft and NT without r/r/g
- **Ext:** Extremities: Normal

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

THE RESOLUTION



Differential Diagnosis

- Atrial fibrillation
- Atrial flutter
- First-degree AVB
- Second-degree AVB
- Baseline artifact

Diagnosis

This ECG shows a baseline artifact.

The ability to interpret an ECG is often dependent on the quality of the tracing. This ECG reveals a regular rhythm, so atrial fibrillation, characterized by an irregularly irregular rhythm, is not occurring.

Interestingly, atrial flutter can sometimes be tricky, as it is a regular rhythm often with a rate of 150 beats per minute, but the rate can be slower if there is a block; however, this can be a silver lining as it is then easier to see the "flutter waves," best seen in lead V1. This is not occurring here.

AV block type 1 would be difficult to discern with this ECG, as there are no p waves seen; so, we cannot determine if the PR interval is >200 ms. We do, however, know that AV block type 2 is not occurring as there are no dropped beats.

Learnings/What to Look for

- The first two things to look for are rate and rhythm; if p waves are not able to be discerned, there should be consideration for atrial fibrillation, a junctional rhythm, a ventricular rhythm, or artifact
- Baseline artifact may occur from a patient who is moving, as well as a patient with a tremor (such as in Parkinson's disease), spinal stimulator, or if the patient is not able to remain still (for example, because of respiratory distress)

Pearls for Urgent Care Management and Considerations for Transfer

- Do not be nice! Ask for the ECG to be repeated if you do not have reliable data on which to base your decision
- With a "wavy" baseline, first look for p waves and for the rate and rhythm. Atrial fibrillation is an irregularly irregular rhythm
- Correlate ECG findings with the patient's clinical condition

CLINICAL CHALLENGE: CASE 3

A 47-Year-Old Female Cancer Patient with Red, Flaccid Bullae on Her Leg

Figure 1.

Case

The patients is a 47-year-old woman undergoing chemotherapy for breast cancer with 1 day of several red, flaccid bullae on her leg as well as fever, cough, and shortness of breath.

View the image 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

- Aspergillosis
- Atypical mycobacterial infection
- Mucormycosis
- Candida sepsis

Diagnosis

This patient was diagnosed with aspergillosis, a hyaline mold found worldwide in decaying vegetation, soil, water, food, and plants. Inhalation of *Aspergillus conidia* is the most common mode of acquisition. Dissemination can lead to skin involvement, as well as central nervous system, liver, spleen, heart, and bone involvement.

Learnings/What to Look for

- Cutaneous *aspergillosis* begins with red papules that form pustules. The pustules ulcerate and leave a central eschar evocative of the diagnosis
- This is an indolent process that develops over months or years (hence it's alternate name, chronic necrotizing aspergillosis)
- Many infectious and noninfectious etiologies are possible in immunocompromised patients with pulmonary nodules. Organisms to consider include *Nocardia* species, mycobacterial species, *Legionella* species, cryptococcal infection, and endemic fungi
- Septic emboli are possible, especially in patients with indwelling central venous catheters

Pearls for Urgent Care Management and Considerations for Transfer

- First-line treatment for aspergillosis is voriconazole. Other prescription antifungal medications used as second-line treatment include lipid amphotericin formulations, posaconazole, isavuconazole, itraconazole, caspofungin, and micafungin

Acknowledgment: *Images courtesy of VisualDx (www.VisualDx.com/JUCM).*