



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 e-mail the relevant materials and presenting information to editor@jucm.com.

A 15-Year-Old Boy with a Painful Elbow After a Baseball Game

Figure 1.



Figure 2.

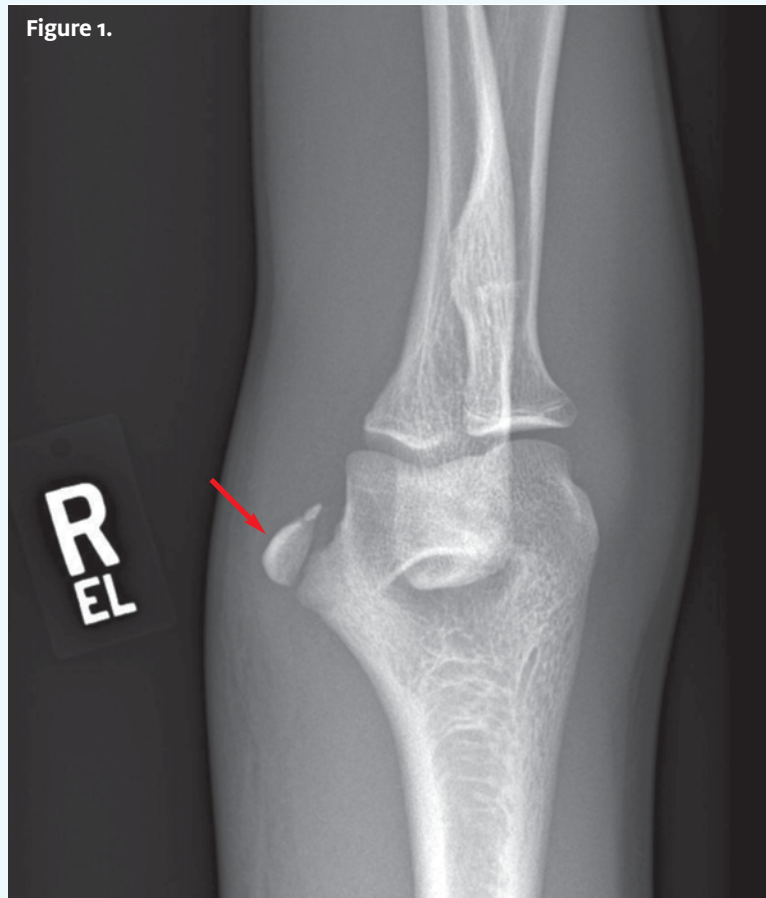


Case

The patient is a 15-year-old boy who presents to urgent care with a painful medial right elbow he and his parents attribute to pitching in a baseball game earlier in the day.

View the images 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**

- Displaced avulsion fracture, medial epicondyle
- Medial epicondylitis (golfer's elbow)
- Apophysitis of the medial epicondyle (little league elbow)
- Supracondylar fracture
- Normal apophysis

Diagnosis

The correct diagnosis is a significantly displaced avulsion fracture of the medial epicondyle. Note on the lateral x-ray, there is a joint effusion. On the AP x-ray, there is a large fragment avulsed from the medial epicondyle with associated soft tissue swelling.

Learnings/What to Look for

- Medial epicondyle avulsion is typically seen in adolescent throwers
- In contradistinction to the repetitive trauma resulting in apophysitis (little league elbow), this fracture usually results

from a single high-force valgus trauma and athletes often hear a "pop"

- It is important to distinguish an avulsion fracture from a widened (apophysitis) or normal growth plate

Pearls for Urgent Care Management

- Medial epicondyle fractures are best immobilized with a posterior long arm splint and arm sling
- Surgical fixation is required for injuries with complete neurologic deficit, incarcerated fragments, open wounds, or significant displacement
- Orthopedic follow-up is always necessary within 7 days. Possible surgical cases should be referred for same- or next-day evaluations
- Surgical reduction is often preferred for mild-moderate displacement in overhead adolescent athletes (swimmers, pitchers) or weightbearing athletes (gymnasts) who will continue to have valgus instability if the fragments is not stabilized

Acknowledgment: Images and case presented by Experity Teleradiology (www.experityhealth.com/teleradiology).



A 68-Year-Old Woman with a Rash of Several Weeks' Duration



Case

The patient is a 68-year-old woman who presents with a rash she says developed on her trunk over a span of several weeks. On examination, there were multiple confluent, orange-red plaques on the trunk and arms with "islands of sparing" within them. The rash had a primarily truncal distribution and was pruritic. She was feeling well otherwise.

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

THE RESOLUTION

**Differential Diagnosis**

- Seborrheic dermatitis
- Pityriasis rubra pilaris
- Atopic dermatitis
- Tinea corporis

Diagnosis

This patient was diagnosed with pityriasis rubra pilaris (PRP), which is characterized by an acute cutaneous eruption that is often accompanied by pruritis and/or pain. Etiology of PRP has not been clearly defined, though onset has been associated with myositis, myasthenia gravis, hypothyroidism, HIV, infection, and malignancy. In addition, ultraviolet exposure and minor skin trauma preceding onset have been reported. The majority of PRP cases are acquired (as opposed to heritable), the incidence of which occurs in two peaks: during the first and second decades of life, and during the sixth decade.

Learnings/What to Look for

- Classic cutaneous lesions include follicular papules on an erythematous base coalescing to form large, orange-red plaques with characteristic islands of sparing (as seen in this patient)
- PRP commonly (but not always) begins on the scalp and rapidly spreads in a craniocaudal direction and has the potential to quickly progress to erythroderma over several weeks' time

Pearls for Urgent Care Management

- Emollients, topical lactic acid, topical corticosteroids, or oral retinoids may be useful in relieving symptoms
- Scaling may be reduced with emollients or 12% lactic acid with an occlusive dressing
- Patients resistant to topical treatments may require oral acitretin or methotrexate
- Advise patients that resolution may occur slowly over several years

Acknowledgment: Images and case presented by VisualDx (www.VisualDx.com/JUCM).



A 27-Year-Old Male with Chest Pain and No Reported Medical History

Chamber Abnormalities: Pathologic or Not?

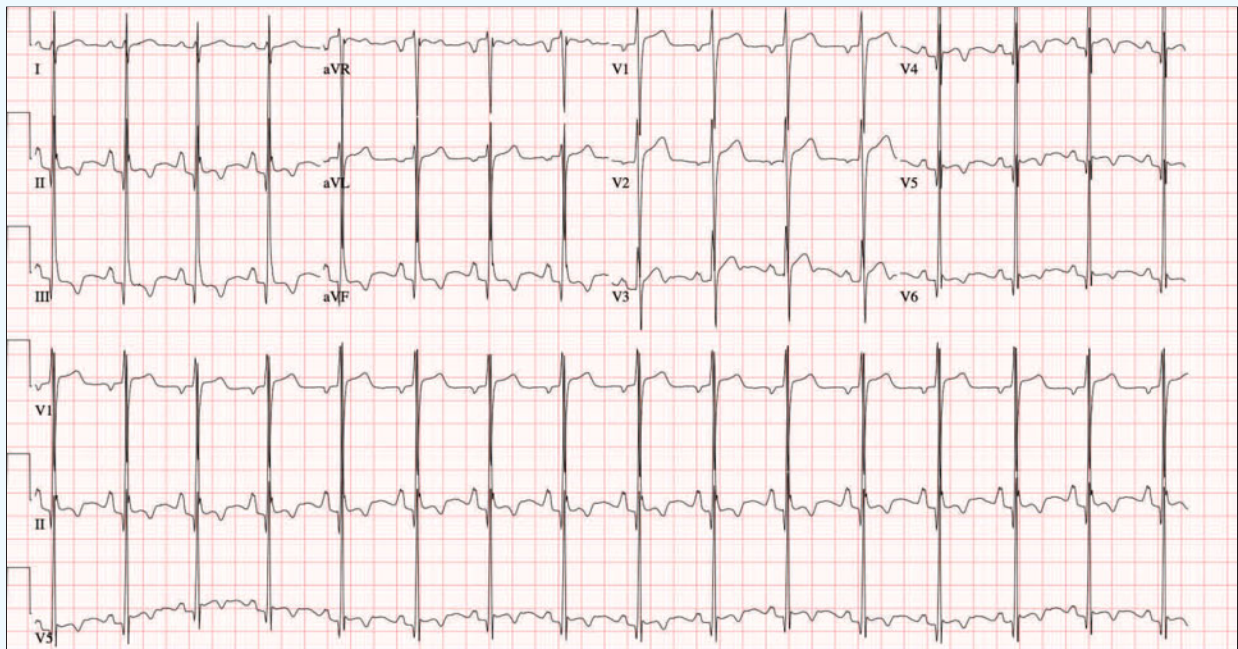


Figure 1.

A 27-year-old male with no reported medical history presents with chest pain. He relays several weeks of intermittent symptoms which started after lifting heavy boxes. The pain is sharp, located in the mid-chest and is otherwise non-tearing, non-pleuritic, non-positional and not associated with exertion.

On examination, the patient is in no acute distress, and appears lean without cachexia or wasting. The pain is reproduced with shoulder extension. It resolves with acetaminophen.

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

(Case presented by Tom Fadial, MD, McGovern Medical School, Department of Emergency Medicine, The University of Texas Health Sciences Center of Houston.)

THE RESOLUTION

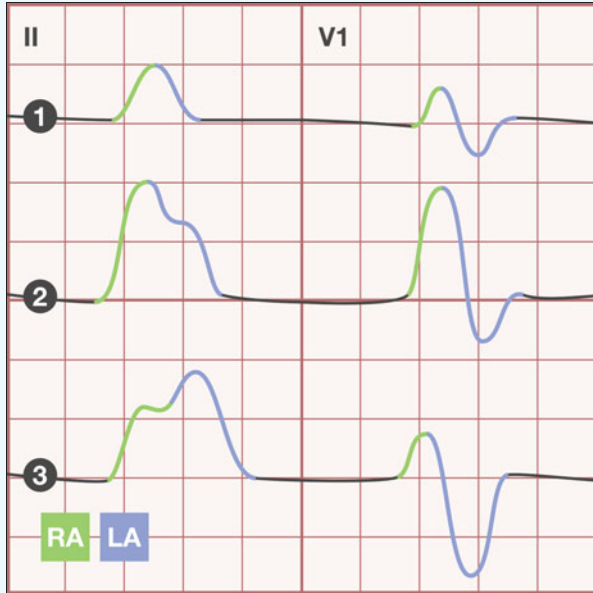


Figure 2.

Differential Diagnosis

- Left ventricular hypertrophy
- Hypertrophic cardiomyopathy
- Hypertension
- Aortic stenosis
- Body habitus

Diagnosis

The correct diagnosis is body habitus. The ECG illustrates normal sinus rhythm at a rate of 96 bpm. There is rightward axis deviation (RAD) with positive deflections in II, III, and aVF with a nearly iso-electric QRS in lead I. The PR, QRS, and QT intervals are normal.

Evaluating for chamber enlargement, we note an increased amplitude P-wave in the inferior leads measuring between 2.5 and 3 mm. Right atrial abnormality (or enlargement) is identified with a P-wave amplitude of > 2.5 mm in lead II or >1.5 mm in V1/2.

Next, it is readily apparent that the QRS amplitudes are large—so much so that the peak in V4 extends well beyond the tracing paper. While this may increase the suspicion for left ventricular hypertrophy (LVH), several ECG criteria exist for a more definitive diagnosis:

1. R wave in aVL >11 mm
2. S wave in V1 + R wave in V5/6 ≥35 mm
3. R wave in aVL + S wave in V3 >28 mm in males, or >20 mm in females

LVH is also commonly associated with some of the ST-segment and T-wave changes seen in this ECG, including the downsloping ST-segment depression and T-wave inversions most evident in V5/V6.

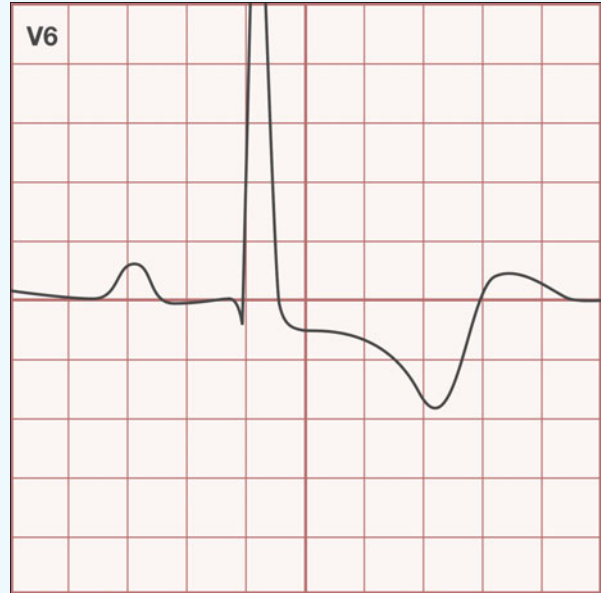


Figure 3.

Learnings/What to Look for

Just as increased soft-tissue impedance from adipose or edema can influence the surface ECG by dampening the conduction of electrical impulses, an especially slender body habitus can have the inverse effect. In this case, the various electrocardiographic abnormalities were simply amplifications of normal cardiac activity. One potentially helpful hint is the combination of LVH with RAD—the former when truly representative of ventricular hypertrophy being more commonly associated with leftward axis deviation.

Key points

- Right atrial abnormality or enlargement: P-wave in II >2.5 mm or >1.5 mm in V1/2
- Left ventricular hypertrophy: R-wave in aVL >11 mm
- LVH repolarization changes include downsloping ST-segment depression and T-wave inversion

Pearls for Urgent Care Management

For asymptomatic or low-risk patients with slender body habitus and chamber abnormalities on ECG, outpatient follow-up is reasonable.

Resources

1. Cooper BL, Giordano JA, Fadiel TT, Reynolds CE. ECG Stampede: A case-based curriculum in electrocardiography triage. 1st ed. Houston, TX: Null Publishing Group, 2021.
2. Harrigan RA, Jones K. ABC of clinical electrocardiography. Conditions affecting the right side of the heart. *BMJ*. 2002 May 18;324(7347):1201-1204.

