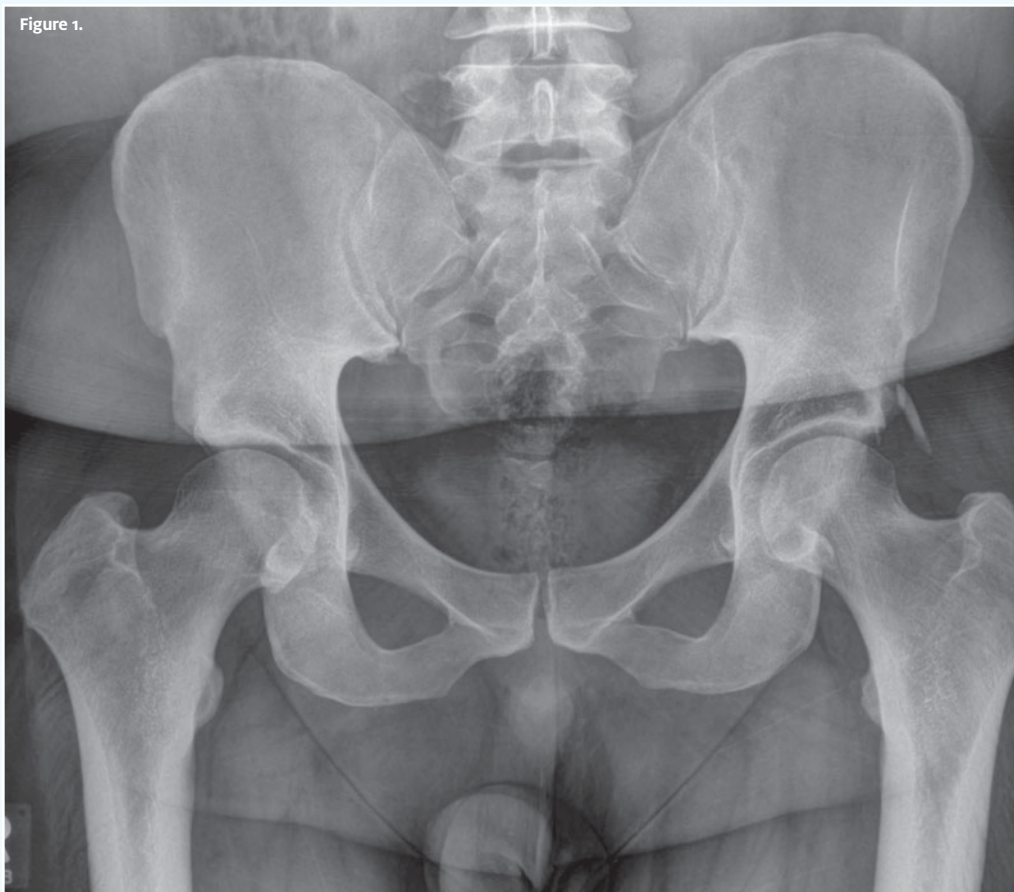




In each issue, *JUCM* will challenge your diagnostic acumen with a glimpse of x-rays, electrocardiograms, and photographs of conditions that real urgent care patients have presented with.

If you would like to submit a case for consideration, please e-mail the relevant materials and presenting information to [editor@jucm.com](mailto:editor@jucm.com).

## A 40-Year-Old with Back Pain After a Fall

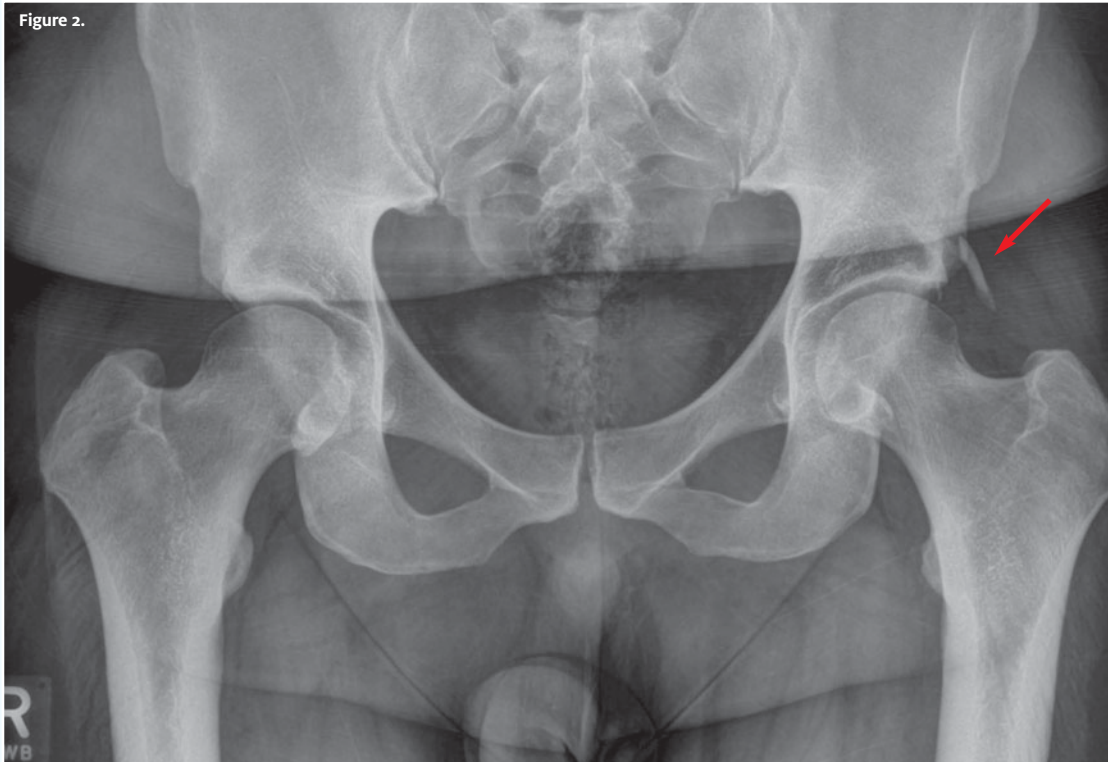


### Case

The patient is a 40-year-old male who presents to urgent care with lower-left back pain after an alumni soccer game during his high school reunion weekend.

View the image 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**

- Accessory ossicle
- Unfused ossification center
- Avulsion fracture of the anterior inferior iliac spine

**Diagnosis**

The image shows an irregular crescentic fragment adjacent to the anterior inferior iliac spine (bone donor site). The correct diagnosis is an avulsion fracture, anterior inferior iliac spine.

**Learnings/What to Look for**

- Typically, pelvic and hip apophyseal injuries occur in the 14- to 25-year age range
- Usually kicking sports such as soccer are involved, though such injuries are also seen in gymnasts and athletes who engage in jumping sports (such as in track and field)
- Anterior inferior iliac spine avulsion fractures are commonly the result of sudden contraction of the rectus femoris

**Pearls for Urgent Care Management**

- Treatment is most often nonoperative and includes initial bedrest, ice, and activity modification
- Hip flexed for 2 weeks with the position lessening stretch of the rectus femoris muscle and apophysis
- Follow with guarded weightbearing for 4 weeks and careful return to activity as full recovery may take 4 months

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



## A 9-Year-Old Girl with a New Rash on Her Face



### Case

A mother brings her 9-year-old girl daughter to your urgent care center because she's concerned about a rash that developed on the girl's face over the past week. On examination, you find a fine, scaly, pigmented plaque with pink and violaceous hues. The lesion has a linear configuration. The patient and her family have a history of atopy, but the girl is well-appearing and has no systemic symptoms.

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

**Differential Diagnosis**

- Cutaneous larva migrans
- Lichen striatus
- Lichen planus
- Linear cutaneous lupus erythematosus

**Diagnosis**

This patient was diagnosed with lichen striatus, an uncommon, self-limited skin disorder of unknown origin that most commonly occurs in children 5 to 15 years of age. In this patient, the vertical, flesh-colored, linear pattern along the facial lines of Blaschko helps to make the visual diagnosis.

**Learnings/What to Look for**

- There are few linear rashes in childhood. It's important to understand the characteristics of the rash and look for other systemic findings to differentiate from other linear lesions
- The rash of lichen striatus features erythematous or flesh-colored smooth or scaly papules, sometimes with vesicopapules, in a narrow linear pattern along the lines of Blaschko
- Lichen striatus is more common in patients with atopic backgrounds, such as those with a personal or family history of atopic dermatitis, asthma, or allergic rhinitis. The rash most commonly occurs on the extremities, but can also occur on

the trunk, buttocks, and face. Trauma, drug use, immunization, hypersensitivity reactions, viral infections, and pregnancy have been identified as potential causes of lichen striatus

**Pearls for Urgent Care Management**

- The urgent care provider should differentiate lichen striatus from other rashes that feature linear patterns. Cutaneous larva migrans is caused by worm infection and more often serpiginous and associated with outdoor travel. Linear lichen planus is more common in adults, more violaceous, and may have scattered lesions in addition to linear formation. Linear cutaneous lupus erythematosus is a lupus variant most common in children and often associated with other systemic or mucocutaneous features of lupus
- Lichen striatus is self-limited and no treatment is necessary. Topical steroids or emollients can be used to treat itching if it is present, but are typically not needed
- The lesions typically resolve in several months without scarring, although sometimes hypopigmentation is present. Dermatology follow-up is recommended for lesions that feature other unique characteristics or that don't resolve after several months

**Acknowledgment:** Images and case presented by VisualDx ([www.VisualDx.com/JUCM](http://www.VisualDx.com/JUCM)).



## An 83-Year-Old Female with CHF, A-Fib, and New-Onset Confusion and Syncope

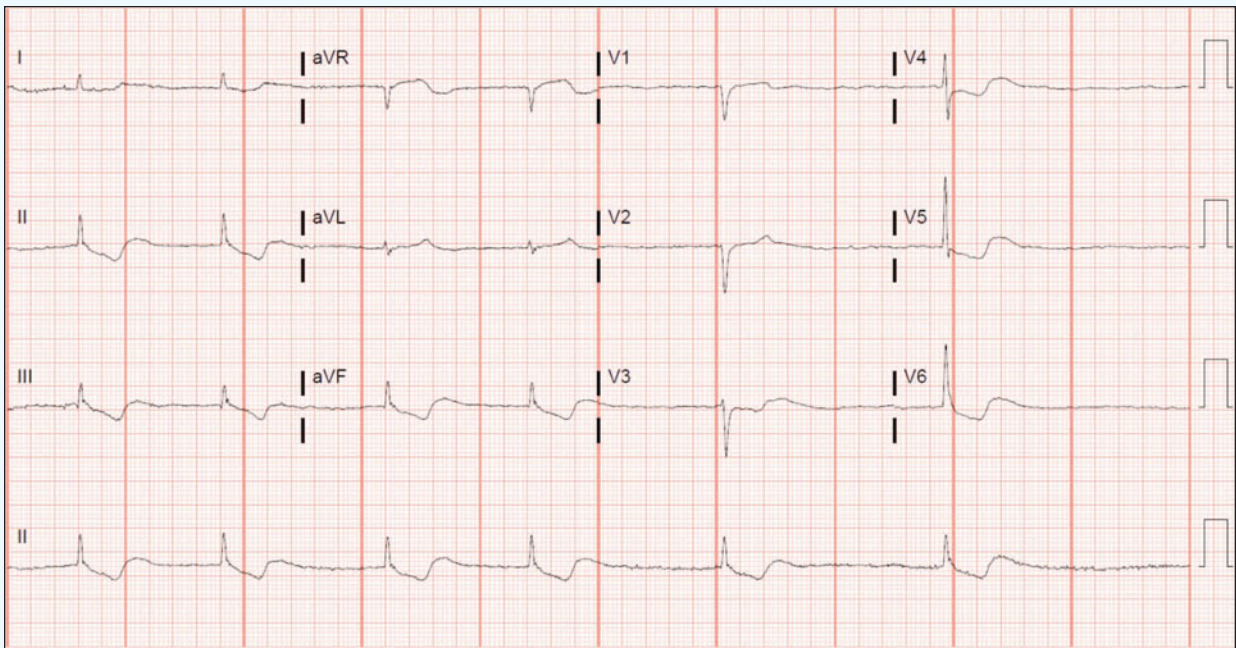


Figure 1. Initial ECG

An 83-year-old female with past medical history of congestive heart failure and atrial fibrillation presents to urgent care with confusion and syncope. She reports intermittent dizziness, but denies chest pain or shortness of breath. There is no evidence of trauma on exam.

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

(Case presented by Jonathan Giordano, DO, MEd, McGovern Medical School Department of Emergency Medicine, UTHealth Houston.)

## THE RESOLUTION

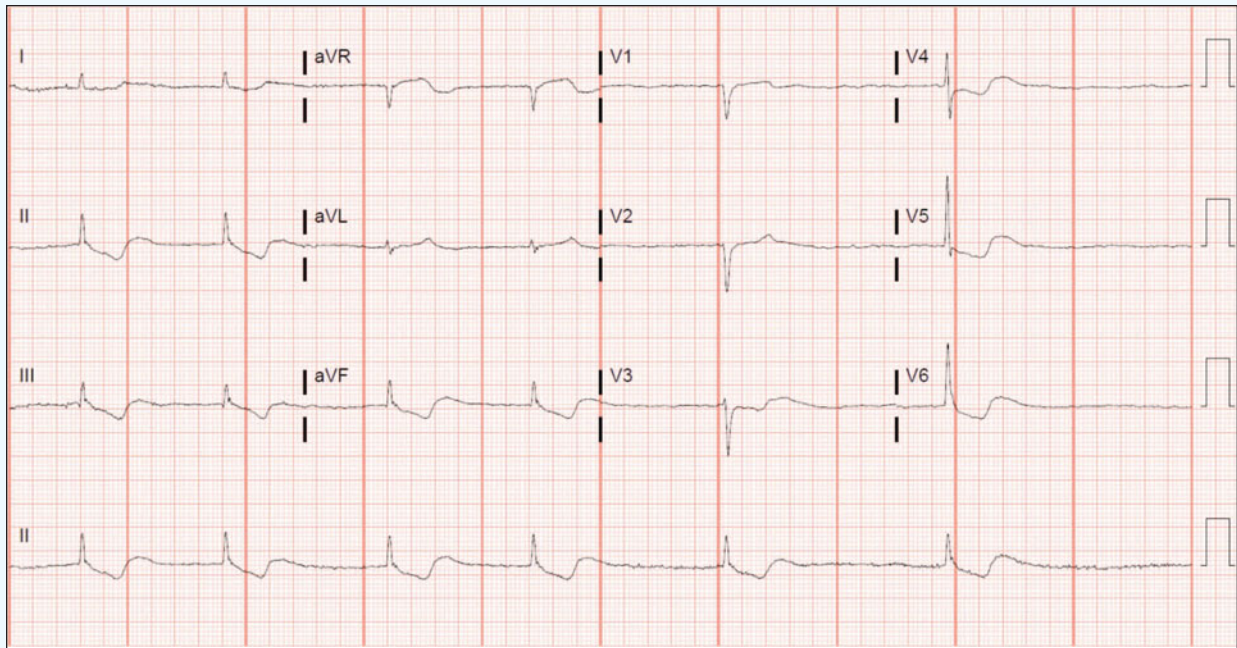


Figure 1. Initial ECG

### Differential Diagnosis

- Hyperkalemia
- Hypokalemia
- Digoxin toxicity
- Myocardial infarction
- Myocarditis

### ECG Analysis

This ECG shows atrial fibrillation with a rate of 36 bpm. There is a narrow QRS interval followed by downsloping, “scooped” ST-segments predominantly seen in the anterolateral and inferior leads (resembling Salvadoré Dalí’s mustache)—a finding that does not necessarily imply toxicity. These scooped ST-segments are followed by a biphasic t-wave, with an initial negative deflection and terminal positive deflection.

Overall, the findings of slow atrial fibrillation and the scooped ST-segments are consistent with digoxin toxicity.

Derangements in serum potassium can cause a variety of changes to the ECG. ECG changes due to hyperkalemia include peaked T-waves, P-wave flattening, prolonged PR interval, widened/abnormal QRS morphology, bradyarrhythmias, and a sine wave appearance. Changes due to hypokalemia include prolongation of the PR interval, ST depressions, T-wave flattening/inversion, U-waves, and an appearance of a long QT interval (due to fusion of the T- and U-waves).

The combination of features that favor digoxin toxicity include atrial fibrillation, narrow complex QRS interval, and a “scooped” morphology of the ST-segments. While ischemia and/or myocarditis can cause ST-segment changes, neither the history nor the ST-segment morphology supports these diagnoses.

### Discussion

Digoxin is a cardiac glycoside most commonly used in the management of systolic heart failure and atrial arrhythmias. It is a reversible inhibitor of the Na-K ATPase pump, primarily in the myocardium, leading to increased intracellular calcium and enhanced contractility. In toxic doses, digoxin can cause a multitude of arrhythmias owing to increased automaticity, shortened refractory period, and decreased AV nodal conduction.

Digoxin toxicity can cause virtually any dysrhythmia, but common dysrhythmias associated with digoxin toxicity are: frequent PVCs, slow atrial fibrillation, sinus bradycardia, junctional rhythm, atrial tachycardia, AV blocks, and ventricular tachycardia (bidirectional or polymorphic).

Digoxin toxicity can be acute (accidental or nonaccidental overdose) or chronic, typically associated with renal failure, drug-drug interactions, or supratherapeutic dosing. Digoxin toxicity affects multiple organ systems and can manifest clinically as nausea/vomiting, anorexia, blurry vision, yellow/green color disturbances, seeing halos, palpitations, syncope, confusion, dizziness, hallucinations, and fatigue.

THE RESOLUTION

The mainstay of treatment is digoxin-specific antibody fragments (Fab) and is indicated with cardiac manifestations of toxicity. Additionally, concurrent derangements to serum potassium can be seen in digoxin toxicity and must be carefully monitored/managed.

**Learnings/What to Look for**

- Downsloping, scooped ST-segments resembling Salvadore Dalí’s mustache are a common ECG effect of digoxin and do not (in and of themselves) imply toxicity
- Digoxin toxicity can cause virtually any dysrhythmia, and toxicity is a life-threatening condition
- A careful medication history should be taken to help identify potential digoxin toxicity
- Digoxin toxicity can present with both cardiac and extracardiac manifestations

**Pearls for Urgent Care Management**

- Urgent care patients in whom digoxin toxicity is a possibility should be emergently transferred to a facility capable of administering digoxin-specific antibody fragments
- Serum digoxin levels do not always correlate with degree of clinical toxicity
- Identify potential concomitant potassium derangements early in the resuscitation and correct them
- Intravenous atropine or transcutaneous cardiac pacing may be used in patients with high-grade symptomatic AV blockade

**Resources**

- Ehle M, Patel C, Giugliano R. Digoxin: clinical highlights: a review of digoxin and its use in contemporary medicine. *Crit Pathw Cardiol.* 2011;10(2):93-98.
- Gheorghide M, Adams KF Jr, Colucci WS. Digoxin in the management of cardiovascular disorders. *Circulation.* 2004;109(24):2959-2964.

Case courtesy of ECG Stampede (www.ecgstampede.com).



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