



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@juqm.com](mailto:editor@juqm.com).

## A 47-Year-Old with Pain After Twisting His Ankle

Figure 1.



Figure 2.



### Case

The patient is a 47-year-old male who presents with a primary complaint of right ankle pain after a pick-up game of basketball. He reports he twisted his ankle when he landed on another player's foot.

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

Figure 1.



Figure 2.



**Differential Diagnosis**

- Tuberos sclerosi
- Osteoblastic bone metastasi
- Osteopathia striata
- Osteopoikilosi
- Tuberos sclerosi

**Diagnosis**

The images reveal well-circumscribed sclerotic foci in the appendicular skeleton consistent with multiple bone islands. This patient was diagnosed with osteopoikilosis, also known as spotted bone disease, a sclerosing bony dysplasia characterized by multiple benign bone islands (enostoses) which are focal deposits of dense lamellar bone. This is an incidental finding.

**Learnings/What to Look for**

- Osteopoikilosis is a rare inherited benign condition found incidentally on skeletal rays
- Bone lesions are randomly distributed in a symmetric fashion
- Osteopoikilosis is seen in the appendicular skeleton (hands, feet, long bones, pelvis) with sparing of the axial skeleton (ribs, skull, vertebrae)

**Pearls for Urgent Care Management**

- Osteopoikilosis does not affect bone strength
- Treatment is limited to pain management with nonsteroidal anti-inflammatory drugs and analgesics

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



## A 43-Year-Old Man with a Painful, Purulent Finger



### Case

The patient is a 43-year-old male who presents with a painful collection of pus near his fingernail. He reported that it had developed over the past day. On examination, a large, yellow-green superficial pus collection was seen at the proximal nail fold with surrounding erythema and edema. The patient mentioned that he had a home renovation business and that it was common for him to experience mild injuries such as splinters on his hands. The patient was immunocompetent and was not currently on any medications.

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

## THE RESOLUTION

**Differential Diagnosis**

- Nail candidiasis
- Felon
- Bacterial paronychia
- Nail bed injury

**Diagnosis**

This patient was diagnosed with bacterial paronychia. Acute paronychia is defined as inflammation of the proximal or lateral nail folds for fewer than 6 weeks. Pain, swelling, and redness are the cardinal symptoms, sometimes accompanied by abscess formation.

Acute paronychia frequently arises from trauma to one of the nail folds, resulting in compromise of the physiologic barrier to entry of microorganisms. Inflammation may proceed to bacterial infection, resulting in pus.

**Learnings/What to Look for**

- In some cases, the abscess tracks under the nail plate; if not treated quickly, it can result in permanent damage to the nail matrix

- Examples of inciting trauma include foreign bodies, such as splinters; manipulations, such as manicures or pedicures; ingrown nails; fingernail biting; finger sucking in children; or "hangnail" removal
- Occasionally, acute paronychia arises as a painful exacerbation of chronic paronychia, which is now understood to be a localized form of chronic irritant or allergic dermatitis
- Certain drugs, including retinoids (isotretinoin, acitretin), methotrexate, antiretroviral protease inhibitors (indinavir, lamivudine), and epidermal growth factor receptor inhibitors (cetuximab, gefitinib, lapatinib) can cause drug-induced paronychia, in some cases with associated periungual lobular capillary hemangioma (pyogenic granuloma)

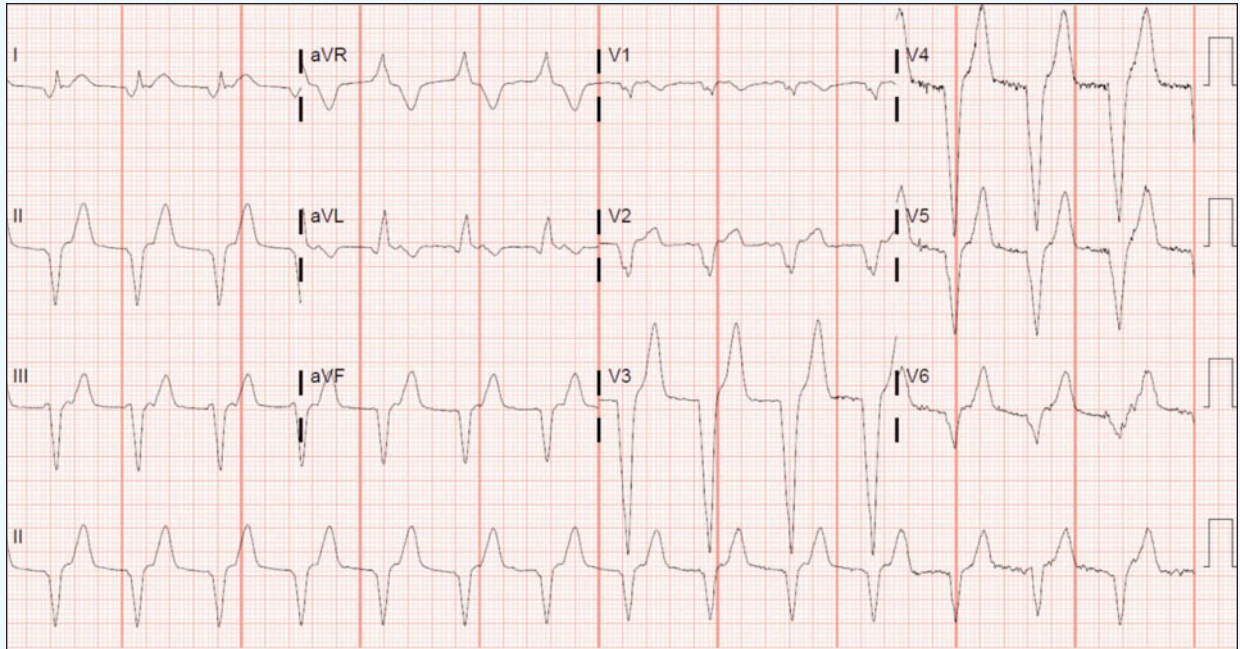
**Pearls for Urgent Care Management**

- Mild paronychia calls for conservative treatment (warm water soaking, topical antibiotics with or without topical steroids)
- Abscesses call for drainage
- Specific bacteria predominate in trauma-related acute paronychia; indicated antibiotic treatment for infection with *Staphylococcus aureus*, *Streptococcus pyogenes*, and anaerobic bacteria derived from the oral flora is warranted

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



# A 36-Year-Old Male with Sudden-Onset Substernal Chest Pain



**Figure 1.** Initial ECG

The patient is a 36-year-old male with a history of tobacco and alcohol use who presents to urgent care with sudden-onset substernal chest pain and shortness of breath that began 1 hour prior to arrival.

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 Joshua Fan, MD, The University of Texas Health Science Center at Houston McGovern Medical School.)*

## THE RESOLUTION

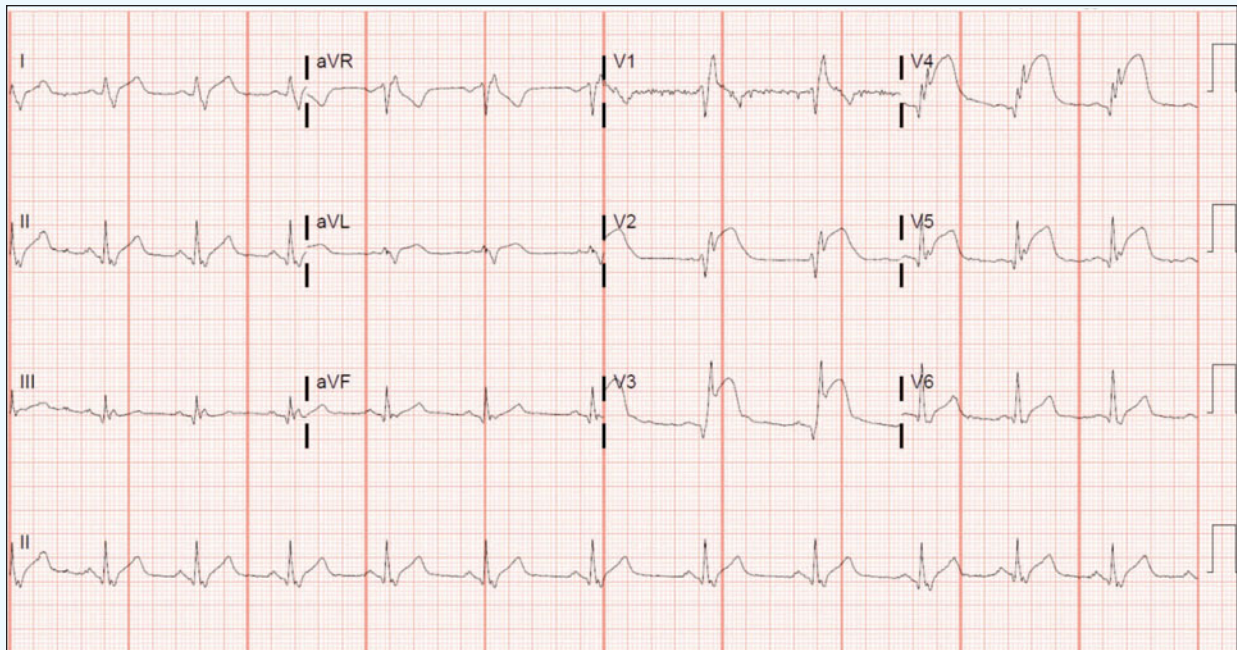


Figure 2. Anterolateral ST-elevation myocardial infarction

#### Differential Diagnosis:

- Ventricular tachycardia
- Left bundle branch block
- Accelerated idioventricular rhythm
- Supraventricular tachycardia with aberrancy
- Hyperkalemia

#### Diagnosis

This patient was diagnosed with accelerated idioventricular rhythm. The ECG shows a wide QRS complex (>120 ms) with a regular rhythm at a rate of 90 beats/min. There are no P waves preceding the QRS complexes, suggesting an ectopic impulse-generating focus. This ECG is consistent with an accelerated idioventricular rhythm (AIVR).

AIVR is a rhythm that occurs under conditions of enhanced automaticity. An enhanced ectopic ventricular pacemaker outpaces more superior pacemakers (eg, sinus node) and, thus, becomes the dominant pacemaker. It occurs at a rate faster than ventricular escape, but slower than ventricular tachycardia (ie, between 50 and 110 beats/min). AIVR can occur for many reasons, including electrolyte abnormalities and drug toxicity (eg, digoxin); however, it occurs most commonly in the setting of reperfusion—that is, after myocardial infarction or cardiac arrest. The prognosis is not adversely affected because the ventricular rate is in the normal range.<sup>1,2</sup>

AIVR is frequently mistaken for ventricular tachycardia since

both have wide, regular complexes and can have signs of atrioventricular dissociation (eg, fusion and/or capture beats), especially when only viewed from the telemetry monitor. The feature that distinguishes the two rhythms is the rate:

- AIVR occurs at a rate between 50 and 110 beats/min; rates less than 50 beats/min are consistent with ventricular escape
- Ventricular tachycardia most commonly has a rate greater than 110 beats/min

Fusion and capture beats occur when a sinus-generated beat either fuses with a ventricular complex or gets conducted through the normal pathway, respectively. They suggest atrioventricular dissociation and can be seen in both AIVR and ventricular tachycardia. The distinction between AIVR and ventricular tachycardia is of paramount importance since the management differs significantly.

AIVR is a self-terminating and well-tolerated rhythm that does not require intervention, unlike ventricular tachycardia.<sup>3</sup> However, the underlying etiology should be explored. Antiarrhythmics should be avoided due to possible hemodynamic collapse.<sup>4</sup>

In a patient presenting with AIVR and signs or symptoms consistent with acute coronary syndrome, as with our patient, spontaneous reperfusion of an unstable coronary plaque should be assumed, and the patient should immediately be transferred to a percutaneous coronary intervention-capable (PCI-capable) facility.

The patient here was found to have an anterolateral ST-elevation myocardial infarction on a subsequent ECG (Figure 2), and he was immediately transferred for PCI.

THE RESOLUTION

**Learnings/What to Look for**

- AIVR is a wide, regular rhythm with a rate between 50 and 110 beats/minute
- Capture or fusion beats suggest atrioventricular dissociation and can be seen with AIVR or ventricular tachycardia

**Pearls for Urgent Care Management**

- In most cases, AIVR represents reperfusion, often after thrombolysis
- Patients with AIVR should be transferred to a PCI-capable center
- Antiarrhythmics traditionally given in ventricular tachycardia should be avoided due to possible hemodynamic collapse
- Evaluate for other underlying causes, such as electrolyte abnormalities, severe cardiomyopathies, or drug toxicities

**References**

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