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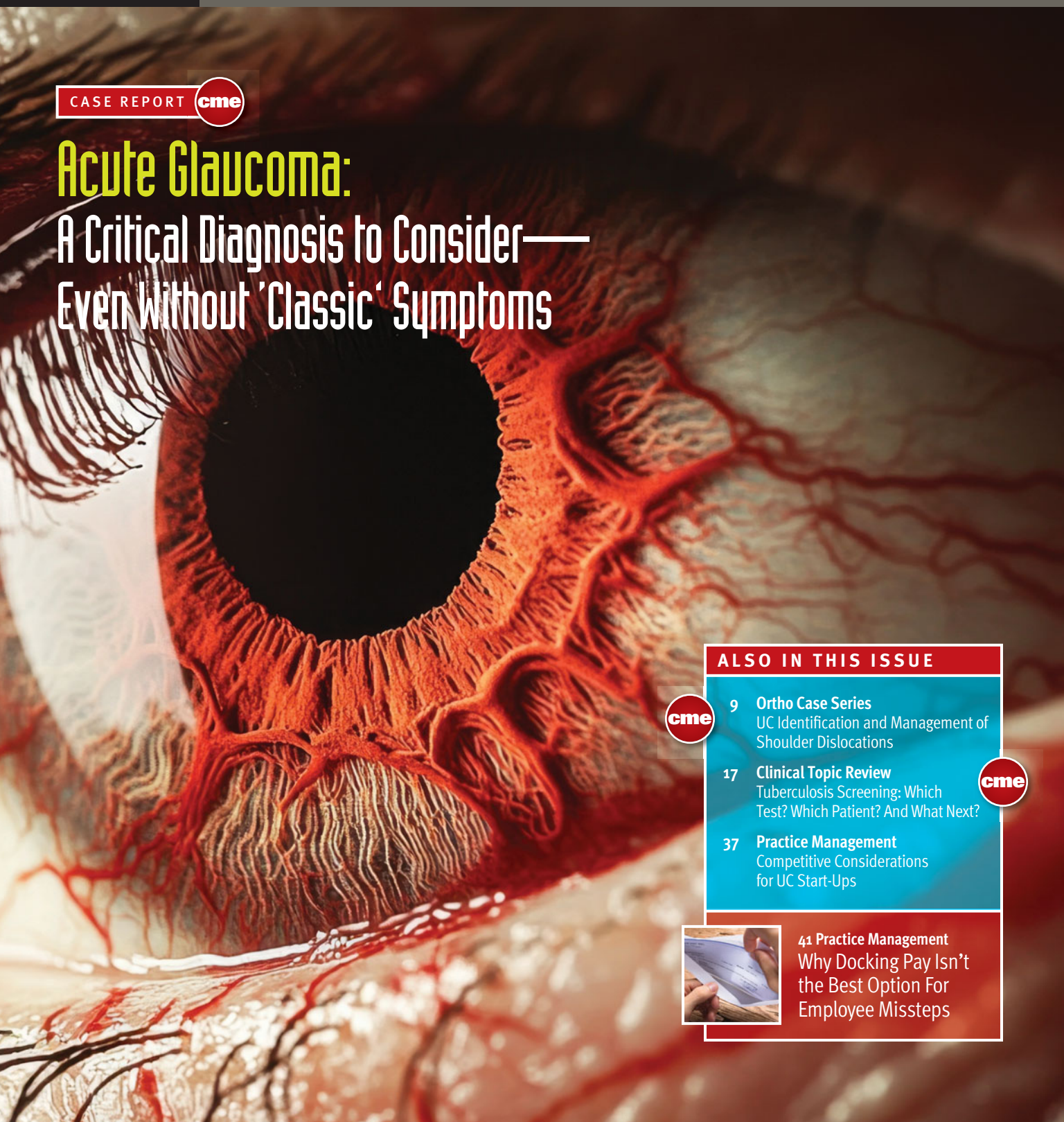

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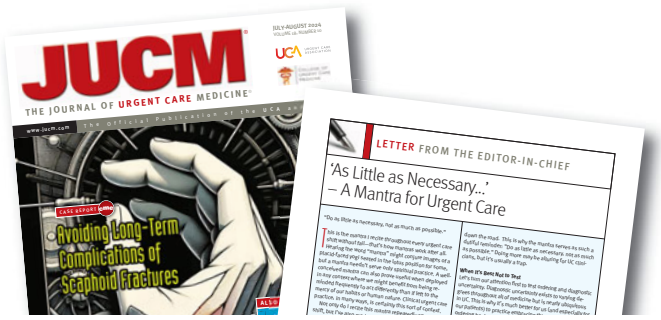


LETTER TO THE EDITOR

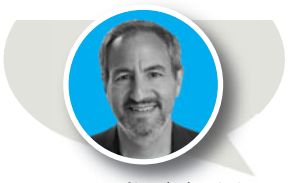
In response to the July-August 2024 Letter From the Editor In Chief Joshua W. Russell, "'As Little as Necessary' – A Mantra for Urgent Care"

Right on! Just read your article today. This will be shared with my providers. Thanks for this timely and practice-challenging article. Many of my providers come from a primary care background and are stuck in this mindset of "being right" all the time (and return tomorrow if your knee still hurts). I tell my patients that I'm really good at figuring out what they don't have.

Love your stuff.

Wilton C. Kennedy, PA-C
Lead Clinician, AFC Urgent Care, Roanoke, VA

"History. Exam. Testing. If any 1 of these is compromised, spend more time and effort on the other 2."
— Joshua W. Russell, MD, MSc, ELS, FCUCM, FACEP
JUCM Editor in Chief



"Hard-stop your medical decision-making to consider can't-miss diagnoses."
— Michael Weinstock, MD
JUCM Senior Clinical Editor

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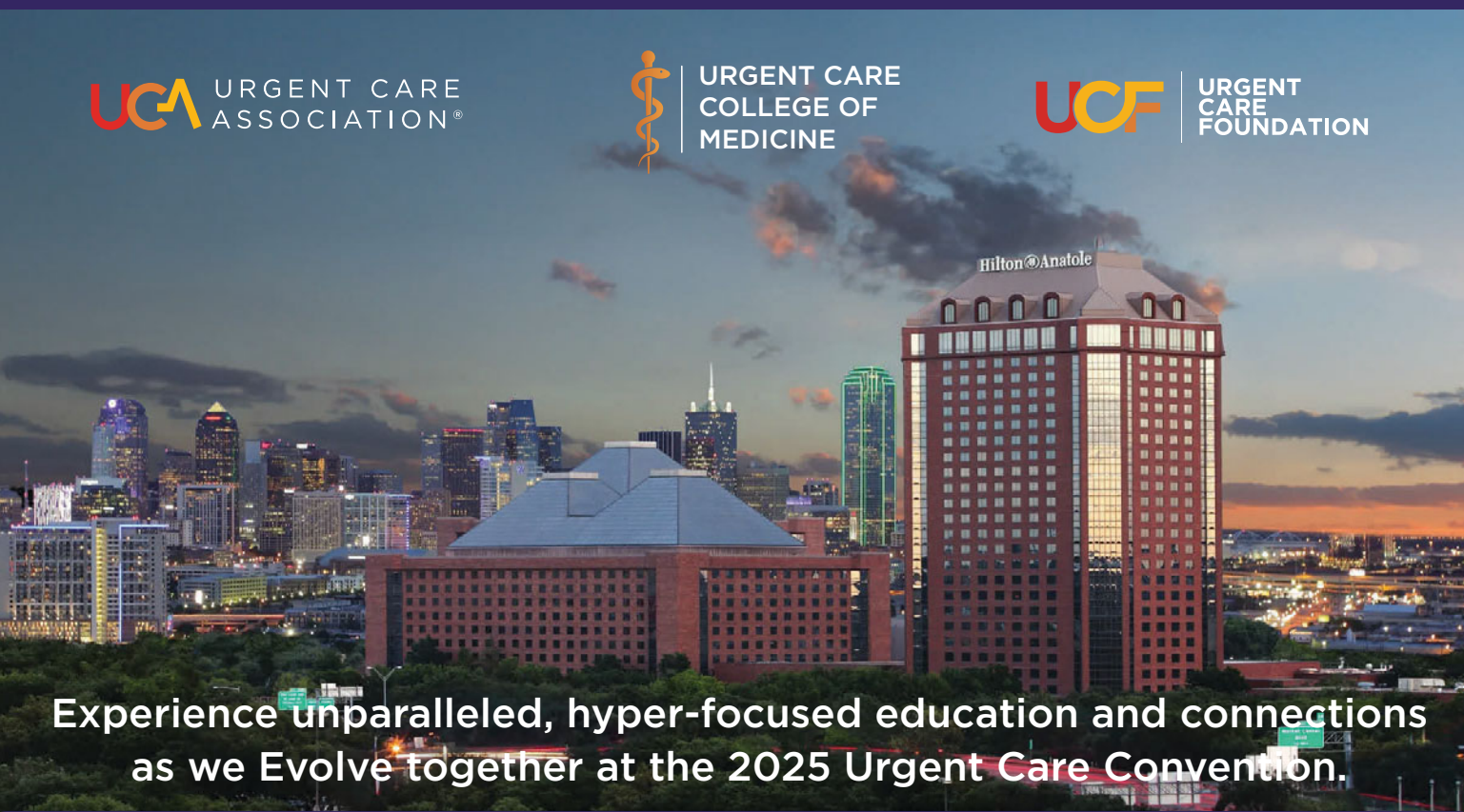

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Mind the Gap

Lou Ellen Horwitz, MA

It's believed that Urgent Care (UC) was born early in the 1980s, likely as the brainchild of Bruce Irwin, MD. He was an emergency room physician who saw "many people were coming to the emergency room with problems that could have been cared for in a less expensive and more convenient manner."[1] He opened a facility to do just that, which became American Family Care, the nation's largest Urgent Care provider. Bruce Irwin passed away in 2023, but his insights on why Urgent Care was needed at that time still ring true.

Yet, 42 years later, many people continue to wrestle with Urgent Care's place in the healthcare ecosystem. There is ongoing debate about whether Urgent Care centers should focus on growing primary care access or stick with higher acuity and the pluses and minuses of both. Economics is a huge factor in these discussions, unfortunately. There are so many dollars flowing into the primary (and chronic) care spaces that it's hard to resist. Consequently, all kinds of new actors have been rushing into the fringes of our space. From new insurance models to mobile apps, to connected devices, to a wide assortment of open access attempts by very big names, we've seen a tsunami of companies trying to revolutionize primary care.

All these efforts are geared toward creating disruptive innovation. Coined in 1997 by Clayton Christensen in the book "The Innovator's Dilemma," "disruptive innovation" occurs when a new market is created at the bottom of an existing market that eventually displaces the established market-leading firms. This is essentially what Urgent Care did: We came in at the bottom of the emergency department (ED) "market" and were able to see a segment of the patients who traditionally went to the ED but for less cost and more pleasant access. We did a few other things right, but disruptive innovation was at the core of our initial success.

Lou Ellen Horwitz, MA is the chief executive officer of the Urgent Care Association.

Primary care appears to be ripe for disruptive innovation. It seems to have low-hanging fruit on the accessibility and affordability branches, so if someone created networks that took advantage of scale and were able to gain enough negotiating power with the folks that hold the reimbursement purse strings, it could eventually become a low cost model that is financially viable. The trouble with disruptive innovation is that the new model has to be inherently more affordable—not simply because it's being propped up by investor dollars. Primary care is fairly low cost already, so finding a lower cost way to deliver those services is a real challenge. And if you can't solve that problem, creating more access is not going to create disruptive innovation. It seems a few checkboxes were missed, and that may help explain why almost none of the latest primary care disruption attempts have succeeded.

Through it all, I have seen almost no one trying to disrupt Urgent Care, but as time goes on, that is what keeps me up at night. Investment in Urgent Care remains strong, which is a good sign that we are doing many things right (still), but if we fully abandon the top tier of what we do well so that we can pursue primary care and high throughput, are we abandoning the essentials of what made our success possible so far? We took the low-hanging fruit off of emergency departments and did it for less cost and with better access—that's disruptive innovation. If we abandon higher acuity, is that gap newly ripe for someone else to come in and fill it behind us? Especially when we achieve payment reform, might not all of those venture capital dollars go into creating a "new model" of "ED-lite" since we're not in that space anymore? That's an irony I could do without witnessing.

Each of you will need to decide what this means for your practice, your center, and your company. For the Urgent Care Association's part, we are going to stay focused on ensuring your advancement and long-term success and partnering with you to figure out exactly what that means in the years to come.

Reference

1. AL.com Website. On the record: Bruce Irwin, founder/CEO of American Family Care says health reform should address supply side. February 20, 2011. Accessed at: https://www.al.com/businessnews/2011/02/on_the_record_bruce_irwin_foun.html

CONTINUING MEDICAL EDUCATION

Release Date: February 1, 2025
Expiration Date: January 31, 2026

Target Audience
This continuing medical education (CME) program is intended for urgent care physicians, primary-care physicians, resident physicians, nurse-practitioners, and physician assistants currently practicing, or seeking proficiency in, urgent care medicine.

Learning Objectives
1. To provide best practice recommendations for the diagnosis and treatment of common conditions seen in urgent care
2. To review clinical guidelines wherever applicable and discuss their relevancy and utility in the urgent care setting
3. To provide unbiased, expert advice regarding the management and operational success of urgent care practices
4. To support content and recommendations with evidence and literature references rather than personal opinion

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Urgent Care Assessment and Management of Shoulder Dislocations (page 9)

1. **Which pattern of shoulder dislocation is most common?**
   a. Anterior
   b. Posterior
   c. Inferior
   d. Luxatio erecta

2. **Patients with anterior shoulder dislocations typically report worse pain with which type of movement?**
   a. External rotation and abduction
   b. Internal rotation and adduction
   c. Slight adduction
   d. Flexion

3. **After a successful reduction of shoulder dislocation, which instructions would most likely be recommended for the patient?**
   a. Daily exercise
   b. Computed tomography imaging
   c. Magnetic resonance imaging
   d. Follow-up with orthopedic or sports medicine specialist

Clinical Review of Current Best Practices for Tuberculosis Screening, Testing, and Treatment in the Urgent Care Setting (page 17)

1. **Which of these statements is true?**
   a. Tuberculosis disease is an asymptomatic infection
   b. Tuberculosis disease is a symptomatic infection
   c. Latent tuberculosis infection is a symptomatic infection
   d. Latent tuberculosis infection is highly contagious

2. **Which of these populations is at risk for latent tuberculosis infection and tuberculosis disease?**
   a. Patients with HIV infection
   b. Healthcare workers
   c. Residents in congregate living situations
   d. All of the above

3. **Why shouldn't the tuberculin skin test and interferon-gamma release assay test be used to monitor response to tuberculosis treatment?**
   a. Tests will remain positive despite treatment
   b. Tests are not specific enough
   c. Tests are too expensive
   d. Tests are too painful for patients

Looking Beyond the Mouth–A Rare Case of Acute Glaucoma Presenting with Dental Pain: A Case Report (page 29)

1. **Which of these would be considered a normal range of intraocular pressure?**
   a. Less than 8 mmHg
   b. 8-21 mmHg
   c. 40-80mmHg
   d. 80 mmHg or more

2. **What is a risk factor for acute angle closure glaucoma (AACG)?**
   a. Asian descent
   b. Female sex
   c. History of AACG
   d. All of the above

3. **What is the most efficacious intervention for AACG?**
   a. Laser iridotomy
   b. Pupil dilation
   c. Antihistamines
   d. Sulfonamides

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Urgent Care Assessment and Management of Shoulder Dislocations

Urgent Message: The vast majority of shoulder dislocations are anterior, occurring when stress is applied to an externally rotated and abducted shoulder. In most cases, immediate reduction is indicated, and urgent care clinicians should be familiar with situations that call for emergency department referral.

Jennifer Hicks, DO; Matthew B. Baird, MD

Citation: Hicks J, Baird MB. Urgent Care Assessment and Management of Shoulder Dislocations. *J Urgent Care Med.* 2025; 19(5):9-15

Editor's Note: *While the images presented here are authentic, the patient case scenarios are hypothetical.*

Abstract

The shoulder is the most commonly dislocated joint, and there are 3 main patterns of shoulder dislocations. Anterior shoulder dislocations are by far the most common, accounting for approximately 95% of cases. An anterior shoulder dislocation occurs when stress is applied to an externally rotated and abducted shoulder. Diagnosis is typically made by clinical assessment and shoulder x-ray. In most cases, immediate reduction is indicated, and there are multiple techniques for reduction. Choosing the optimal reduction technique depends on patient factors, dislocation subtype, and resources available. While serious complications are rare, it is important for urgent care clinicians to be familiar with red flags and situations where emergency department (ED) referral is indicated. If successfully reduced, patients can be discharged with orthopedics follow-up.

Questions for the Clinician at the Bedside

1. When should a shoulder dislocation be suspected?
2. How is shoulder dislocation diagnosed?
3. Which patients with shoulder dislocations should be referred to the emergency department?
4. What are most common and serious complications of shoulder dislocations?

Clinical Scenario

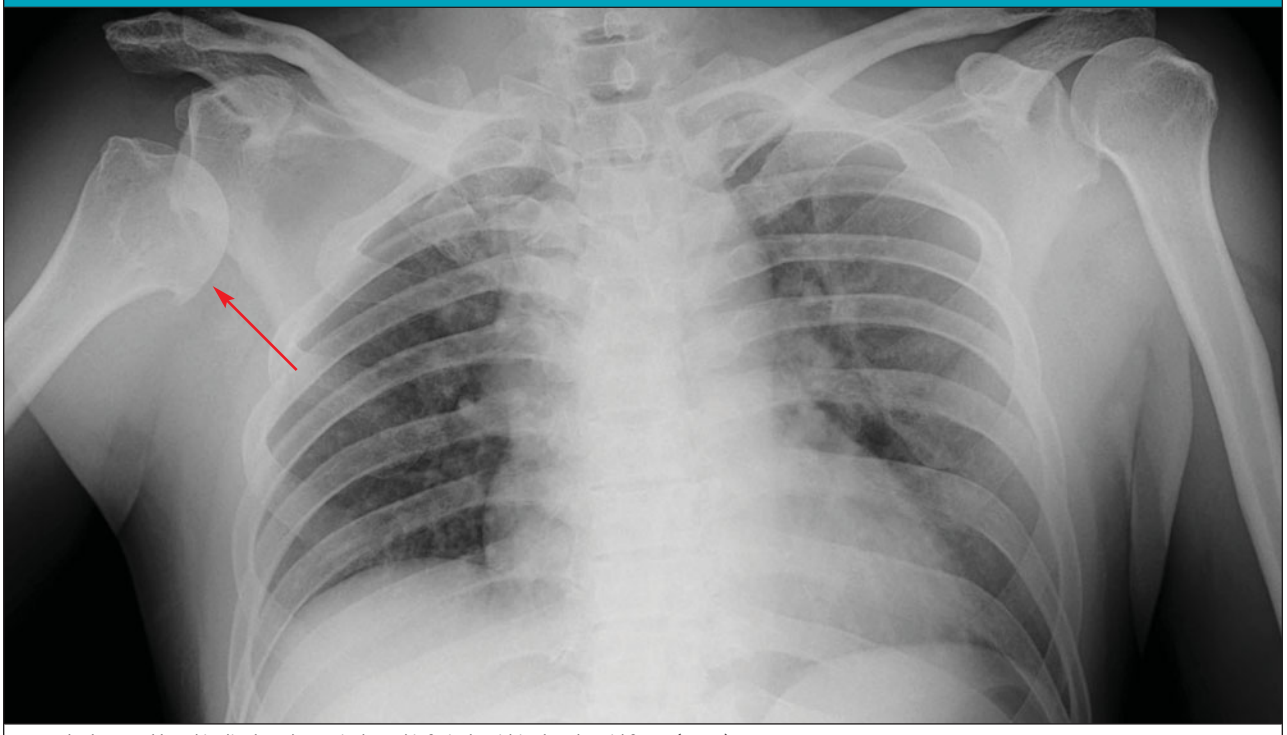
A 42-year-old woman presented to urgent care (UC) with right shoulder pain after falling forward and catching herself with her right arm. She reported severe right shoulder pain with minimal movement and a new sensation of numbness over the right lateral upper arm. She denied any other injuries.

On physical exam, the right shoulder appeared "squared off" with a deformity. The acromion appeared more prominent, and there was a depression where the humeral head would be expected instead of a normal rounded contour. The patient was able to only minimally abduct or externally rotate the right arm. Sensation was slightly reduced in the distribution of the axillary nerve over the lateral deltoid. Her radial pulses were 2+ bilaterally. The patient experienced no pain with palpation of the clavicle, shoulder, elbow, wrist, or hand, and no other areas of swelling or deformity were noted.

A shoulder x-ray series was obtained (**Image 1**) and revealed an anterior shoulder dislocation with an associated Hill-Sachs deformity (example in **Image 2**).

Author Affiliations: Jennifer Hicks, DO, Family Medicine, Adena Regional Medical Center. **Matthew B. Baird, MD,** Prisma Health, Greenville, South Carolina. Authors have no relevant financial relationships with any ineligible companies.

Image 1. Right Anterior Shoulder Dislocation

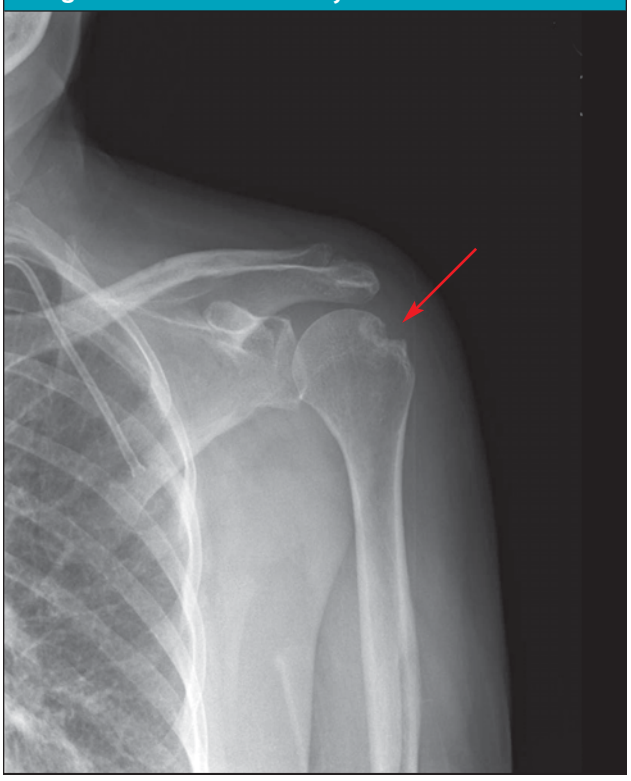


Note the humeral head is displaced anteriorly and inferiorly within the glenoid fossa (arrow).

Introduction

The shoulder (ie, glenohumeral joint) is the most commonly dislocated joint; the incidence is highest in adolescent young men and usually occurs as the result of trauma.[1,2] There are 3 types of shoulder dislocations: anterior, posterior, and inferior (also known as *luxatio erecta*). Anterior shoulder dislocations are by far the most common, however, occurring in approximately 95% of cases.[1,2] An anterior shoulder dislocation classically occurs when stress is applied to an externally rotated and abducted shoulder. Recurrent dislocations are a common complication after initial dislocation due to disruption of the joint's stabilizing structures. Approximately 20% of all cases of shoulder dislocation are recurrent, and occur more commonly in younger males and those with concurrent injuries (eg, Bankhart lesion, axillary nerve injury).[3,4,5] The highest rate of recurrence—close to 80%—involves men under 20 years of age.[6]

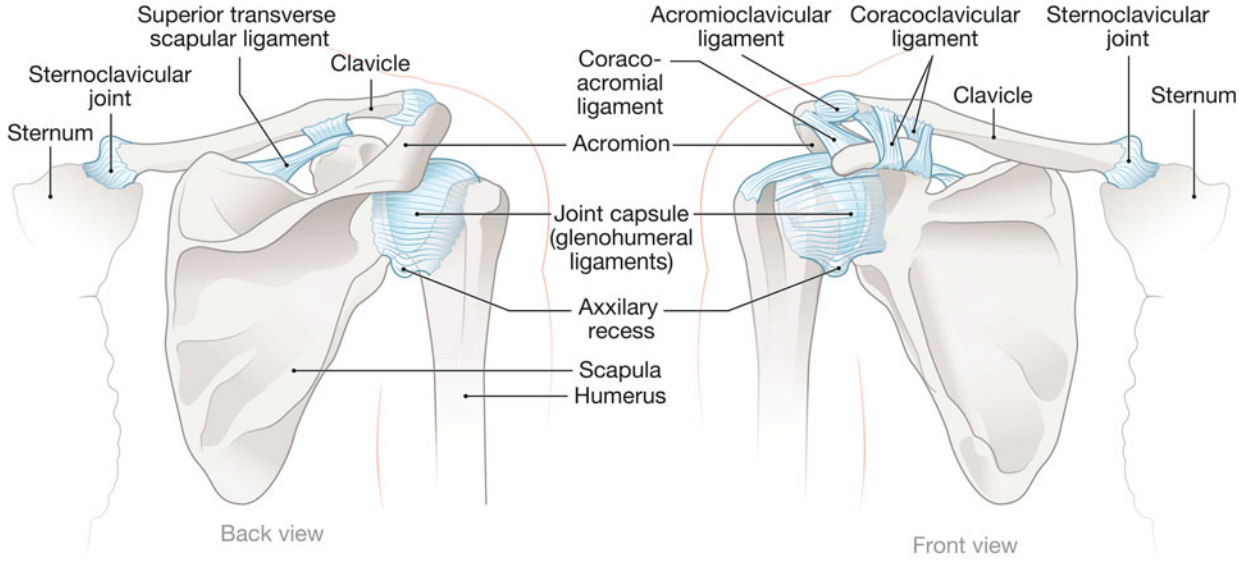
Image 2: Hill Sachs Deformity



Relevant Anatomy

The glenohumeral joint is a dynamic structure; it has a high degree of mobility compared with most other joints, and is therefore intrinsically unstable.[7] The structures surrounding the humeral head are the glenoid cavity (of the scapula) and labrum medially and the ac-

Image 3: Shoulder Anatomy: Joints and Ligaments



romion and distal clavicle superiorly. Multiple muscles attach to the humeral head and play a role in maintaining the articulation of the humerus with the glenoid cavity. These include the rotator cuff musculature (teres minor, infraspinatus, supraspinatus, and subscapularis) as well as pectoralis minor, biceps, and latissimus dorsi. Additionally, the inferior glenohumeral ligament and labrum play a significant role in preventing anterior translation of the humeral head.[7,8] These structures are typically injured with an anterior dislocation resulting in an avulsion fracture of the anterior aspect of the glenoid (ie, Bankart lesion).[9]

Another common fracture that can occur with shoulder dislocation is a Hills-Sachs deformity.[10] A Hills-Sachs deformity is an impaction fracture of the posterior aspect of the humeral head that may occur during dislocation due to forceful compression of the humeral head against the anterior glenoid rim. The presence of a Hills-Sachs deformity with primary shoulder dislocation has been shown to increase risk of recurrence.[10] Adjacent neurovascular structures can also be injured during dislocation. The axillary nerve courses around the humeral head and provides innervation to the teres minor, deltoid, and skin over the lateral shoulder. It is the most common nerve injured with anterior dislocation.[11] The axillary artery courses through the axilla and has the potential for injury. However, this is a rare complication and most commonly occurs in elderly patients with underlying atherosclerosis.[12]

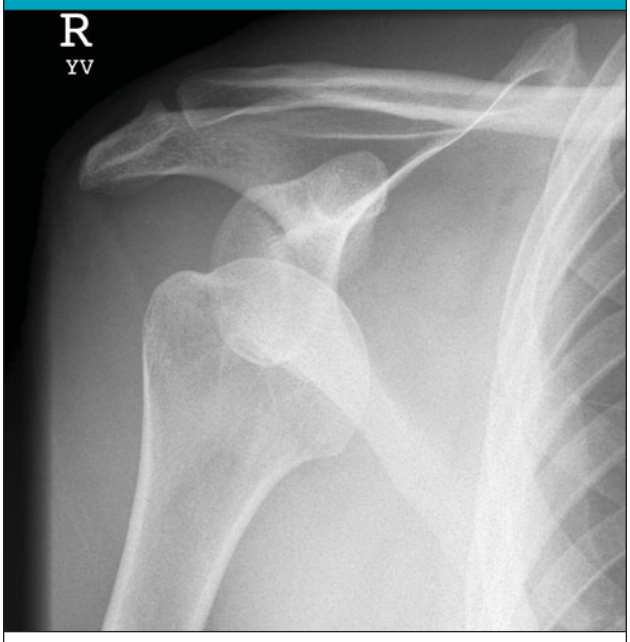
Clinical History

When evaluating a patient with a possible shoulder dislocation, inquire about the timing and mechanism of injury and history of previous dislocations. It is important to confirm dislocations are acute, as situations where there has been significant delay in care after glenohumeral dislocation have additional considerations. Clarify the area of greatest pain as well as alleviating and exacerbating factors. Patients with dislocations will generally have severe pain with motion. If the patient is not having pain with motion at the shoulder joint, referred pain from non-orthopedic causes should be considered.

Anterior shoulder dislocations typically occur after a traumatic event that forces the shoulder into abduction and external rotation.[7] If the injury was related to a fall, distinguish whether the fall was due to an event such as syncope or seizure. Posterior shoulder dislocations, especially if bilateral, should raise concern for underlying seizure disorder if another clear mechanism is not reported.[13] The uncommon inferior shoulder dislocation is typically a result of forced hyperabduction. This can occur from a fall onto an outstretched, hyperabducted arm, or when a person grabs onto something to break a fall, forcing their arm into hyperabduction. It is important to inquire about additional injuries or areas of pain, such as the head, neck, elbow, and wrist, which may suggest other associated traumatic injuries.

Determining specific movements that exacerbate pain can also provide useful information. For example, pa-

Image 4. Anterior Dislocation On Transscapular Y View



Note that the humeral head is displaced inferiorly.
Image Credit: Experity Teleradiology

tients with anterior dislocations typically report worse pain with external rotation and abduction; whereas posterior dislocations are worse with internal rotation, flexion and adduction.[14] Clinicians should also inquire about symptoms of neurovascular compromise including paresthesias, weakness or disproportionate pain.

Physical Examination

The physical exam should focus on inspection of the overall appearance and position of the shoulder, palpation for deformity, tenderness, and crepitus, as well as gentle range of motion (ROM) and neurovascular assessment.

To assess the shoulder's general appearance, expose both shoulders and compare the affected side to contralateral side. Look for any obvious deformities or external signs of trauma, such as lacerations or hematomas. Shoulder dislocations typically result in loss of the normal rounded contour of the shoulder and a prominent acromion with an inferior depression called a "sulcus sign." For anterior dislocations, the affected arm is typically held in external rotation and slight abduction. The humeral head will be displaced anteriorly, medially, and inferiorly in the joint space.[15] Alternatively, the arm is typically held in adduction and internal rotation for posterior dislocations, and abduction and elbow flexion for inferior dislocations.[14] Clinicians should palpate the rest of the shoulder beginning at sternoclavicular (SC) joint medially to the acromioclavicular (AC) joint and the attachment of the biceps tendon.

In traumatic dislocations, ROM will be significantly limited by pain. Therefore, tolerable active ROM should be assessed gently, including internal rotation, external rotation, abduction, and adduction. Neurovascular assessment should assess motor functions (elbow, wrist, and hand ROM and strength), sensation, and pulses. If pulses are diminished distally at the wrist or there is evidence of hematoma axillary artery injury should be suspected.[16] Axillary nerve injury occurs more commonly than arterial injury and presents most often with decreased sensation over the lateral deltoid. Weakness in shoulder abduction due to denervation of the deltoid may also be detected, and weakness in adduction and external rotation can occur due to denervation of the teres minor.[17] Weakness may be harder to evaluate given expected restrictions in ROM expected due to pain.

Diagnostic Testing

If shoulder injury is suspected, plain radiographs (XR) of the shoulder are the initial test of choice. Point-of-care ultrasound has been shown to be 99% sensitive and specific for diagnosis of shoulder dislocation in the hands of experienced operators and can be used to complement XR (or in settings where XR is not available).[18] XR has high sensitivity for both shoulder dislocation and proximal humerus fracture, which can be difficult to distinguish clinically.[19] The XR series should include at least 3 views: anterior posterior (AP), scapular-Y (lateral), and axillary views. The axillary view offers the best view for assessment for glenoid lesions (ie, Bankhart fractures) and assessment of the direction of dislocation.[20] The axillary view may not be included in certain shoulder XR protocols, but it often proves most illustrative in cases of diagnostic uncertainty. For anterior dislocations, the scapular-Y/lateral view will show the humeral head displaced towards the ribs (**Image 4**). In posterior dislocations, the humeral head will often appear similar to a lightbulb on the AP view (**Image 5**). Referred to as the "lightbulb sign," this occurs because the internal rotation of the humeral head causes the silhouette of the greater trochanter to be lost, making the humeral head seem symmetrically round and the glenohumeral space widened.[21] In cases of uncertainty regarding the presence of dislocation or underlying fracture (ie, fracture-dislocation), a computed tomography (CT) scan and/or immediate orthopedics consultation (when available) are both reasonable strategies. While

shoulder magnetic resonance imaging (MRI) is often utilized to assist with definitive treatment, such as surgical planning, it is not generally indicated in the acute setting.[22]

Urgent Care Management

While it has not been specifically studied in the UC setting, given resource limitations, it is likely that most patients diagnosed with shoulder dislocations in UC will require ED referral to achieve timely reduction. However, in patients who do not have intractable pain and are able to tolerate joint manipulation, it is reasonable to attempt reduction maneuvers in the UC setting. If attempting reduction, administering whatever analgesics are available and clinically appropriate, either oral or parenteral, can facilitate reduction and improve patient comfort. For clinicians with appropriate training and procedural comfort, intra-articular injection of 10-20 mL of 1% lidocaine into the glenohumeral space has been shown to facilitate successful reduction with low rates of complications.[23]

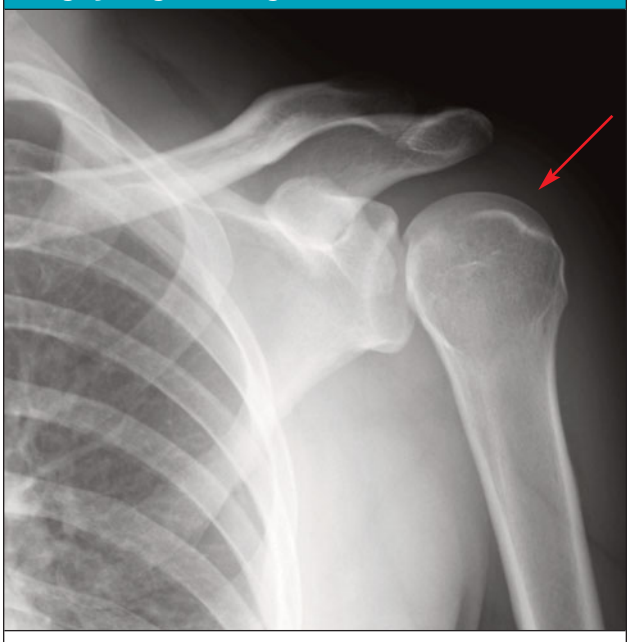
Over 20 different reduction techniques for anterior shoulder dislocations have been described. This list includes the FARES (FAst, REliable, and Safe) method, scapular manipulation, external rotation and the Milch and Stimson techniques. Studies comparing the effectiveness of the various techniques suggest that scapular manipulation and the FARES techniques are the most successful.[24,25,26]

Reduction Techniques

Scapular manipulation is performed by the clinician rotating the inferior lateral edge of the scapula medially and superiorly. This technique can be performed with the patient seated or prone.[24] To perform the FARES method, longitudinal traction is applied with gentle oscillating movements superiorly and inferiorly as the arm is taken into abduction slowly with the patient lying supine.[27]

If the FARES and scapular rotation are poorly tolerated, it is helpful to have familiarity with several additional techniques. The external rotation technique has relatively high success rates and is perhaps the simplest technique. To perform external rotation, the arm is held in adduction and the elbow flexed to 90 degrees. The clinician then gently and slowly begins to externally rotate the humerus while applying gentle downward traction.[28] If reduction is not achieved with external rotation, the Milch technique could be attempted immediately by taking the externally rotated arm into abduction.[29]

Image 5. "Lightbulb Sign"



Note the abnormal rounded appearance of the humeral head seen with posterior should dislocations which is referred to as the "lightbulb sign" (arrow)
Image Credit: Experity Teleradiology

The Stimson approach is a passive maneuver where the patient is placed in a prone position. Approximately 10-15 pounds of weight are attached to the wrist and allowed to hang from the affected arm which dangles off the table or gurney. The weight, with gentle traction over a period of about 15 minutes, can fatigue spasmed muscles and allow the humeral head to ease into its native position.[30]

Other techniques such as the Hippocratic technique (also known commonly as traction-countertraction) and Kocher's method are typically avoided, especially in settings where procedural sedation is unavailable, due higher reports of pain and lower rates of success compared to the other methods discussed previously.[27] Whichever technique is chosen, the most important factor affecting success is the patient's ability to relax the muscles of the shoulder girdle. For this reason, pain control, patience, gentleness, and appropriate patient coaching are critical parts of a successful reduction.[31]

For posterior dislocations, reduction is typically achieved by placing the arm in adduction and internal rotation with the elbow flexed and applying gentle traction. The FARES method can also be used to reduce posterior dislocations.[32] Inferior dislocations are reduced by placing the arm in abduction, applying gentle traction and bringing the arm gently through adduction.[33]

Post-Reduction Assessment and Care

After reduction is achieved, a repeat neurovascular exam should be performed and documented. While the existing evidence does not support the utility of post-reduction XRs, they are commonly obtained in practice and do offer confirmation of restoration of anatomic alignment if there is uncertainty based on clinical assessment alone. XR can also assess for post-reduction fracture.[34]

After a successful reduction the patient should be immobilized in a simple sling.[7] There has been some controversy on whether positioning in internal or external rotation is more beneficial.[35] Small studies suggest that use of an abduction pillow with a sling decreases risk of recurrent dislocation. However, the practicality of abduction pillows and compliance with their use are of some concern, leading many providers to favor a simple sling in a position of comfort. The sling can be removed for bathing and gentle ROM exercises (pendulum exercises), but the patient should be instructed to avoid abduction, external rotation, or other uncomfortable positions. Initial treatment should focus on rest, pain control, and gentle range of motion as tolerated or physical therapy to help rehabilitate ROM.[7] Rapid orthopedic or sports medicine follow-up should be arranged within 1-2 weeks.[36,26] Patients should be informed that surgery may be recommended, but shoulder dislocation is not universally a surgical injury. There are multiple indications for surgery, including younger age, participation in contact sport, and concomitant rotator cuff tear. Surgical decisions are individualized, and UC clinicians should defer any discussions regarding the likelihood of surgical intervention to the specialist who sees the patient for follow-up.

Next-Level Urgent Care Pearls

- When obtaining a history, inquire about the mechanism of injury and history of previous dislocations. Patients with frequent dislocations may experience a dislocation with little or no trauma.
- Assess for associated injuries such as clavicle fracture, AC separation, and humeral or scapular fractures.
- Evaluate the axillary and scapular Y-view x-rays to determine if the dislocation is anterior, posterior, or inferior.
- Post-reduction XRs are not required to confirm successful reduction but can be obtained in the setting of uncertainty.[34] Performing and documenting a post-reduction neurovascular assessment, however, is recommended in all cases.

Red Flags and Pitfalls

- Document neurovascular status to demonstrate assessment for injury to the axillary nerve and artery before and after reduction. If axillary nerve injury is suspected, proceed with reduction, and discuss the case with orthopedics to assure prompt follow-up.
- Shoulder dislocations should be reduced within 24 hours. Patients presenting with dislocations of greater duration are at risk of unsuccessful reduction attempts and complications.[37] Ensure history includes a clear understanding of when the dislocation occurred.
- Posterior shoulder dislocations are missed in approximately 60% of cases. Have a high index of suspicion in patients who fall onto a flexed, adducted arm, patients with seizures, or victims of a severe electrocution injury with shoulder pain.[13]
- In patients with shoulder pain not reproducible with movement, consider referred pain from sources such as acute coronary syndrome (ACS), pneumothorax, pulmonary embolism, aortic dissection, gallstone disease, or diaphragmatic irritation related to free air or fluid in the abdomen.

Clinical Scenario Conclusion

A right shoulder XR series obtained in UC revealed an anterior shoulder dislocation. The patient was relatively comfortable and wished to avoid going to the ED. The UC clinician provided oral acetaminophen and ibuprofen and injected 10 ml of 1% lidocaine into the intra-articular glenohumeral space before attempting reduction. Twenty minutes later, the patient appeared more comfortable, and the shoulder dislocation was reduced successfully by placing the arm in adduction with the elbow flexed to 90 degrees. When the arm was gently externally rotated, a palpable clunk was felt by the patient and the shoulder deformity appeared to resolve. The patient was placed in a sling and referred to orthopedics for follow-up in 1 week.

Takeaway Points

- The vast majority of shoulder dislocations are anterior. Physical exam will typically reveal a "sulcus sign" deformity. This can be appreciated best if both shoulders are visualized to compare the contours.
- In addition to diagnosis of the shoulder dislocation, it is important to also evaluate for complications of shoulder dislocation including injuries to the axillary nerve or axillary artery and fractures (Hills-Sachs or Bankhart, proximal humerus).
- Glenohumeral dislocation is best visualized on XR in the trans-scapular Y-view.

- While many patients will require ED referral for reduction, when an experienced clinician is caring for a cooperative patient, attempting reduction in UC is reasonable and appropriate. Sterile injection of lidocaine intra-articularly into the glenohumeral space can offer significant pain relief and greatly facilitate reduction attempts.
- While a post-reduction XR is not required, it is critical to perform and document a post-reduction neurovascular assessment.
- After reduction, patients can be treated with a simple sling and outpatient orthopedic follow-up. Patients should be counseled that this can recur and it is possible that the specialist may recommend surgery. ■

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Clinical Review of Current Best Practices for Tuberculosis Screening, Testing, and Treatment in the Urgent Care Setting

Urgent Message: Patients may present with needs surrounding tuberculosis (TB) screening, testing, and treatment to urgent care centers. There is considerable nuance in the approach to these scenarios with consequences for both patient and public health. Urgent care centers should develop clear guidelines for ensuring clinicians select the appropriate TB test for each patient and interpret the results accurately.

Erin Loo, PA-C; Lindsey E. Fish, MD

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Introduction

Tuberculosis (TB) is caused by infection by the bacteria *Mycobacterium tuberculosis*. Clinically, TB can present in 2 patterns: TB disease and latent TB infection (LTBI).

1. TB disease is defined as a symptomatic infection with characteristic and suggestive findings based on the anatomic site of infection. For example, pulmonary TB disease often presents with a combination of cough, fever, night sweats, and changes on chest radiography (CXR).
2. Latent TB Infection, in contrast, is defined as an asymptomatic infection with *M. tuberculosis*. However, these patients harbor viable organisms and are at risk for developing symptomatic infections (ie, *TB disease*) in the future. These patients are not contagious and cannot spread TB to other people.[1]

Understanding these definitions is a critical first step

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Table 1. Tuberculin Skin Testing Interpretation

Induration Greater Than or Equal to 5mm	Induration Greater Than or Equal to 10mm	Induration Greater Than or Equal to 15mm
Measured induration of 5mm or more considered positive for the following populations: • HIV+ • Recent contacts of people with infectious TB disease • Fibrotic changes on CXR • History of organ transplant • Immunocompromised, including patients on prolonged corticosteroids equivalent to or greater than 15mg of prednisone per day, and those on anti-TNF agents	Measured induration of 10mm or more considered positive for the following populations: • Born in a country with high prevalence of TB (eg, Latin America, the Caribbean, Africa, Asia, Eastern Europe, and Russia)[3] • Drug or alcohol misuse • Handling mycobacteria in a lab • Residence in a congregate living setting (eg, nursing home, correctional facility, or shelter) • Medical conditions that increase risk for TB (eg, diabetes mellitus; severe kidney disease; silicosis; cancer of the head, neck, or lung; and patients with history of gastrectomy or jejunoileal bypass surgery)	Measured induration of 15mm or more is always considered positive

Table adapted from reference 1

when TB testing is considered or ordered. Importantly, the terminology around tuberculosis has been updated, and therefore, older publications may use the historic terminology. These terminology changes occurred in 1999 when the American Thoracic Society updated its guidelines.[2] TB disease was previously referred to as "active TB" and LTBI was called "latent TB" or "TB infection." Likewise, the terms for LTBI treatment were updated from "preventive treatment" to "treatment of LTBI."[2]

Tuberculosis Burden

Tuberculosis remains a leading cause of morbidity and mortality worldwide with an estimated 13 million individuals in the United States currently infected with *M. tuberculosis*.[3] The Centers for Disease Control and Prevention (CDC) monitors TB in the United States, and more than 9,000 cases of TB disease were reported in 2023.[4] Approximately 5-10% of immunocompetent patients with LTBI will develop TB disease at some point in their lifetime, however, appropriate screening and treatment of LTBI is approximately 90% effective at preventing progression to TB disease.[5] The United States Preventive Services Task Force's (USPSTF) recommendations focus on the value of screening specific populations of asymptomatic adults to capture cases of LTBI and prevent progression to TB disease.[3]

Epidemiology of Tuberculosis

The prevalence and incidence of TB cases vary geographically within the United States with the highest levels occurring in New York, Florida, Texas, and California.[6] Nearly three-fourths of cases of TB disease in the United States occur in individuals born in another country, and most of these cases of TB disease result from progression of LTBI to symptomatic disease.[7] There are also significant ethnic disparities in the prevalence of TB with higher rates among Native Hawaiian, Pacific Islander, Asian, Native Americans, Alaskan Natives, Hispanic or Latino, and Black or African American patients.[4] Social determinants of health (SDoH) also play a strong role in the risk of LTBI and TB disease.[3]

Since 2020, after nearly 3 decades of decline, there has been a slight increase in cases and incidence rates.[4] This increase has been attributed to disruptions in TB surveillance and treatment during the COVID-19 pandemic as public health resources were reallocated to mitigate the spread of COVID-19.[4] Furthermore, the United States has also seen a dramatic increase in levels of immigration since pandemic lock-downs, which may be related to rising rates of TB.[4] In fact, 2023 saw the highest number of new TB disease cases the United States in over a decade (9,633 cases).[4] These trends underscore the importance of investing in robust TB surveillance programs. Given that urgent care (UC) is the first (and often only) contact with the healthcare system for many patients, we play a critical role in supporting these efforts.

Improving surveillance begins with an understanding of patients at increased risk for TB. Risk factors for LTBI and TB disease include:

- Those with known close contact with someone with TB disease
- Children <5 years of age (with confirmed exposure

to TB disease; this population is also at higher risk of converting from LTBI to TB disease)
- Immigrants from areas of high prevalence
- People experiencing homelessness
- Intravenous drug users
- Patients with HIV infection
- Healthcare workers
- Residents in congregate living situations
- Those who work with high-risk populations
- Those with impaired immune systems due to conditions such as substance misuse, silicosis, diabetes mellitus, severe kidney disease, low body weight, organ transplant, malignancy and those using immunosuppressant medications (eg, high-dose chronic steroid use, tumor necrosis factor alpha inhibitors, biologic agents)[8]

Tuberculosis Signs and Symptoms: Distinguishing LTBI From TB disease

By definition, LTBI is asymptomatic. Importantly, those with LTBI also cannot spread the infection to others.[5] In contrast, patients with TB disease are symptomatic and contagious.[1] TB disease most commonly affects the lungs, and patients with pulmonary TB commonly experience prolonged cough (ie, >3 weeks in duration), chest pain, and/or hemoptysis.[9] Extrapulmonary TB disease symptoms may occur from infection of the pleura, lymph nodes, meninges, central nervous system (CNS), pericardium, and bone.[10] Other systemic symptoms include "B symptom" type complaints such as weakness, fatigue, weight loss, decreased appetite, fever, chills, and night sweats.[9]

Who Should Be Tested or Screened for TB?

The terms "screening" and "testing" are often used interchangeably, and the terms are not specifically defined in the literature. For purposes of this review, screening indicates evaluation and testing of asymptomatic patients for employment or other purposes. This is the type of patient visit most likely to occur in UC settings. Testing will be used to describe diagnostics used to evaluate patients who are either at-risk for LTBI, at risk for progression from LTBI to TB disease, or who are symptomatic with concern for TB disease.

The USPSTF and CDC recommend screening asymptomatic patients at higher risk *M. tuberculosis* infection or those at high risk of progression to TB disease (from LTBI) if infected with *M. tuberculosis*.[3] This involves risk assessment, symptom evaluation, and either tuberculin skin test (TST) or interferon-gamma release assay (IGRA).[3]

According to the CDC, patients with signs and symptoms suggestive of possible TB disease should be tested.[9] Conversely, screening for the general population is not recommended because of the risk and consequences of false positive test results.[11] The USPSTF has specific guidelines for populations at risk.[3] In the United States, a large proportion of TB screening encounters in UC are among healthcare workers or others with occupational health requirements for testing.

"By definition, LTBI is asymptomatic. Importantly, those with LTBI also cannot spread the infection to others."

Screening Test Options for LTBI: 'The Skin Test or the Blood Test?'

Two screening test options for LTBI are available in the United States: the TST and the IGRA.[1] The TST, Mantoux test, and purified protein derivative (PPD) test all refer to TB skin testing, and the terms are often used interchangeably. The Mantoux test is an eponym for the physician who developed the skin testing technique used in TST; PPD refers to solution which is injected intradermally for a TST.[12] Both TST and IGRA tests are equivalent in assessing the future risk of TB disease, and selection should be determined by factors such as test availability, convenience, and cost.[1]

The TST involves injecting 0.1mL of tuberculin—a purified protein derivative of the bacteria that causes TB—intradermally (usually on the forearm) and measuring the length of induration (not erythema) after 48-72 hours.[12] Any reaction over 15mm is considered positive, however, reactions less than 15mm may also be positive based on individual risk factors.[1] Based on these accepted criteria/definitions, a 2023 systematic review found that the pooled sensitivity and specificity of the TST were between 60-80% and 90-95% respectively.[7]

While interpretation of the TST seems straightforward, there are common pitfalls to be aware of. To interpret a TST, the clinician must consider both the size of induration and the patient's risk of LTBI. When reading a TST, the response should be recorded in millimeters of induration rather than simply "positive" or "negative."[1] A response under 5mm is negative, and a result greater than or equal to 15mm is always positive, regardless of risk factors.[1] Patients with positive TSTs should be referred to the local public health department

Table 2. Tuberculin Skin Testing vs Interferon-Gamma Release Assays

TST Advantages	TST Disadvantages
• No special equipment required • Inexpensive (<$20) • Long history of use in diagnosis of LTBI • Well established criteria for skin test conversions • Useful in serial testing	• Requires trained staff • Variability in administration and interpretation of results • Requires 2 visits • High rate of false positives • Cross reactivity with BCG vaccine • Low sensitivity if immunocompromised
IGRA Advantages	**IGRA Disadvantages**
• More specific to *M. tuberculosis* • Only requires 1 visit • Can be used in patients with history of BCG vaccination • Results in 24 hours • Not subject to bias in interpretation • No booster phenomenon	• Requires phlebotomy • Specialized laboratory equipment needed • No consensus on conversions for interpretation • More costly (approximately $85)

Table adapted from references 1,12,13
Cost data sourced from 2022 article regarding cost-utility in screening high risk populations, however, cost to patient may vary depending on clinic/lab location.[14]
Booster phenomenon: When an initial TST is negative due to remote LTBI but follow up TST done within a year is positive. Initial TST "boosts" immune system to respond to the follow up TST and thus is considered a positive TST.[1]

for further assessment.[1] Any induration from 5-15mm in size requires more information about the patient's medical and social history to allow for appropriate interpretation. The risk factors to be considered when interpreting the TST are described in **Table 1**.

The IGRA is a blood test that measures antigens that are largely specific to the *M. tuberculosis* bacteria.[13] The QuantiFERON-TB Gold In Tube and T-SPOT.TB test are the 2 most widely available FDA-approved IGRA blood tests for TB testing/screening used in the United States.[13] Because these tests measure an antibody-related immune response to *M. tuberculosis*, they are preferred for patients who have received the Bacillus Calmette-Guérin (BCG) vaccine, which is commonly used in countries outside of the United States.[13] Patients will typically have a positive IGRA test within 6-8 weeks of TB infection, however, IGRAs do not distinguish between LTBI and TB disease.[13] The 2023 systematic review of TB screening test characteristics found that IGRA had a pooled sensitivity and specificity of 80% and 95%, respectively—similar to that of TST.[7] Additional advantages and disadvantages to this test are identified in **Table 2.**

Special Screening and Testing Considerations

BCG Vaccination

While the BCG vaccine is not available in the United States, it is often administered in countries where TB infection is common.[3, 12] Individuals who have received the BCG vaccine are more likely to have false positive TSTs due to cross-reactivity.[12] Therefore, the CDC recommends to screen and test for TB using the IGRA in such patients, however, TST is not strictly contraindicated in this population.[5, 12]

Healthcare Workers

According to the CDC, healthcare workers should be screened upon hire, but annual screening is only recommended if ongoing TB exposure is expected. Instead, individual risk assessments and TB questionnaires evaluating for signs and symptoms of TB should be used in lieu of an annual TB screening test.[15]

Immunocompromised Patients

Immunocompromised patients are at higher risk of progression to TB disease. This includes patients living with HIV, organ transplant, end stage renal failure on dialysis, cancer, and silicosis.[16] In addition, drugs that suppress the immune system are a risk factor for progression to TB disease, including tumor necrosis factor alpha (TNF) antagonists, biologics, steroids with daily dose of greater than or equal 15mg equivalent of prednisone, chemotherapy, and antirejection prophylaxis.[16] In addition to higher risk of progression to TB disease, immunocompromised individuals often will not mount enough immune response to TST or IGRA testing, leading to false negatives.[16] A taskforce with members from the CDC, the American Thoracic Society (ATS), and the Infectious Disease Society of America (IDSA) recommend repeat testing in this population because of high risk of progression from LTBI to TB disease.[17] This involves performing either TST or IGRA and doing a second test if the first test is negative.[17] Routine screening with both

modalities is typically not recommended outside of immunocompromised populations because of decreased specificity that results from this type of testing and risk of false positive.[17] Consider using both tests when the risk of a poor outcome is high if LTBI is missed, or if TB disease is suspected and first screening test is negative.[1,17]

Common Causes for False Negative TST Results

Given the variability in placement techniques, false negatives may occur with TST, even in appropriately selected patients. Errors in administration can lead to false negative results, such as a wheal not being formed.[1] Other scenarios where the TST may result in a false negative include exposure to TB <8 weeks prior, history of live virus vaccination in the previous month, concurrent viral or bacterial illness (specifically HIV, measles, mumps, typhus, and pertussis), and use of immunosuppressive drugs. IGRA testing would be more reliable for use with patients with these circumstances.[1]

History of Prior Positive Screening TB Test

Once a person has had a positive TB test—regardless of TST or IGRA use—neither TB screening test should be used for future assessments.[15,17] Patients should be reminded to maintain documentation of prior positive TB screening and any history of LTBI treatment to present if TB testing is required later.[18] In addition, serial CXR is not recommended in patients treated for LTBI. Instead, patients should monitor for symptoms of TB disease.[18] Healthcare workers with previous positive TB testing but no LTBI treatment should have annual TB disease symptom screening and consider risks/benefits of treatment.[17]

Clinical Scenarios and Discussion

Editor's Note: All clinical case scenarios in this article are hypothetical.

Case 1: A 46-year-old man who works as a laboratory technician presented for a mandatory pre-employment TB screening test. He had a past medical history of LTBI, which was treated appropriately with isoniazid (INH). He was tested with IGRA for the employment screening, and the result was positive. Subsequently, the patient was referred to the health department for further evaluation.

- **Case Analysis:** In this case, this patient has had a previous positive test. Patients with a history of a positive TST or IGRA should not have either test used for subsequent TB screening.[15]
- **Discussion:** Unfortunately, there is little consensus or guidance in the existing literature for monitoring patients with a history of a previous positive TB test and/or those who have been treated for LTBI or TB disease. The use of TB screening tests and/or annual CXR are specifically not recommended.[15] Instead, risk assessments and symptom checklists are preferred.[15] If the patient is a healthcare worker, a baseline assessment tool should be completed upon hire. The Texas Department of Health and Human Services has a baseline assessment tool for healthcare personnel that can be used in this setting.[19]

"The diagnosis of TB disease is based on clinical judgment and expertise, as there are no diagnostic criteria to diagnose this condition definitively."

Case 2: A 4-year-old girl presented for TB screening as part of a physical examination for her visa application. She was born in a country with a high prevalence of TB disease and her parent reported that she received the BCG vaccination. The clinician performed a TST. On follow-up, 20mm of induration was noted, and the patient was referred for a CXR, which was normal.

- **Case Analysis:** While the TST is the preferred test in children <5 years old, the IGRA test would have been more appropriate in this situation because the TST is not recommended in patients who have received the BCG vaccination.[13]
- **Discussion:** TST is not contraindicated in patients with a history of BCG vaccine, but clinicians should be aware of increased risk of false positives. Because of this, the CDC recommends IGRA in this population.[12,13]

Case 3: A 19-year-old man presented for TB screening prior to incarceration in the county jail. A TST was placed, but the patient failed to return in 72 hours for evaluation. The patient had to pay a fine for failure to present for TB screening results, and booking into county jail was delayed until another TST could be performed.

- **Case Analysis:** IGRA testing is a much more practical option for patients with logistical issues complicating 48-72 hour follow-up, as was the case with this patient.
- **Discussion:** As both the TST and IGRA tests have similar test characteristics, other patient factors, like cost and the ability to return for a second visit,

Table 3. High Risk Factors for Tuberculosis Exposure and Progression of Disease

High Risk of TB Exposure	High Risk of Progression to TB Disease
• Contacts of patients with TB disease • People born in or living in countries where TB is common[23] • People living in congregate settings where TB is more common, such as correctional facilities or homeless shelters • Employees of congregate living settings • Healthcare workers caring for TB patients	• People living with HIV/AIDS • Children <5 years of age • People with TB infection less than 2 years prior • Patients who are Immunosuppressed, such as those on TNF antagonists, chronic steroids, or following organ transplant • Intravenous drug users

Table adapted from reference 11

should be considered when selecting the best test.

Given the frequency of TB screening related visits in UC, centers should develop guidelines for clinicians with clear inclusion and exclusion criteria for each test to ensure uniformity of practice.

Diagnosis of LTBI and TB Disease

The diagnosis of TB disease is based on clinical judgment and expertise, as there are no diagnostic criteria to diagnose this condition definitively. All patients with a positive TST (depending on underlying patient characteristics) or positive IGRA test should be evaluated to determine what the positive test represents (ie, LTBI, TB disease, previously treated LTBI, previously treated TB disease, or history of BCG vaccine).

When clinical symptoms prompt clinicians to rule out TB disease, a detailed history and physical evaluation must be performed. Additional confirmatory testing is typically indicated. For pulmonary TB disease, this may include sputum acid fast bacilli (AFB) smears, sputum nucleic acid amplification testing (NAAT), and sputum TB culture (the gold standard microbiologic test for TB disease).[11] Of note, a CXR should be performed on patients with suspected TB disease.[20] CXR is most commonly normal, yet additional CXR findings may include hilar/mediastinal lymphadenopathy (15%), pleural effusion (3%), and segmental or lobar pulmonary consolidation (frequently in the upper lobes) (20%-40%).[4,21] For extrapulmonary TB disease with a fluid source (ie, pleural, cerebrospinal fluid, peritoneal, pericardial), suggested testing includes cell count, chemistries, adenosine deaminase levels, Interferon-gamma, AFB smears, NAAT, and TB culture. For extrapulmonary TB disease with a solid source (bone, lymph node), suggested testing includes histological exam (ie, biopsy) and TB culture.[10,22]

The risk of progression to TB disease is greatest in the first 2 years after infection and among those with underlying immunosuppression.[11] LTBI screening should be done for before patients are started on immunosuppressive therapies such as TNF antagonists, systemic corticosteroids (equivalent to/greater than 15 mg of prednisone per day), or immunosuppressive drug therapy following organ transplantation.[11]

Treatment for LTBI and TB Disease

The CDC advises against screening or testing patients for TB if adequate follow-up cannot be assured.[11] As such, it is critical that UC clinicians have a relationship with local public health departments that can facilitate further evaluation and treatment. If a patient presents with clinical signs or symptoms of TB disease, the patient should be placed in a surgical mask and transferred to the local emergency department (ED) for further medical evaluation.[11] If a patient is not clinically ill but there is suspicion for TB disease or LTBI, they should be placed in a mask and referred to the local public health department, following local guidelines.[11]

When considering LTBI and TB disease, patients can be divided into 2 related categories: those with a high risk of exposure to TB; and those at high risk of progression to TB disease once infected. Testing and treatment should be tailored based on the patient's risk for exposure and/or disease progression. If a patient is in neither category, and therefore low-risk for having LTBI or TB disease, screening is discouraged.[11]

Treatment of LTBI

Treatment of LTBI has evolved considerably over recent years. Months long daily regimens have been replaced with more simplified treatments that are both effective and shorter in duration. While daily medication is an option, one of the preferred regimens recommended by the CDC now consists of only 12 total doses over the course of 12 weeks. These changes have improved medication adherence and reduced adverse drug reactions.[24]

If the decision is made to proceed with LTBI treatment, collaboration with local public health is important. Additionally, the patient should be informed of drug-drug interactions and possible side effects. Patients

Table 4. Latent Tuberculosis Infection Treatment Regimens

Regimen	Advantages	Disadvantages
Rifampin (RIF) daily for 4 months* Adults: 10mg/kg Children:15-20mg/kg Max Dose: 600mg	• High Adherence • Short treatment course • Low rate of hepatotoxic events	• Discoloration of urine and other bodily fluids • Drug interactions including hormonal contraceptives, HIV antiretrovirals, and warfarin
Isoniazid (INH) and rifapentine (RPT) weekly for 3 months* Adults and Children ≥12 years INH: 15mg/kg rounded to the nearest 50 or 100mg INH max dose: 900mg RPT: 10–14.0 kg: 300mg 14.1–25.0 kg: 450mg 25.1–32.0 kg: 600mg 32.1–49.9 kg: 750mg ≥50.0 kg: 900mg RPT max dose: 900mg Children aged 2–11 years INH: 25 mg/kg INH max dose: 900mg RPT: as above	• High adherence • Low rate of adverse events • Can be used in children older than 2 years	• Potential for drug interactions, but fewer than with rifampin • Risk of hepatotoxicity • Some public health departments require directly observed treatment (DOT) for weekly regimen
Isoniazid and rifampin daily for 3-4 months* Adults INH: 5 mg/kg INH max dose: 300mg RIF: 10 mg/kg RIF max dose: 600mg Children INH: 10-20 mg/kg INH max dose: 300mg RIF: 15-20 mg/kg RIF max dose: 600mg	• Can self-administer • Similar efficacy to monotherapy with isoniazid for 6-12 months	• Drug interactions • Risk of hepatotoxicity
Isoniazid daily for 6 or 9 months with pyridoxine to prevent neuropathy Adults: 5mg/kg Children: 10-20mg/kg Max dose: 300mg	• Can be administered with HIV antiretrovirals • Can be administered twice a week; some public health departments require DOT for this regimen • Less costly than regimens containing rifampin	• Requires close follow-up in those with underlying liver disease or alternative regimen • Risk of hepatotoxicity • Risk of peripheral neuropathy • Lower adherence due to extended length of treatment

Table adapted from references 8,24,25.
**CDC Preferred Regimen. Regimens assume susceptibility to isoniazid and rifampin.*
The above regimens are for the treatment of latent TB Infection only and not for TB disease.

should have monthly follow-up visits to monitor for adverse drug reactions, hepatotoxicity, and adherence to the prescribed treatment regime.[25] While routine liver function testing is no longer recommended, testing should be obtained if the patient has underlying liver disease, risk factors for liver disease, or if the patient is exhibiting potential liver complications.[25] Common adverse reactions related to the typical LTBI treatment

regimens include vomiting, jaundice, fever, weakness, fatigue, change in stool color, change in urine color, decreased appetite, and paresthesias.[25] TST and IGRA testing cannot be used to monitor response to treatment as both tests evaluate the host immune response to infection and will remain positive despite treatment.[11]

Special Populations

HIV-Positive Patients

HIV-positive patients should be prescribed monotherapy with isoniazid because of drug interactions with rifampin and antiretroviral drugs. If monotherapy cannot be used, consider rifapentine, as there are fewer interactions than with rifampin.[8] Given the complexity of possible drug-drug interactions with antiretrovirals, these cases are best managed in conjunction with the patient's HIV specialist or referred to an appropriate infectious disease specialist.

Pregnancy

Pregnant patients who are at low risk of progression to TB disease should wait to initiate therapy until 2-3 months postpartum because there is concern for fetal exposure to the recommended antibiotics used in LTBI treatment regimens.[8]

Immunosuppression

Increasingly, disease modifying anti-rheumatic drugs (DMARDs) (including methotrexate, sulfasalazine, hydroxychloroquine, corticosteroids, leflunomide, tofacitinib, and TNF inhibitors—adalimumab, etanercept, and infliximab) are being used to manage many autoimmune conditions. Screening for LTBI is indicated prior to initiating these agents, and if a patient is found to have LTBI, they should complete at least 1 month of an LTBI regimen before initiating the DMARD.[8]

Healthcare Workers

The CDC highly recommends treatment of all healthcare workers diagnosed with LTBI due to concern for spread of TB among vulnerable patients they encounter.[15] An individual risk assessment of healthcare workers with a positive TB screening test should be performed to determine a diagnosis of LTBI. If the healthcare worker is low risk, consider a second screening test before initiating treatment. Following positive TST or IGRA, a CXR should be obtained. The CDC does not recommend follow-up CXRs unless symptoms develop.[24,26]

BCG Vaccinated

While the BCG vaccine does offer some degree of protection against severe TB disease in young children, it does not prevent all TB infections.[27] Patients with a history of receiving BCG vaccination who have risk factors for TB infection should be treated for LTBI if they have a positive IGRA screening.[28]

"Selection of appropriate testing in each patient scenario is critical to minimize unnecessary anxieties and to optimize recognition of patients who require treatment."

Social Determinants of Health

Many SDoH factors increase the risk of LTBI and TB disease. Patients with increased community exposure to TB, those living in congregate housing, non-White racial/ethnic groups, those with medical conditions including diabetes or HIV infection, those with limited access to healthcare, and those with low health literacy should all be considered at higher risk for TB infection.[29] The CDC recommends partnering with community resources, public health departments and organizations such as the TB Elimination Alliance to ensure access to materials that are culturally and linguistically appropriate to mitigate risks conferred by SDoH.[29]

Clinical Scenarios and Discussion

Case 4: A 23-year-old female student physician assistant (PA) presented with a TST of 17mm, which was 0mm in the previous year. She had no significant past medical history, and her only medication was an oral contraceptive. Her CXR was normal at this visit. She had no signs or symptoms of TB disease. Should this patient have been treated for LTBI?

- **Discussion:** Because the risk of conversion to TB disease is most likely within 2 years of infection, and to minimize risk to vulnerable populations with whom the PA student is working, the treating physician appropriately recommended proceeding with treatment for LTBI.

Case 5: A 33-year-old man presented with 10 days of cough, diffuse myalgias, subjective fever, and sore throat. His vital signs were normal except for a fever of 38.5°C. He had no past medical history. He immigrated

to the United States 1 year prior from Venezuela. A CXR performed in UC demonstrated a cavitary lesion in the left upper lobe of the lung. How should the UC clinician have managed this patient?

- **Discussion:** This patient has high risk for TB disease, however, the patient was not clinically ill at UC presentation enough to require hospitalization. As such, appropriate care begins with placing the patient in a surgical mask while in UC and performing further evaluation. TB testing with either a TST or IGRA is appropriate. As cavitary lung lesions have a broad differential diagnosis, ED referral for consideration of chest computed tomography (CT) is generally recommended as many of these lesions can have associated pneumothorax, and patients may benefit from therapeutic and/or diagnostic aspiration.[30] While TB is one possible etiology for a cavitary lung lesion, it is important to consider other infections, including pneumocystis and bacterial pneumonia as well.[30] Among patients with risk factors for TB exposure and signs and symptoms of TB disease who are not clinically ill, referral to the local public health department is critical once a positive TB test result returns.

Conclusion

It is vital for UC clinicians to be familiar with TB screening, testing, and treatment guidelines as well as the known risk factors for TB, including SDoH. Selection of appropriate testing in each patient scenario is critical to minimize unnecessary anxieties and to optimize recognition of patients who require treatment. While neither TST nor IGRA are perfect tests, they both have been extensively validated and are simple to administer in the UC setting. When LTBI is suspected, initiating treatment from UC is appropriate. With appropriate testing and treatment protocols in place, UC is an ideal setting to screen and treat TB (LTBI and TB disease) to minimize ongoing risks to our patients and communities. ■

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Case Report

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Looking Beyond the Mouth–A Rare Case of Acute Glaucoma Presenting with Dental Pain: A Case Report

Urgent Message: Acute angle closure glaucoma can present with a variety of types of head and facial pain. Rapid identification of concern for elevated intraocular pressure (IOP) or confirmation of elevated IOP by tonometry is critical for preserving vision.

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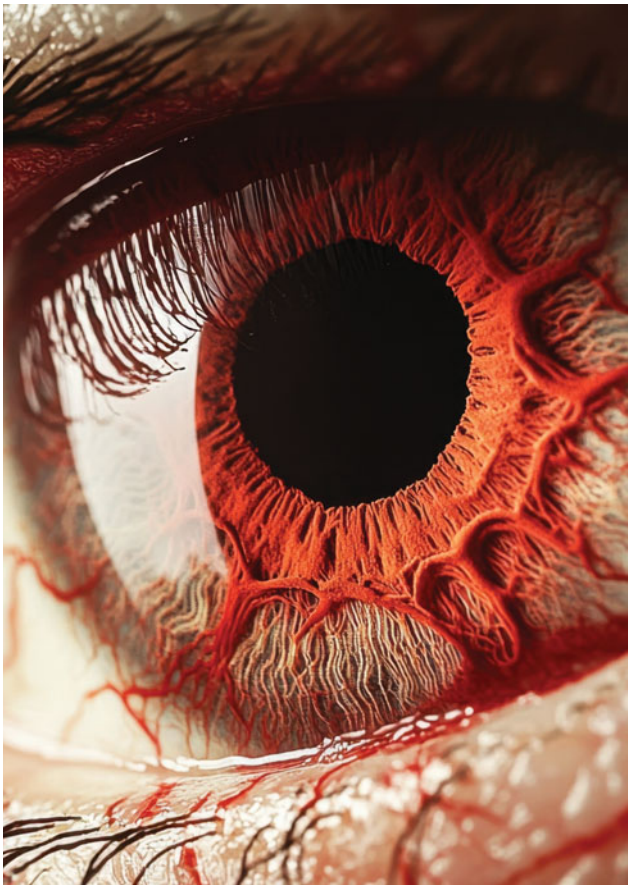
Key Words: Acute angle closure glaucoma, intraocular pressure, iridotomy

Abstract

Introduction: Acute angle closure glaucoma (AACG) is a rare, serious condition and one of the few true ophthalmologic emergencies. Due to the time sensitive nature of the diagnosis, it is important for urgent care (UC) clinicians to be aware of its various manifestations.

Clinical Presentation: A 60-year-old woman presented to the emergency department (ED) with a chief complaint of acute and sudden-onset dental pain. She also complained of new blurry vision in the ipsilateral eye. Her visual acuity was 20/200 in the affected eye. The triage nurse assigned her an emergency severity index (ESI) level of 4 based on her complaint and vital signs.

Physical examination: After triage, the patient was assessed by a clinician in the waiting room. On exam, the patient was hypertensive, but otherwise her vital signs were normal. In evaluating her face and head, the clinician noted no facial swelling and only chronic



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appearing dental caries that were not in the area of her pain. Ocular exam of her left eye revealed a mid-range fixed pupil, and the globe was firm to the touch with "finger palpation" (tactile assessment over a closed lid). Her right eye was normal in appearance, tactile assessment, and acuity. Her neck was supple, and her ears showed no abnormalities. She was quickly brought back to a room where tonometry was performed revealing a critical intraocular pressure (IOP) of 66 mmHg.

Diagnosis: Acute angle closure glaucoma

Resolution: The patient was aggressively treated with multiple IOP-reducing medications, however, her pressure remained unsafely elevated. Ophthalmology was consulted, and she underwent laser iridotomy by the on-call ophthalmologist. She was discharged the next day. She underwent subsequent laser iridotomy as an outpatient, and her IOP stabilized. With adequate pressure control, normal vision in the affected eye was restored.

Conclusion: This patient's pain was experienced predominantly as dental pain, which led to some delay in focused ocular assessment. However, thanks to aggressive treatment once AACG was identified, the patient was able regain normal vision in the affected eye.

Introduction

Glaucoma is one of the leading causes of blindness in the world.[1] Glaucoma refers to a pathologic increase in IOP, and while the exact mechanism is poorly understood, the increased pressure eventually results in retinal cell death if not adequately treated.[1] The open angle glaucoma subtype tends to develop slowly and is usually asymptomatic—slowly progressive until vision loss occurs.[1] Conversely, AACG, as the name implies, involves rapid increases in IOP and constitutes a medical emergency; vision loss can occur if not treated rapidly, which may be irreversible.[1] Normal IOP ranges from 8-21 mmHg, however in cases of AACG, typical pressures will be 40-80mmHg.[1-6] The formal diagnosis of AACG is clinical, based on identification of an acutely elevated IOP, corneal edema, symptoms suggestive of AACG, shallow anterior chamber, and a close angle on gonioscopy.[1,7,8,9] Acute angle closure glaucoma can be differentiated from other versions of glaucoma which generally don't have acute symptoms, pain, or sudden vision changes.[7,9] Gonioscopy and chamber measurement is almost exclusively restricted to clinics of eye specialists, therefore, such data is likely not available for UC or ED assessment and medical decision making.

"Glaucoma refers to a pathologic increase in IOP, and while the exact mechanism is poorly understood, the increased pressure eventually results in retinal cell death if not adequately treated."

IOP is regulated through the balance of production and drainage of the aqueous humor. Under normal conditions, aqueous fluid is formed in the ciliary body and drained through the trabecular meshwork.[1] In the setting of AACG, this process is disrupted, and the drainage of aqueous fluid is compromised.[1,9] Any degree of increased IOP can lead to excessive pressure on the optic nerve, which subsequently can lead to ischemia of retinal ganglion cells. In the setting of AACG, there is a rapid rise of IOP, causing rapid onset of retinal ischemia.[9] AACG can occur under multiple circumstances with pupil dilation. As the iris relaxes it impedes the outflow of aqueous humor, resulting in a rapid increase in IOP.[10,11] This phenomenon, termed "pupillary block," can be precipitated by various classes of pharmacologic agents that contribute to dilation of the pupil, most notably alpha-1 and beta-2 receptor agonists, anticholinergic agents, antihistamines, sulfonamides, and serotonergic agents; non-pharmacologic causes include an anteriorly displaced or enlarged lens.[1,3,7,11] Risk factors for AACG include Asian ancestry, female sex, narrow globe shape, farsightedness, older age, and history of AACG in the contralateral eye.[3,7,11] In North America, the incidence of AACG is 1.75 cases per 100,000 person years among those aged >50 years.[12] Comparatively, the incidence in Hong Kong and Singapore is 12.2 per 100,000 person years.[13]

Common symptoms of AACG include periocular pain (83% of cases), visual changes (eg, vision loss/halos; 82% of cases), nausea/vomiting (44% of cases), and headache (34% of cases).[3]

The diagnosis of AACG involves suggestive symptoms and an elevated IOP in the affected eye. On exam, AACG almost universally will present with the findings of a mid-range, fixed pupil in addition to elevated IOP.[3] Other less common findings on exam include corneal edema (swelling of the cornea; 80% of cases) and conjunctival injection (75% of cases).[3] In the absence of tonometry,

a firm globe with "finger palpation" has been shown to be correlated with elevated IOP/glaucoma.[3,7]

In one study of patients with AACG, one-third of patients had not had any contact with an ophthalmologist previously, therefore it is vital for emergency medicine and UC clinicians to have familiarity with diagnostic criteria for AACG.[3] As the vast majority of UC centers do not have access to tonometry, tactile assessment of the firmness of the globes with finger palpation may be the only means of assessing IOP. While relatively few studies have assessed the accuracy of palpation to estimate IOP, existing studies do suggest that this exam technique has some clinical utility. While certainly (and expectedly) less accurate than tonometry measurements, comparing the firmness of the affected globe to the patient's contralateral eye and to a control eye (eg, that of the clinician) can offer a useful point of reference.[3,10,14]

Finger palpation of the globe involves asking the patient to close their eyes and gaze down. Over their closed lids, the examiner then uses both index fingers to palpate the eye with gentle pressure on the upper eyelid using alternating fingers.[10,14] The exam is then repeated on the other eye. If one eye has a markedly increased IOP, it will feel comparatively firm to the touch. [10,14] Finger palpation was evaluated in a 2019 study where first-year ophthalmology residents and attendings were asked to evaluate the IOP of 58 participants by tactile assessment only, which was then compared with actual IOP.[10] In this study, the first-year residents' estimates were only about 50% accurate for the first 15 assessments, but accuracy (ie, within 5mmhg +/- the actual measured IOP value) improved with subsequent testing to 80-100%.[10] This study suggests greater accuracy than prior investigators who have evaluated the palpation technique. However, prior studies do suggest that with experience and at significantly elevated IOP values (ie, >30mmHg), finger palpation estimates can be reasonably accurate. [15,16] Regardless, the best way to measure IOP is with a tonometry device. In cases of reasonable suspicion for AACG, patients should be immediately referred to a clinic or ED with tonometry capabilities.

Case Presentation

A 60-year-old woman presented to the ED with a chief complaint of dental pain. She reported severe left upper dental pain that radiated to her left eye, which began when she awoke 12 hours earlier. Her past medical history included open angle glaucoma, peripheral arterial disease, and prior surgical removal of cataracts. Additionally, she reported nausea and vomiting as well as blurry vision in the left eye since the pain began. She had previously been prescribed several eye drops for glaucoma and admitted occasionally not remembering to use them as directed.

Figure 1.

"This case highlights the importance of considering AACG in the differential diagnosis for undifferentiated headache and facial pain, especially in patients with risk factors, such as a history of glaucoma and/or ocular surgery."

Physical Exam Findings

At triage in the ED, her initial vitals were: blood pressure of 179/92 mmHg; heart rate of 78 beats per minute; respiratory rate of 18 per minute; temperature of 36.5°C. Her visual acuity was 20/200 in the left eye (OS), and 20/30 in the right eye (OD). On clinical exam by the triage clinician, she appeared to be in pain. Her head and neck exam revealed chronic dental caries, but no trismus, facial swelling, or other apparent acute findings. Her neck was supple with normal range of motion. Her ocular exam revealed a round, 3mm, pupil that was briskly reactive on the right. The pupil of her OS was mid-range and unreactive to light. A screening visual field exam revealed no deficits. The left cornea appeared somewhat opaque (ie, "steamy"), and there was con-

Table 1: Medications For Acute Angle Closure Glaucoma Treatment[21-23]

Class	Names	Mechanism	Potential Side Effects
Beta-Blockers	timolol, metipranolol, carteolol (topical)	Lower aqueous humor production	Chronic obstructive pulmonary disease exacerbation, bronchospasm, bradycardia, heart block
Carbonic Anhydrase Inhibitor	acetazolamide, methazolamide, ethoxzolamide (systemic)dorzolamide and brinzolamide (topical)	Lower aqueous humor production	Pain and burning (topical)
Prostaglandins	latanoprost, travoprost, bimatoprost, urnoprostone, tafluprost (topical)	Enhance outflow of aqueous humor	Ocular discomfort, hyperpigmentation of eyelids, uveitis
Alpha-Agonists	brimonidine, apraclonidine (topical)	Lower aqueous humor production	Systemic hypotension with apraclonidine, allergic blepharoconjunctivitis, dry mouth and nose with brimonidine
Hyperosmotic Agents	mannitol, isosorbide (systemic)	Lower aqueous fluid volume by osmotic effect	Electrolyte and fluid imbalance, diuresis, peripheral edema, dehydration, hypotension, tachycardia

junctival injection (**Figure 1**). Finger palpation of both eyes was performed, which demonstrated a relatively firm left globe compared to the right. Topical anesthetic drops were applied without pain relief, and the IOP was measured with a Tono-Pen tonometer bilaterally. The IOP of OD was normal (16mmHg), however, the IOP of OS was markedly elevated at 66mmHg. Fluorescein staining revealed no corneal defects bilaterally. A screening neurologic exam, including extraocular movements (EOM), was unremarkable.

Differential Diagnosis and Medical Decision Making

The differential diagnosis for the patient's presentation considered included: temporal/giant cell arteritis, migraine, odontogenic infection, maxillary sinusitis, cavernous sinus thrombosis, ocular infection/endophthalmitis, invasive fungal sinus infection, ocular trauma, uveitis, scleritis or episcleritis, keratitis, dental pain, corneal abrasion, or ulcer. However, given the constellation of symptoms, exam findings, and markedly elevated IOP, the leading diagnosis of concern was AACG. Additionally, while the patient complained of dental pain, there were no exam findings to suggest the pain was odontogenic in nature. Based on this initial clinician assessment from triage, the patient was quickly moved from the waiting room to a bed in the ED.

Case Continuation and Resolution

The patient was treated symptomatically with intravenous analgesia and antiemetics. To mitigate her presumed acutely elevated IOP, she was treated with acetazolamide, dorzolamide-timolol, latanoprost, and brimonidine ophthalmic drops. The treating clinician consulted with the on-call ophthalmologist who recommended hourly administration of the ophthalmic drops until the pressure had normalized and symptoms were controlled. Over the subsequent 4 hours, all of the above ophthalmic medications were administered, and the ophthalmologist came to the ED to assist at the bedside. Despite these measures, the patient achieved minimal reduction in her OS IOP. Given recalcitrant elevation in pressure, the consulting ophthalmologist elected to proceed with laser iridotomy. After the iridotomy, the patient's IOP improved to 37 mmHg with corresponding improvement in her facial pain and nausea symptoms. She was discharged after the procedure with plans for repeat evaluation and pressure check in the ophthalmology clinic the next morning.

When the patient was seen the following day, her IOP had continued to decline to 8 mmHg. She underwent repeat laser iridotomy at that time and was then referred back to her glaucoma specialist for follow-up. Her visual acuity had returned to baseline at her last known ophthalmology follow-up visit.

Table 2: Medications That Can Precipitate Acute Angle Closure Glaucoma[2]

Class	Medication Examples	Mechanism
Alpha-1 Adrenergic Agents	phenylephrine, ephedrine	Pupil dilation/pupillary block
Beta-2 Adrenergic Agents	albuterol, salbutamol	Pupil dilation/pupillary block
Anticholinergics	atropine, glycopyrrolate, scopolamine	Pupil dilation/pupillary block
Antihistamines	cetirizine	Pupil dilation/pupillary block
Cholinergic Agents	pilocarpine	Anterior lens displacement
Sulfonamides	topiramate, acetazolamide	Anterior lens displacement
Serotonergic Agents	venlafaxine, escitalopram, triptans, aripiprazole	Pupil dilation/pupillary block

Discussion

While pain is a common feature in AACG, reporting pain associated with this condition as jaw or dental pain has not been previously described in the literature. This case highlights the importance of considering AACG in the differential diagnosis for undifferentiated headache and facial pain, especially in patients with risk factors, such as a history of glaucoma and/or ocular surgery. One possible explanation could be that the shared somatic innervation of the facial structures through the trigeminal nerve (ie, the fifth cranial nerve) may be responsible for this sort of atypical presentation. As headache is a highly non-specific symptom and AACG is a highly time-sensitive, vision threatening diagnosis, it is critical to consider AACG in other forms of cephalgia beyond eye pain.[17] In the absence of immediately available tonometry, risk stratification after consideration of AACG is the most crucial task for the UC clinician. As there are currently no clinical decision rules for AACG risk stratification, this assessment of pretest (ie, tonometry) probability relies on clinician gestalt. This gestalt, furthermore, relies on clinician understanding of signs, symptoms, and risk factors of AACG. As previously noted, patients of Asian ethnic descent, women, and those aged >50 years are at the greatest risk. Additionally, patients with history of hyperopia (farsightedness), and/or glaucoma are also at increased risk.[3,7,11,17] Certainly, medication non-adherence was a factor in this case, however, it is important to consider pharmacologic precipitants specifically in cases of suspected AACG. Medications that can trigger AACG include agents that cause pupillary dilation and lens position AACG (**Table 2**).[2]

In UC settings without access to tonometry, finger palpation can be used to offer additional data as to the likelihood of clinically significant IOP elevation.[10] Studies on the accuracy of finger palpation estimates of IOP are limited and have been conducted exclusively among patients cared for by eye specialists, therefore, it is not advisable for UC clinicians to rely on palpation as a surrogate for tonometry, especially in cases with suggestive symptoms and/or concerning findings on ocular exam.[15,16] In cases with moderate-high clinical suspicion for AACG where tonometry is not available to the UC clinician, immediate ED or eye clinic evaluation is indicated.

"Prompt lowering of IOP is essential to mitigate the risk and degree of permanent vision loss."

Emergency management in settings with access to the pharmacologic agents in **Table 1** involves ophthalmologist consultation to guide medicine administration until pressures are controlled, ideally within the range of 22-24 mmHg and symptoms resolve.[7,8,11,13] Prompt lowering of IOP is essential to mitigate the risk and degree of permanent vision loss.[6,7] If this can be achieved, urgent/next day follow-up is reasonable. However, medical management may not be definitive in the acute setting in many cases, and emergent surgical therapy may be required (as was the case with the patient presented).[7] Hyperosmotic agents like mannitol can also be used for refractory cases, although cardiovascular side effects may occur.[13]

Conceptually, it is important to understand that medications serve only as a bridge until definitive surgical management. Iridotomy is the most efficacious inter-

vention for AACG. The combination of medical therapy and laser iridotomy has 86-99% efficacy in reducing IOP and preserving retinal perfusion; laser iridotomy also has the advantage of being safe and generally well tolerated.[1,13,19,20] Additional procedures that may be implemented include needle aspiration (ie, anterior chamber paracentesis), incisional iridectomy, phacoemulsification, and cyclophotocoagulation.[20] Ophthalmologists may also recommend other procedures to prevent future attacks including performing a prophylactic iridotomy in the contralateral eye.[20] After adequate reduction of IOP, patients require regular follow-up at an appropriate ocular specialist to ensure the IOP remains in a safe range and vision remains unaffected.[20]

Takeaway Points

- AACG is an ocular emergency, and prompt recognition and treatment of elevated IOP is critical to prevent permanent vision loss.
- Consider AACG in patients presenting with headache or other forms of cephalgia, especially if accompanied by vision changes, nausea, and vomiting.
- Characteristic physical exam findings suggestive of AACG include mid-range, non-reactive pupil and conjunctival injection.
- In the absence of tonometry, finger palpation of both globes can provide further objective data of elevated IOP. However, the accuracy of finger palpation estimations of IOP has not been assessed in UC, and clinicians should not rely on apparently normal globe palpation to obviate concerns for elevated IOP in cases of moderate-high clinical suspicion.
- In cases of confirmed or suspected AACG, immediate eye specialist or ED evaluation is indicated.
- Medical management of elevated IOP is generally not definitive, and many patients require urgent, if not emergent, surgical intervention. ■

Ethics Statement

The patient provided verbal consent for the case and image to be published.

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Starting an Urgent Care in a New Era

Urgent Message: Today, there are very few market opportunities for urgent care that present no competition, so operators must assess not just the existence of local competition but also the nuanced qualities of each competitor.

Heather Real

Citation: Real H. Starting an Urgent Care in a New Era. *J Urgent Care Med.* 2025; 19(5)37-39

The urgent care industry has come a long way over the last several decades. With 2024 being the first year where there was a contraction in growth, can the industry be considered "mature?" Maturity certainly doesn't mean there isn't a need for more urgent care, it just means that today's entrepreneurs must be even more strategic and use more sophisticated tools to build a successful business.

Not only has urgent care rooftop growth slowed to a 10-year low, between May 2023 and December 2024, the number of clinics hosted in food and pharmacy retail stores dropped by more than 20%. This reduction is likely attributed to the widely reported clinic closures by Walgreens and Walmart. Even with their small clinic square footage, reduced services, and the leanest of staffing models, there just wasn't enough consumer adoption for the in-store clinic model to thrive. What does this mean for new urgent care operators? It means that patients are choosing more traditional medical settings for their care, either in the urgent care, primary care provider (PCP) office, or in some cases the local emergency department (ED). With urgent care being the most accessible, efficient, and affordable point of access, this market shift bodes well for the urgent care industry, but how can new operators leverage this change for their success?

Success By Preventing Failure

The reason for an urgent care failure is usually simple: money, or more precisely, lack thereof. In many cases, failure can be prevented at the point of key decisions: Location? Access to adequate capital? Service delivery model?

Each decision made by the entrepreneur will have an impact on whether the business will realize success or not. Today's urgent care entrepreneurs don't necessarily need to analyze different information than start-ups did 10 years ago—they simply need to understand what that information means today.

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Demographics are high on the list of analytics, however, the results now have different implications. Historically, urgent care would avoid areas with a high percentage of Medicaid members, but now this is of less consequence. Medicaid expansion and privatization offer a value proposition to managed care payers in terms of ED cost savings for segments with historically high utilization. Plus, more payers are requiring urgent care providers to accept their managed Medicaid members in order to also gain network status with their commercial products. While this broader payer mix enlarges the potential patient population, it also surfaces new competition with facility types that weren't part of the competitive landscape previously.

"In 2024, startups saw credentialing timeframes far exceeding 12 months, creating increased financial strain even before commencing operations."

Adding urgent care services to a community where they did not previously exist brings a faster volume ramp-up to break-even. Reaching break-even would be more difficult for, say, the 3rd urgent care in a market that can only support 2. When patients must be won over from existing providers, a new urgent care must out-position and intercept the competition while offering a better overall experience.

In the urgent care boom of the 2010s, it was still possible to find communities where no urgent care competition existed, and securing the best site in town would almost certainly yield long-term success. Today, there are very few opportunities with no competition, and we now must analyze the quality of each competitor. When considering other urgent cares, what are their hours, services, and reputation? How do you compare? Furthermore, what is their payer mix and are there gaps you can address in the target community?

Expanded Competition

Other facility types such as PCP offices are extending hours, adding immediate telemedicine access through apps like MyChart, and even offering same-day and walk-in access. Furthermore, Federally Qualified Health Centers (FQHCs) are increasingly adding urgent care to their community health models. In years past, PCPs and FQHCs wouldn't align as competitors, but today they cannot be dismissed. It is crucial to understand how their services are received and utilized by the community to understand competitive opportunities.

The uninsured and underinsured population have increasing options for care, now including most urgent care facilities. Participation with state Medicaid and privatized managed Medicaid plans will help draw those patients in, but it is also imperative to offer competitive cash pay rates that are easy for patients to determine. More and more consumers are opting to pay cash for their urgent care needs, and having a simple and transparent cash-pay fee schedule can help draw patients to your facility over competitors.

Today's urgent care startups are facing many of the same challenges of the operators that have come before them, but at a whole new level of difficulty. Ten years ago, it was customary to expect new contracting and credentialing to take about 6 months. This was painful but not insurmountable. In 2024, startups saw credentialing timeframes far exceeding 12 months, creating increased financial strain even before commencing operations. These operators have had to be more prepared, patient, and inventive than their predecessors to survive these extreme timelines. To achieve volume, it is now also important to participate in major payer networks in most markets. Increasingly, at least 1 of the top 5 payers in any given market will be closed to new urgent care, at least initially. It is still possible to gain network status after a period of time has passed and the businesses can prove they are serving the payer's members efficiently and affordably. Working with experts that have experience in various markets can provide urgent care startups new insights into timelines, network access, and how to manage payer processes.

Essential to developing a new urgent care is a comprehensive project plan that outlines what activities are done at what time and in what sequence to assure the center opens on-time, on-budget, and with contracts in place. The contracting and credentialling process should start as soon as the operator has an address and tax ID number.

Securing Space

As if it weren't enough to have increased competition in most desired markets, the quality of retail space available has also changed. The rates at which these spaces can be secured is increasingly part of the financial conversation. Rent rates aside, the quality of space will also play an important role in the success of the new business. As proven by the contraction of the retail clinics,

consumers are selective about where they seek medical care. There is a "halo effect" in retail that can impact visit volumes positively or negatively. It is well-known that major/chain groceries are strong anchors for urgent care, driving consistent and frequent consumer awareness. Just as these strong anchors can boost urgent care businesses, low-quality retail can have an adverse effect. More and more operators are considering C- and D-grade real estate for their urgent care simply because there is a lack of higher quality options. Even if a site has excellent traffic and signage, being situated next to the vape shop or tattoo studio may dissuade potential patients from using the urgent care services.

In the "Amazon Economy," the 1 remaining retailer driving weekly traffic is grocery. Walmart, Kroger, Albertsons, Safeway or Publix remain the center point of their communities and a consistent traffic draw also appealing to banks, service stations, quick serve restaurants, auto parts, hardware stores, car washes and other convenience services. Their nearby site location can be an asset.

Marketing strategies have evolved. The oldest urgent cares relied on word-of-mouth and grassroots marketing to grow their business. As the world became more digital, operators had to split their focus toward learning and leveraging digital marketing. They learned to harness the power of search engine optimization, Google Ads, and the like. Then the pandemic shifted nearly all marketing online, focusing on urgent care's testing capabilities and the virtual waiting room. Today's operators must continue to blend all of these strategies, while also getting back to community roots to drive consumer loyalty.

"Today's urgent care entrepreneurs don't necessarily need to analyze different information than startups did 10 years ago—they simply need to understand what that information means today."

Throughout the decades, urgent care operators have stayed true to the core concept of bringing efficient and affordable healthcare to patients when and where they need it. The greater emphasis now is on strategic planning to ensure long-term success. ■

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The Legality of Docking the Pay of Urgent Care Employees

Urgent Message: While legal under circumstances outlined by federal and state law, docking employee pay for violating an employer's policies may be viewed as demoralizing and unethical versus punitive actions like warnings or suspension.

Alan A. Ayers, MBA, MAcc

Citation: Ayers AA. The Legality of Docking the Pay of Urgent Care Employees. *J Urgent Care Med.* 2025; 19(5):41-43

Workers frequently make mistakes on the job. Some are mere oversights that are quickly corrected, while others are significant, negatively impacting the bottom line of the business. When mistakes happen, urgent care operators may wonder if they can dock the pay of exempt and non-exempt employees and under what circumstances.

The article will provide an overview of the situations where docking pay is legal for exempt and non-exempt employees.

What is the Fair Labor Standards Act?

Understanding the appropriateness of employee wage docking requires knowledge of state and federal laws about pay.[1] First, the Fair Labor Standards Act (FLSA) governs wage and hour laws, and the law dictates the federal minimum wage, the number of hours employees can work before receiving overtime, and other requirements about the payment of wages.[2]

The FLSA applies broadly enough to cover nearly all businesses, including urgent care centers. But note that some workers are not covered by the FLSA, even if their employer is. The difference has to do with the workers' payment.[3] The FLSA doesn't cover what are considered "exempt" employees.

An employee is considered exempt if they:

- Receive more than at least twice the minimum wage for full-time employment;
- Are paid on a salary basis; and
- Perform "exempt" job duties (eg, executive, administrative, professional).

However, the FLSA applies for "nonexempt" employees who:

- Are paid hourly;
- Have limited ability for self-supervision; and
- Make less than twice the minimum wage for full-time employment.

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Illegal or Unethical?

Pay deductions can negatively impact employee morale and motivation, particularly if a policy is not applied consistently across all employees and an employee is not given a clear explanation for the deduction. The losses to an organization of poor morale—including distrust of management, damaged reputation in the community, increased turnover and reduced service levels—may be more costly to a business in the long-run than whatever cash it could recover from docking pay. Albeit legal, docking an employee's pay may be perceived as unethical unless it's done in very specific situations, such as when an employee has clearly and deliberately violated a written company policy, caused significant damage to property, or is habitually taking unauthorized time off. Even then, it should be done with transparency, following proper disciplinary procedures. In most cases, other disciplinary actions like warnings or suspension might be more appropriate than directly reducing pay.

In addition, a nonexempt employee must be paid overtime as defined by the FLSA for all hours over 40 hours of work per week.[4]

Docking Exempt Salaried Employees

An exempt employee's salary, as defined by the FLSA, must be paid in full if *any* work is performed during the workweek. As such, an employer can't, for example, arbitrarily deduct an hour's pay for an employee showing up an hour late or taking time for medical appointments. Note that if an urgent care operator improperly docks pay of a salaried employee, the employer would be subject to overtime pay, back taxes, and penalties.[5]

Thus, a salaried employee who works more than 40 hours in a week is also exempt from earning overtime because exempt status entitles that individual to a set pay rate, no matter the number of hours the individual works.

Specific Circumstances in Which an Employer Can Dock an Exempt Employee's Pay

Under the FLSA, employers can reduce an exempt employee's salary only in specific circumstances, which include the following:

- When an employee is absent from work for 1 or more full days for personal reasons other than sickness or disability
- For absences of 1 or more full days due to sickness or disability if the deduction is made in accordance with a bona fide plan, policy, or practice of providing compensation for salary lost due to illness
- To offset amounts employees receive as jury or witness fees or for temporary military duty pay
- For penalties imposed in good faith for infractions of safety rules of major significance
- For unpaid disciplinary suspensions of 1 or more full days imposed in good faith for workplace conduct rule infractions
- In the employee's initial or terminal week of employment if the employee does not work the full week
- For unpaid leave taken by the employee under the Federal Family and Medical Leave Act[6]

Reducing exempt employees' pay is only allowed for full-day absences for the reasons listed. Beyond these specific instances, pay docking is generally not permissible.[7]

"Employers should also have a clearly written policy that states how missed time is handled for non-exempt employees when they have used all of their paid time off."

Docking Non-Exempt Employees

Non-exempt employees are typically paid on an hourly basis. As a result, if a non-exempt employee has depleted their paid time off and needs either a full or partial day off, employers need not pay them for the time away from work.

In the case of illness, employers must make certain that employees have used up paid sick time for the absence, if applicable, before docking pay. Employers should also have a clearly written policy that states how missed time is handled for non-exempt employees when they have used all of their paid time off.[8]

Other Situations

Under federal law, employers may deduct the cost of a uniform, and employers may require employees to pay for tools and equipment—but only if the employee's pay after deductions is at least equal to the minimum wage.[9] Some states allow docking for damage to prop-

erty, cash shortages, returned checks, etc. with a signed consent.[10]

For example, Oregon employers may require employees to pay for their work tools if the employee earns more than the minimum wage. However, Oregon employers may not achieve this by withholding money from the employee's paycheck. In contrast, in California, employers must provide all tools and equipment necessary to perform the job, and the employees cannot be required to pay anything for them.[11]

Under federal law, employers can charge the employee for items they break or for shortages in their cash register drawers, provided the employee is still earning at least the minimum wage.[12]

Liability for Adverse Employment Actions

Urgent care operators should bear in mind that Title VII of the Civil Rights Act of 1964 prohibits discrimination in any aspect of employment, including compensation, based on race, color, sex (including sexual orientation, gender identity, and pregnancy), religion, or national origin, while the Americans with Disabilities Act prohibits discrimination on the basis of disability.[13] Additionally, Title VII prohibits retaliation that produces injury or harm against employees who complain of discrimination, file a formal charge of discrimination, or who testify in an investigation or lawsuit involving discrimination. Many state laws also protect those who have filed workers compensation claims.[14]

A policy of docking pay may be legal, but if it targets a protected class, it may cross the line into discrimination. For instance, if female employees are consistently docked for arriving late but their male colleagues are not, the practice may be considered discriminatory.

To show that the retaliation produced injury or harm, an employee must demonstrate that "a reasonable employee would have found the challenged action materially adverse."[15] The adverse action must "amount to a significant change in employment status, such as firing, failing to promote, reassignment with significantly different responsibilities, *or a decision causing a significant change in benefits.*"[16] Ultimately, almost every adverse action affects pay.

Summary

Remember that exempt employees are hired to do the job and not to work specific hours. Federal employment law provides a number of exceptions for docking pay based on the category of employee. Urgent care operators should understand that job title alone isn't adequate to establish exempt status, which determines whether the salary basis exemptions apply. Again, federal law and the application of state wage and hour laws may differ. ■

"For instance, if female employees are consistently docked for arriving late but their male colleagues are not, the practice may be considered discriminatory."

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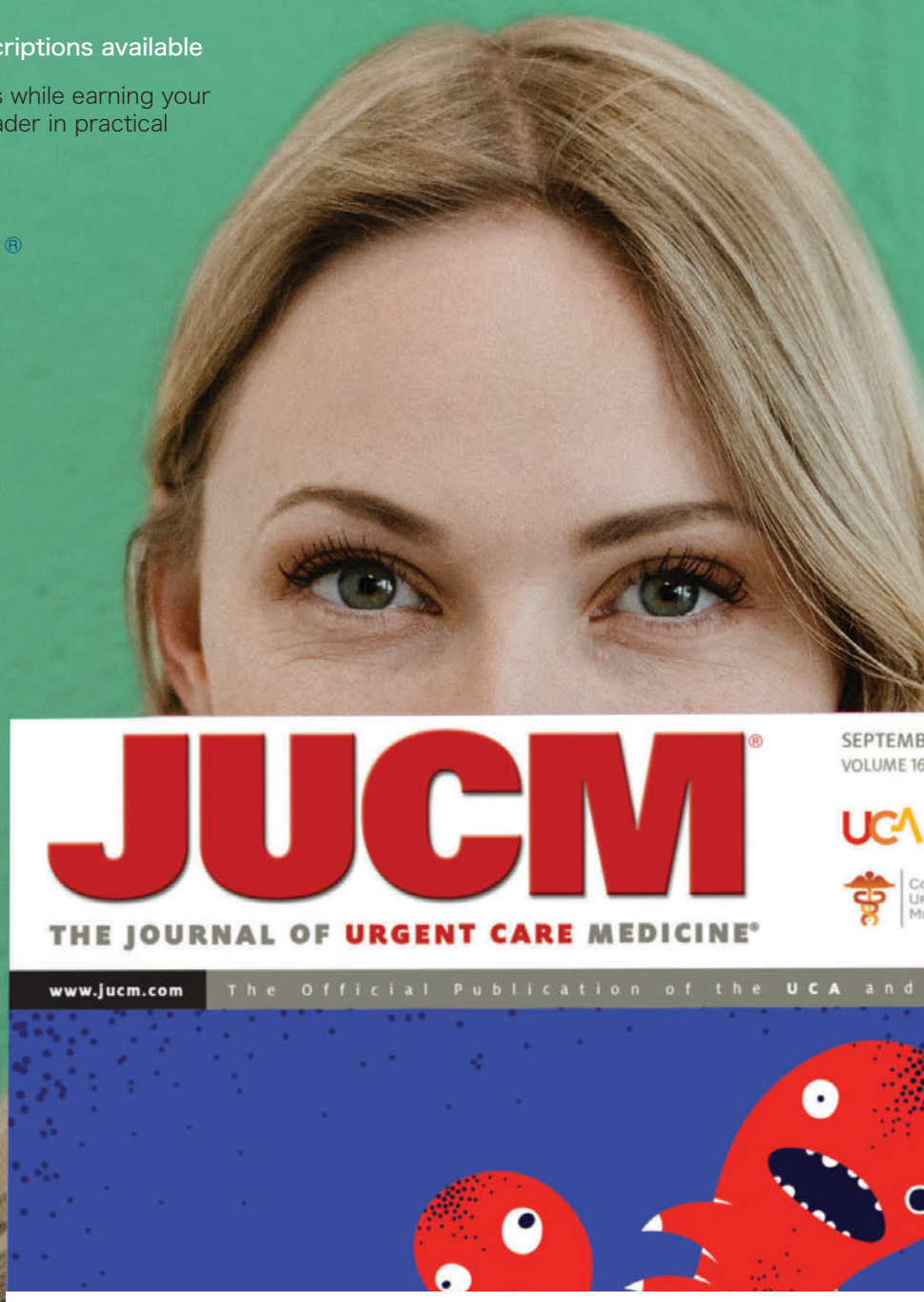

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Concussion Recovery in Young Children

Take Home Point: This study suggests that children aged 5-12 years old with concussion have similar trajectories of recovery regardless of mechanism of injury.

Citation: Ledoux A, Sicard V, Bijelic V, et. all. Symptom Recovery in Children Aged 5 to 12 Years With Sport-Related and Non–Sport-Related Concussion. *JAMA Netw Open*. 2024 Dec 2;7(12): e2448797. doi: 10.1001/jamanetworkopen.2024.48797.

Relevance: More knowledge about the natural history of concussion in children can help clinicians to more accurately guide parental expectations about recovery and return to sport and school.

Study Summary: This was a planned secondary analysis of a previous multicentered cohort study, the Predicting Persistent Post-Concussive Problems in Pediatrics (5P), which was based in 9 pediatric emergency departments in Canada. In this study, participants aged 5-12 years old with sports-related (SRC) and non-sports-related (NSRC) concussions were included. All participants underwent comprehensive evaluations which included the Acute Concussion Evaluation (ACE), the Child-Sport Concussion Assessment Tool 3 (Child-SCAT3) and the Post-Concussion Symptom Inventory (PCSI). Using the PCSI, participants completed either a parent-rated (children aged 5-7 years) or self-rated (children aged 8-12 years) assessment at weeks 1, 2, 4, 8, and 12 post-injury.

The authors included 1,747 participants in their analysis: 513 aged 5-7 years and 1,234 children aged 8-12 years. They found that of children aged 5-7 years with SRC, 111 (53.6%) sustained their SRC in non-contact sports, 44 (21.3%) in limited-contact or limited-impact sports, and 52 (25.1%) in contact or collision sports. Similarly, in those aged 8-12 years with SRC, 176 (22.3%) sustained their SRC in non-contact sports, 229 (29.0%) in limited-contact sports, and 385 (48.7%) in collision sports. The most prevalent injury settings were hockey, recreational play, soccer, snowboarding, basketball, and football. There were no significant differences in recovery trajectories found between children with SRC and NSRC. Both SRC and NSRC showed a decrease in symptoms over time in a nonlinear fashion. While there were not significant differences in recovery trajectories between children with SRC and NSRC, it is noteworthy that a lower proportion of children aged 5-7 years were symptomatic at each follow-up time point than the older children. Importantly, over 25% of the older children and roughly 20% of the younger children remained symptomatic 4 weeks post-injury.

Editor's Comments: This was an emergency department (ED) based study, which could affect generalizability to urgent care (UC) settings. Recovery was assessed based on a parental assessment in younger children, which may have affected the ability to compare between age groups. Since this study, there have been further advances in concussion-based assessments with the Child-Sport Concussion Assessment Tool 6 (SCAT-6) being developed and introduced. This was a large study of young children with strong indicators that mechanism of injury plays less of a role in recovery than other factors, including age, with younger children tending to recover more quickly after concussion. ■

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Do Virtual Scribes Improve Clinician Productivity?

Take Home Point: Virtual scribes may reduce time clinicians spend interfacing with the electronic health records (EHR).

Citation: Rotenstein L, Melnick E, Iannaccone C, et. al. Virtual Scribes and Physician Time Spent on Electronic Health Records. *JAMA Netw Open*. 2024 May 1;7(5): e2413140. doi: 10.1001/jamanetworkopen.2024.13140.

Relevance: Many clinicians cite time spent interacting with the EHR as a significant contributor to burnout. With advances in video and high-speed connection capabilities, remote (ie, virtual) scribes have been implemented in various clinical settings in an attempt to offload the burden of documentation from clinicians. The advantages of virtual scribes over in-person scribes largely are associated with lower labor costs and greater flexibility.

Study Summary: This was a retrospective quality improvement study of 144 physicians in the outpatient settings associated with Brigham and Women's Hospital and Massachusetts General Hospital. The authors included physicians who had used a virtual scribe for a 3-month period and reviewed their time spent using the EHR before and after scribe implementation. Outcome measures included the total time per appointment and time on notes per appointment. They also reviewed time that the physicians spent outside of normal working hours on EHR related work.

Sixty percent of physicians included worked in a primary care specialty. Most physicians (88%) used an asynchronous scribe. Virtual scribe use was associated with significant decreases in total EHR time per appointment (mean [SD] of 5.6 [16.4] minutes per visit; P < .001) in 3 months after versus 3 months before scribe use. These associations were seen with the use of virtual scribes among primary care and medical specialists. Physician factors associated with significant reductions in EHR time included practicing a medical subspecialty, high baseline interaction with the EHR, and a greater percentage of the clinic note contributed to by the physician.

Editor's Comments: It is unclear to what extent these results are generalizable to the UC setting. These participants were all physicians working in an academic medical center. The majority of the UC centers in the U.S. are not affiliated with university hospitals and are staffed with advanced practice clinicians (ie, PAs and NPs) rather than physicians. Given the high patient volumes in UC centers, however, a similar study in a UC setting would be valuable to see if similar increases in productivity are achieved. Additionally, studies examining the economic and clinician satisfaction implications of virtual scribe implementation would also provide important information about the feasibility and value of this sort of clinician support. ■

Soft vs Rigid Collars for Pre-Hospital Cervical Spine Immobilization

Take Home Point: The use of soft collars in pre-hospital immobilization of neck injuries improved patient compliance and was better tolerated without any increase in the risk of significant cervical spinal (c-spine) injury.

Citation: Bruton L, Nichols M, Looi S, et. al. Evaluating soft collars in pre-hospital cervical spine immobilisation: A cohort study on neurological outcomes, patient comfort and paramedic perspectives. *Emergency Medicine Australasia* (2024) 36, 862–867 doi: 10.1111/1742-6723.14464

Relevance: C-spine immobilization has long been emphasized as a critical aspect of the care of patients after trauma where there is risk for spinal cord injury (SCI). Rigid c-collars offer the theoretical advantage of less potential for movement in unstable c-spine injuries; however, these injuries are infrequently seen in UC settings and rigid c-collars are poorly tolerated by patients.

Study Summary: This was a pre-hospital observational cohort study conducted across a catchment area for 11 emergency departments (ED) (including 3 major trauma centers) in Australia. The ambulances servicing this region were stocked with soft collars to replace the rigid c-collars previously. Paramedics performed the SPEED (SPinal Emergency Evaluation of Deficits) neurological assessment on patients with suspected neck injuries to ascertain the requirements for immobilization. For patients whose screening SPEED exam was suggestive of possible neck injury, the paramedics placed the patient into a soft collar. Patients were excluded if they were agitated or had a body habitus precluding proper fit of the soft collar. The primary outcome was development of a new or worsened neurological deficit following pre-hospital soft collar application. A total of 2,098 soft collars were applied during the study period and 76 patients (3.6%) were subsequently identified to have had a c-spine injury. Just 8 patients (0.4%) were identified to have a SCI, while 26 patients (1.2%) had a c-spine fracture, and 40 patients (1.9%) had ligamentous disruption. Two patients with SCI experienced a worsening neurological deficit, representing 0.095% of the total soft-collar applications. Both patients had pre-existing conditions which complicated initial neurological (SPEED) assessment.

Editor's Comments: This study lacked a control group (ie, rigid c-collar use), which prevents comparison of outcomes compared to current standards of care. The results of this study reiterate the relative rarity of c-spine injury, and even more so SCI, and in a much higher acuity cohort than would be expected to present to UC. This study highlights the need for UC-based studies that can inform best practices for patients with neck pain after minor trauma. Patients with unstable c-spine injuries presenting to UC is likely quite rare, and the issue has not been specifically investigated. Until such studies or guidelines exist, it remains prudent to treat patients according to existing standards of care when there is concern for c-spine injury.

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Using Electronic Triggers to Identify Diagnostic Errors

Take Home Point: In this study, rules-based electronic triggers (e-triggers) proved effective for detecting diagnostic errors in an ED setting.

Citation: Vaghani V, Gupta A, Mir U, et. al. Implementation of Electronic Triggers to Identify Diagnostic Errors in Emergency Departments. *JAMA Intern Med.* 2024 Dec 2: e246214. doi: 10.1001/jamainternmed.2024.6214.

Relevance: Diagnostic errors remain a leading cause of iatrogenesis. This study aimed to determine if EHR-based alerts could mitigate diagnostic errors by alerting clinicians.

Study Summary: This was a retrospective medical record review study conducted in more than 1,300 EDs of the Veterans Affairs (VA) healthcare facilities throughout the US. The authors analyzed the records of all patients presenting to the EDs included. The authors developed and refined a rules-based e-trigger algorithm to identify patterns of presentation suggestive of missed diagnosis opportunities retrospectively. They developed high-risk triggers for potential stroke, high-risk abdominal pain, and unexpected returns visits—ED and hospital—after being seen in the ED within the 10 days prior. Additionally, an e-trigger was created for concerning symptoms-disease dyads (eg, those representing possible myocardial infarction/pulmonary edema in patients with chest pain, acute appendicitis/perforated diverticulitis in patients with abdominal pain etc.) and for those returning with a diagnosis of subarachnoid hemorrhage/meningitis after presenting with headache/dizziness symptoms. Finally, an e-trigger was created for patients with abnormal test results that were not acted upon during an initial ED visit.

The e-triggers were used to analyze all discharged ED patient records during the study period. The authors found that the application of the e-triggers identified over 130,000 cases of possible missed diagnoses. The positive predictive values (PPV) of a positive e-trigger ranged from 11.0% (ED return) to 52.4% (missed test result). The PPV for stroke was 47%. Patients with missed diagnoses were slightly older on average, and 40% of patients with a missed diagnosis experienced moderate or severe harm.

Editor's Comments: This was a VA health system-based study, and nearly 90% of the included patients were men, which would affect generalizability. Additionally, this was a retrospective study, so while the e-triggers may have helped to identify cases of adverse outcomes, it is unclear if the triggers implemented prospectively would prevent diagnostic errors or patient harm. Such prospective studies would be helpful to determine feasibility and clinician acceptance of such triggers and to determine if their use actually has an impact on patient-oriented outcomes in real-world practice. ■

Should Our Antibiotic Strategy for Otitis Media Change When There is Discharge?

Take Home Point: In this small pediatric study, oral antibiotics were more effective for reducing the duration of ear discharge and hastening the resolution symptoms in children with discharging acute otitis media (AOMd).

Citation: Hullegie S, Damoiseaux R, Hay A, et. al. Topical or oral antibiotics in childhood acute otitis media and ear discharge: a randomized controlled non-inferiority trial. *Fam Pract.* 2024 Oct 8;41(5):857-861. doi: 10.1093/fampra/cmae034.

Relevance: Children with AOM can experience tympanic membrane (TM) rupture which presents as discharge (ie, otorrhea) from the ear canal. Previous work has shown efficacy of otic/topical antibiotics for patients with tympanostomy tubes (TT) and otorrhea, but there have not been studies evaluating whether otic antibiotic drops are efficacious in children with TM rupture as a cause for continuity between the middle ear and canal.

Study Summary: This was an open label, randomized controlled, non-inferiority trial conducted in 52 primary care practices in the Netherlands. Consecutive children aged 6 months to 12 years presenting with AOMd in 1 or both ears were enrolled and randomized to receiving either oral antibiotics (amoxicillin) or antibiotic-corticosteroid combination ear drops for 7 days. The primary outcome was the resolution of symptoms (ear pain and fever) at day 3. The authors enrolled only 58 of a planned 350 children due to COVID-19 related disruptions in recruitment. Of those, 27 children were treated with ear drops, and 31 were treated with oral antibiotics. The median age of participants was 28 months; 40% of all participants were <2 years old. Data showed 42% of children receiving ear drops

were free from ear pain and fever at day 3 vs 65% of children receiving oral antibiotics (adjusted absolute risk difference 20.3%, 95% CI −5.3-41.9%). This did not reach statistical significance for non-inferiority of drops versus oral antibiotics. For other outcomes, the authors found that 58% of children assigned to eardrops had parent-reported ear discharge at day 3 vs 19% of those assigned to oral antibiotics (P < .05). The mean time to resolution of symptoms was 5 days (SD 2.8) in the eardrops group vs 4 days (SD 2.2) in the oral antibiotics group (P = .04). The mean ear pain score over the first 3 days of treatment was 2.1 in the otic antibiotic group and 1.4 in the oral antibiotic group (P = 0.02). Also, 26% of parents reported discomfort with administration of the otic antibiotic versus 19% with administration of oral amoxicillin.

Editor's Comments: While the study was underpowered to determine non-inferiority of otic drops due to early termination of enrollment during the COVID-19 pandemic, secondary outcomes favored treatment with oral antibiotics for several clinically relevant outcomes, time to resolution of pain and discharge namely. These results differ from previous studies which have shown that topical ear drops are more effective for patients with TT. The plausibility of this difference is questionable, and therefore, despite the undertaking of this well-designed study, further study with a similar design is warranted before the question can be adequately answered. In the meantime, UC clinicians and patients are likely best served by continuing to adhere to present guidelines in patients with AOMd without TT. This also may be a situation where shared decision making with parents is appropriate. For example, in patients with very poor tolerance for either otic or oral antibiotics, it may be most reasonable to choose the route of administration best tolerated for children with AOMd until there is more conclusive data. ■

Do Patients Understand Our Discharge Instructions?

Take Home Point: Standardized discharge instructions improve patient's understanding, especially regarding guidance about reasons to return and expected duration of illness.

Citation: Russell S, Jacobson N, Pavlic A. Improving Patient Understanding of Emergency Department Discharge Instructions. *Western Journal of Emergency Medicine* .2024 Vol 25;6:917-20 doi 10.5811/westjem.18579

Relevance: Discharge instructions are a vital communication tool which can ensure patients best understand and manage their conditions after leaving UC. Therefore, it is important to understand how these instructions are perceived by patients and clarify areas needing improvement.

Study Summary: This was a pilot interview-based study among patients discharged from an urban VA health system ED in Wisconsin. Patients received either free-text discharge instructions at the discretion of the treating clinician or standardized discharge instructions developed by the research team specific to their condition. The ED clinicians were a convenience sample composed of 10 physicians and 2 advanced practice practioners in the pre-intervention group and 3 physicians and 2 APCs in the standardized discharge instruction group. The patients were approached for a short interview by study staff, and clinicians and nurses working in the ED. During the interview, patients were asked to state their diagnosis, understanding of any new medications prescribed at the visit, recommendations for home care, expected duration of illness, reasons to return to the ED, and follow up plan. The patients were permitted to reference the discharge instructions to answer the interviewer questions. Both group's responses were collected and marked as incorrect (0), partially correct (0.5), or correct (1).

The authors interviewed 45 patients: 25 control (ie, free text instructions) and 20 intervention (ie, standardized instructions). They found that patients who received the standardized instructions had a statistically significant better understanding of the instructions given regarding the duration of expected illness and return precautions (P<0.05). There were no statistically significant differences in understanding with regards to accurately knowing the discharge diagnosis, new medications prescribed, home care instructions, or follow-up.

Editor's Comments: The small sample of this pilot study resulted in limited ability to detect small differences between groups. The use of a convenience sample also limits ability to determine if these results would hold true across a randomized group of clinicians. Additionally, the inter-rater reliability of interview scoring was not assessed, which is typically standard practice with subjectively measured data. Given the importance of patient understanding of their diagnosis, home care, and follow-up instructions, this study does provide some evidence that standardized instructions, if read by patients, can offer certain advantages. A more practical question that the study did not address is proactive patient engagement with discharge instructions. ■

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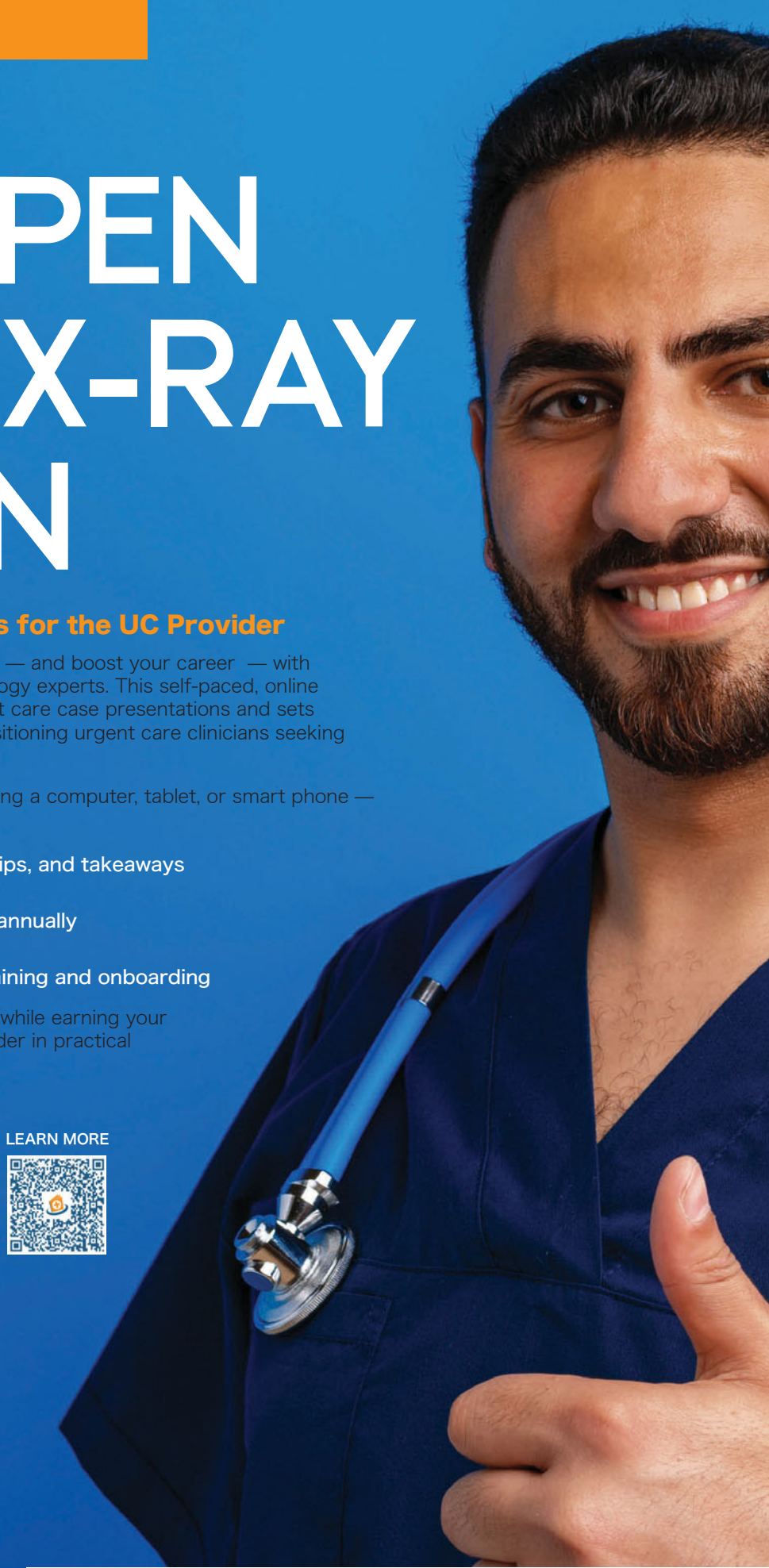

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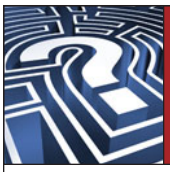
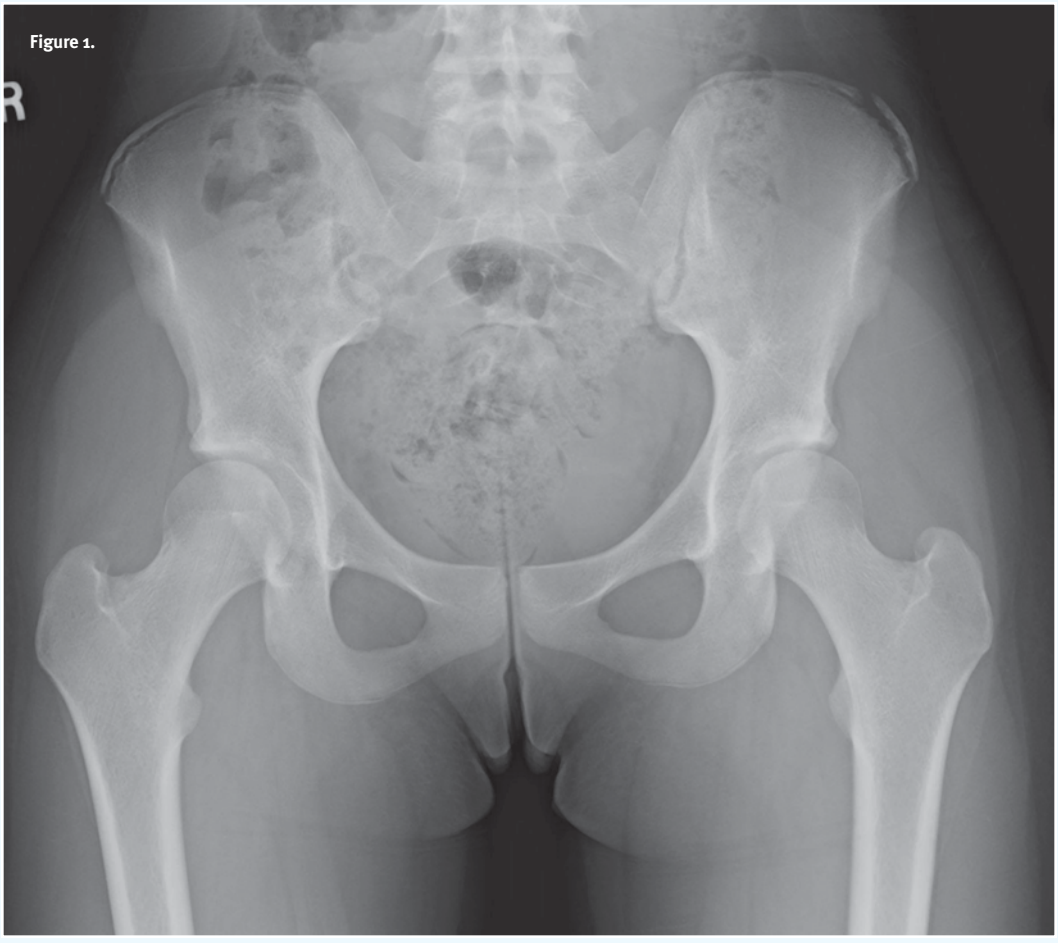


CLINICAL CHALLENGE: CASE 1

Challenge your diagnostic acumen: Study the following x-rays, electrocardiograms, and photographs and consider what your diagnosis might be in each case. While the images presented here are authentic, the patient cases are hypothetical. Readers are welcome to offer their own patient cases and images for consideration by contacting the editors at editor@jucm.com.

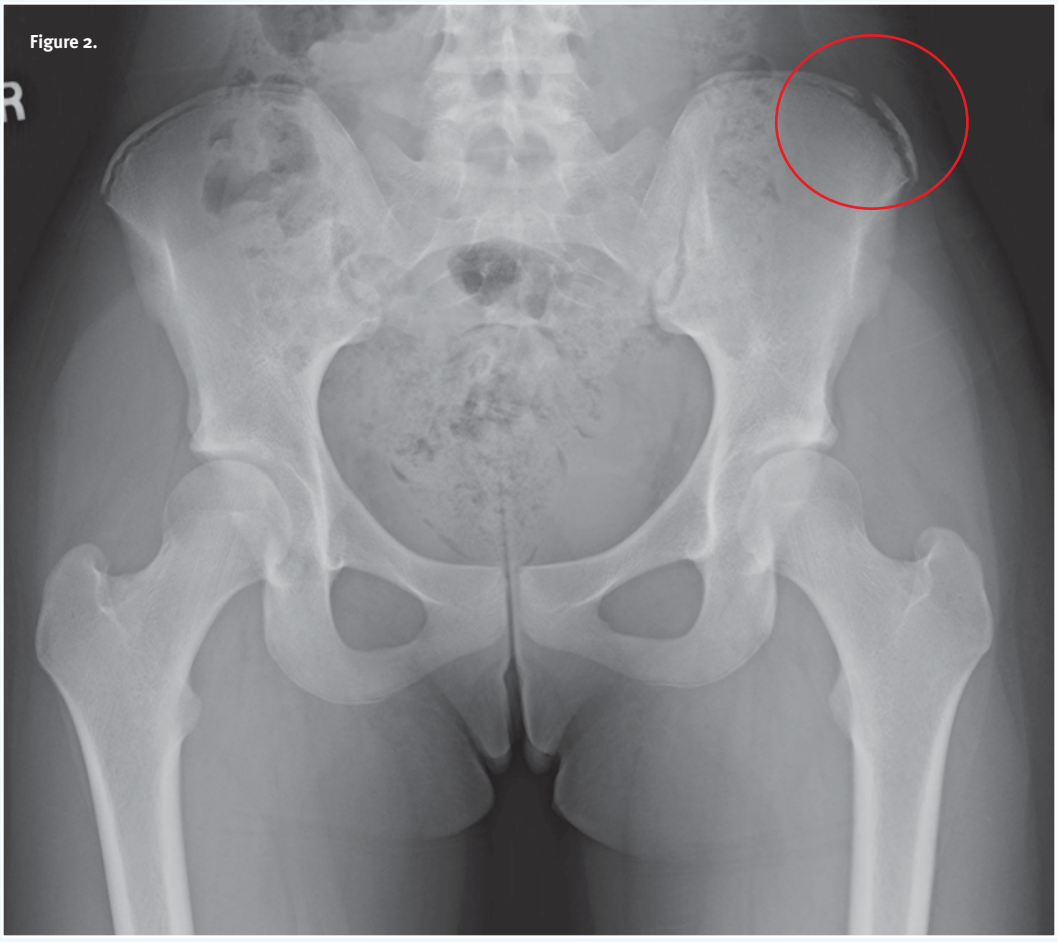
16-Year-Old With Hip Pain



A 16-year-old female presents to urgent care with her mother after soccer practice at school. She says she felt a "pop" in her left hip, immediately followed by posterior hip pain. Walking makes it worse, but resting makes the pain better. An x-ray is ordered.

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

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



Differential Diagnosis

- Avulsion fracture of the left iliac crest apophysis
- Sacroiliitis
- Labral tear

Diagnosis

This is a classic case of an avulsion fracture of the left iliac crest apophysis, as the x-ray shows a widening of the left iliac crest apophysis. Apophyseal cartilage is a weak point, and avulsion fractures at this site are caused by forceful contraction of the abdominal wall muscles usually while sprinting or jumping. The most common avulsion sites are the anterior superior iliac spine and the anterior inferior iliac spine.

What to Look For

- While an uncommon injury, most often occurs in young adolescent athletes
- Acute pain and tenderness will likely be present over the iliac crest
- Some with this injury may be unable to bear weight
- X-ray can help with the diagnosis, but in younger patients, the apophysis may still be radiolucent, making diagnosis more difficult

Pearls for Urgent Care Management

- Limit weight bearing if painful
- Limit flexion and rotational movement of the trunk
- Pain management includes ice and over-the-counter pain medications
- If significant displacement occurs, surgical intervention may be required

65-Year-Old With Finger Growth

Figure 1.

A 65-year-old woman presents to urgent care complaining of a growth that developed on her finger 2 months prior. She says it's not painful or itchy and has not grown since she first noticed it. On examination, a solitary, smooth, pinkish papule with a tiny central crust is seen on her distal interphalangeal joint on her left index finger. The patient has a history of osteoarthritis.

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

Acknowledgment: Image and case presented by VisualDx (www.VisualDx.com/jucm).

Figure 2.

Differential Diagnosis

- Epidermoid cyst
- Ganglion cyst
- Glomus tumor
- Myxoid cyst

Diagnosis

The correct diagnosis in this case is a myxoid cyst—also known as a digital mucous cyst or pseudocyst. This is a ganglion cyst found on the distal interphalangeal joint of the finger or thumb, or less commonly, the toe. The cysts are believed to form from degeneration of connective tissue and often are associated with osteoarthritic joints. Skin biopsy histopathology will show a well-circumscribed superficial collection of dermal mucin without a true cyst lining. The overlying epidermis will be atrophic, hyperplastic or hyperkeratotic with a variable increase in fibroblasts and absent fibrous wall.

What to Look For

- Myxoid cysts are more prevalent in women between the ages of 40 and 70 years.
- They are typically 3-10 mm in size, most commonly affect the second and third digits.
- While most are solitary, cysts may possibly appear in multiples.
- They are not painful or itchy.

Pearls for Urgent Care Management

- Myxoid cysts are benign, so no treatment is indicated
- If myxoid cysts become unsightly, cumbersome or painful, treatment is surgical excision

CLINICAL CHALLENGE: CASE 3

74-Year-Old With Lightheadedness

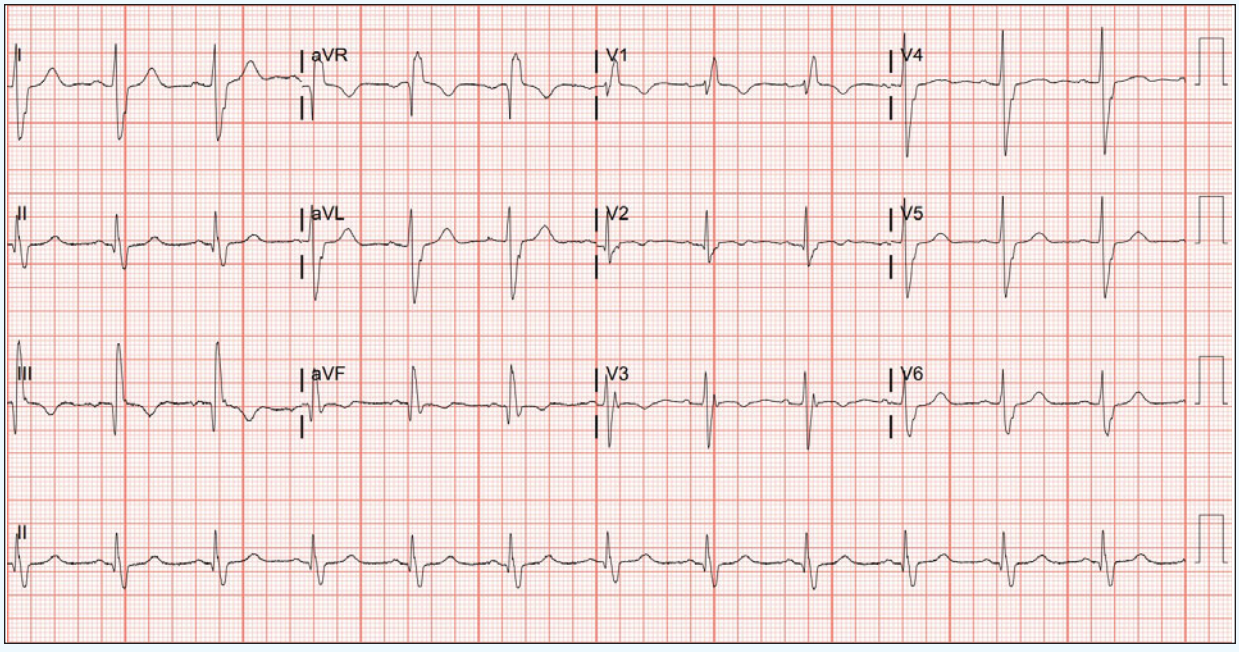


Figure 1: Initial ECG

A 74-year-old woman presents to urgent care with epistaxis, controlled on arrival. She is also complaining of lightheadedness and fatigue that's been going on for the past 2 weeks.

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

Case presented by Adam M. Woods, MD, PGY3, Chief Resident, The University of Texas Health Science Center at Houston.

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

ECG STAMPEDE

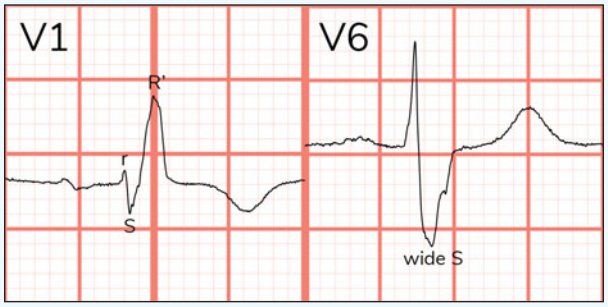


Figure 2: RBBB showing rSR' in V1 and wide S-wave in V6

Differential Diagnosis

- Ventricular ectopy/pacing/pre-excitation
- Acute/chronic lung disease
- Bifascicular block
- Hyperkalemia

Diagnosis

Bifascicular block (right bundle branch block + left posterior fascicular block) is the correct diagnosis in this case. The patient's ECG shows a normal sinus rhythm with a rate of 72 beats per minute. There is rightward axis deviation (QRS is positive in lead aVF and negative in lead I) with normal PR and QT intervals and a widened QRS (>120msec). There is no evidence of acute ischemia.

When investigating the etiology of the widened QRS, note the rSR' in the anterior precordial leads (V1, V2) and deep S-wave in the lateral leads (I, V5, V6). These findings suggest the presence of a right bundle branch block (RBBB) (**Figure 2**). A RBBB, however, is not expected to alter the axis. Causes of right axis deviation include: 1) lateral MI; 2) ventricular ectopy; 3) pre-excitation; 4) hyperkalemia; 5) acute or chronic lung disease; and 6) left posterior fascicular block. In this ECG, lack of findings to corroborate the other etiologies points toward another source of conduction disease—left posterior fascicular block.[1]

Normal conduction travels through the atrioventricular node, into the common bundle, and then divides into the left and right bundles. The left bundle is subdivided into anterior and posterior fascicles. Disruption of both fascicles produces a left bundle branch block (LBBB), but it is possible for a single fascicle to fail. A "bifascicular block" occurs when conduction fails in 2 out of 3 fascicles (RBBB + either LAFB or LPFB). Ventricular conduction is then reliant on the single remnant fascicle.

Left anterior fascicular blocks (LAFB) lead to leftward axis deviation while left posterior fascicular blocks (LPFB) lead to rightward/downward depolarization and subsequent right axis deviation.[2]

Our patient's ECG suggests bifascicular disease: Right bundle branch block (ie, RSR' in V1 and deep S-wave in I, V6) and a left posterior fascicular block (ie, right axis deviation, rS in leads I and aVL, qR in leads II, III, and aVF). It is important to note that while a left bundle branch block involves two fascicles, the term "bifascicular block" is reserved for the combination of a RBBB + either LAFB or LPFB.[1]

The significance of a bifascicular block depends on the clinical context. If this is an incidental finding, it is appropriate for outpatient follow up. These diseased conduction pathways are often due to underlying structural heart disease. Patients with ECG evidence of conduction disease should be viewed with a low threshold for evaluation or transfer. ECG evidence of a bifascicular block and history of syncope or palpitations is concerning for progression to intermittent complete heart block.[3]

The patient was ultimately discharged home with nasal saline for epistaxis and PCP/cardiology follow-up. No further emergent workup was indicated due to the lack of high-risk symptoms.

What to Look For

- The combination of a right bundle branch block with axis deviation suggests the presence of a concomitant fascicular block (either left anterior or posterior fascicular block).
- To diagnose a left posterior fascicular block, look for right axis deviation unexplained by an alternative diagnosis

Pearls for Management, Considerations for Transfer

- Incidental bifascicular blocks call for no further evaluation or therapy.
- Symptomatic patients (chest pain, syncope, palpitations) should be transferred for further workup and monitoring.

References

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2. Cooper B, Giordano J, Fadial T, Reynolds C. *ECG Stampede: Workbook*. 1st ed. Null Publishing Group; 2024.
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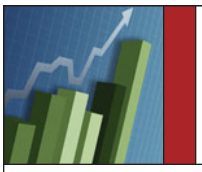

DEVELOPING DATA

Retail Clinic Rooftops Retreat from 2023 Peak

■ Alan A. Ayers, MBA, MAcc

RETAIL CLINIC ROOFTOPS

Rank	Retail Host	Clinic Count	Percent of Total
1	CVS Health	875	63.9%
2	Kroger Company	220	16.1%
3	Walgreen Company	162	11.8%
4	Target Corporation	35	2.6%
5	Hy-Vee, Inc.	23	1.7%
6	Meijer, Inc	12	0.9%
7	Fruth Pharmacy	7	0.5%
8	Albertsons Companies	7	0.5%
9	Walmart Stores, Inc.	5	0.4%
10	Publix Supermarkets	4	0.3%
Unclassified			
	Independent Pharmacies	11	0.8%
	Regional Grocery Chains	9	0.7%
Total		**1,370**	**100.0%**

Data as of December 13, 2024. Sources: National UC Realty, Respective retailer websites accessed 12/13/2024.

Between May 2023 and December 2024, the number of retail-host clinics in the United States fell 21.7% from 1,750 to 1,370, according to data from National UC Realty.[1] Not only did CVS, Walgreens, and Walmart announce significant clinic closures in 2024, there has been little to no growth among the remaining retail clinic operators.

The top 5 retail hosts make up 95% of in-store clinics nationally and only 2% of total clinics are in independent pharmacies and regional supermarket chains. Of the retail hosts, total penetration is only 4.3% of their total store counts, indicating in-store clinics failed to penetrate even their own footprints. Take out the 2 largest—CVS and Kroger—and penetration falls below 1%.

Although 18% of all in-store clinics have a hospital or health system affiliation, taking out the 2 largest makes the percentage with a hospital affiliation jump to 92%. For example, all 35 Target Clinics in California are operated by Kaiser Permanente. Walgreens has partnered with 12 different health systems for its remaining 162 sites. After closing over 50 of its own Walmart Health locations in 2024, the 5 remaining clinics in Walmart are all affiliated with health systems. Likewise, Hy-Vee, Meijer, Fruth and Publix all operate in affiliation with health systems. ■

Alan A. Ayers, MBA, MAcc is President of Urgent Care Consultants and Senior Editor of *The Journal of Urgent Care Medicine.*

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