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URGENT CARE ASSOCIATION

COLLEGE OF URGENT CARE MEDICINE

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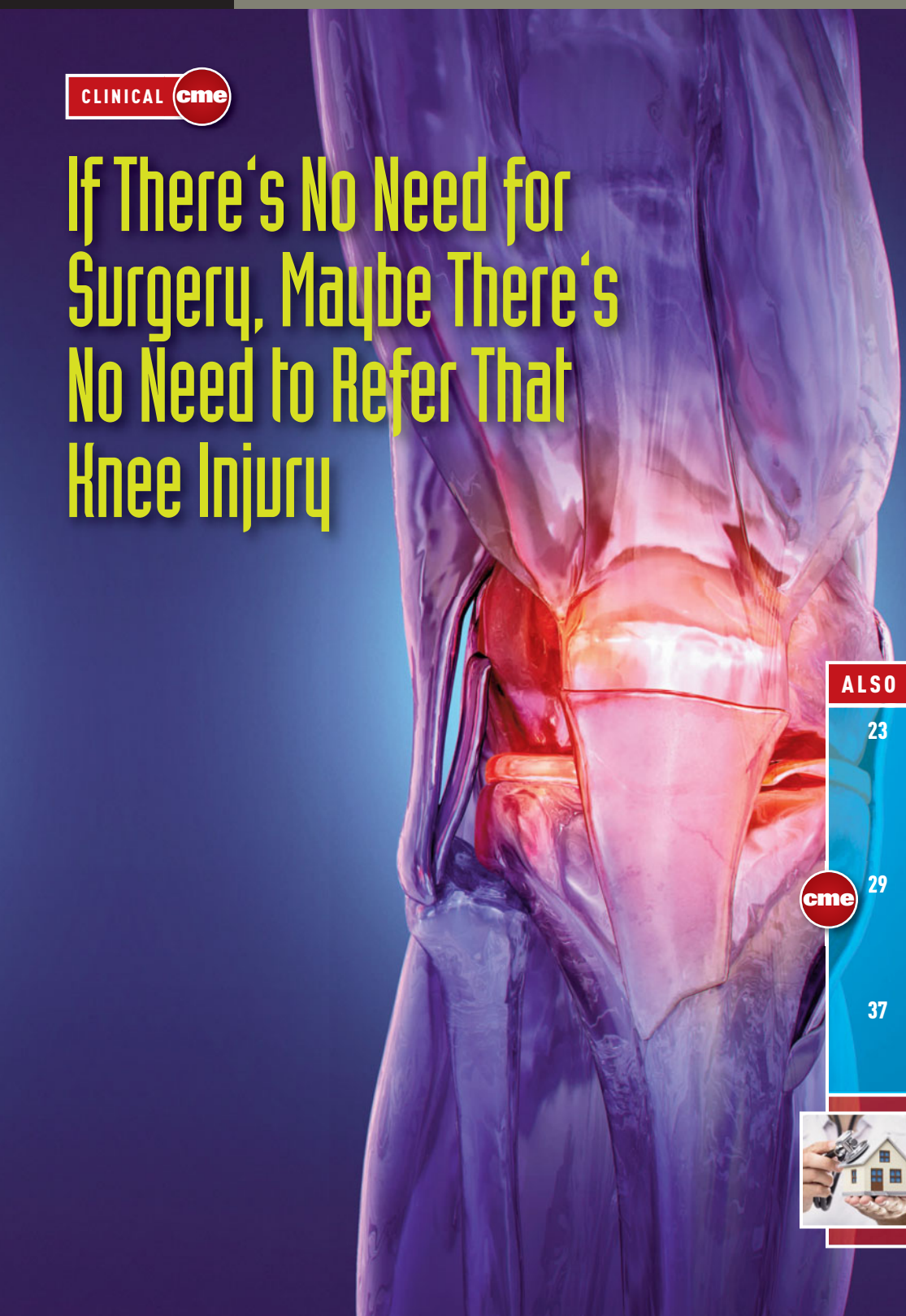
The Official Publication of the UCA and CUCM

CLINICAL cme

If There's No Need for Surgery, Maybe There's No Need to Refer That Knee Injury



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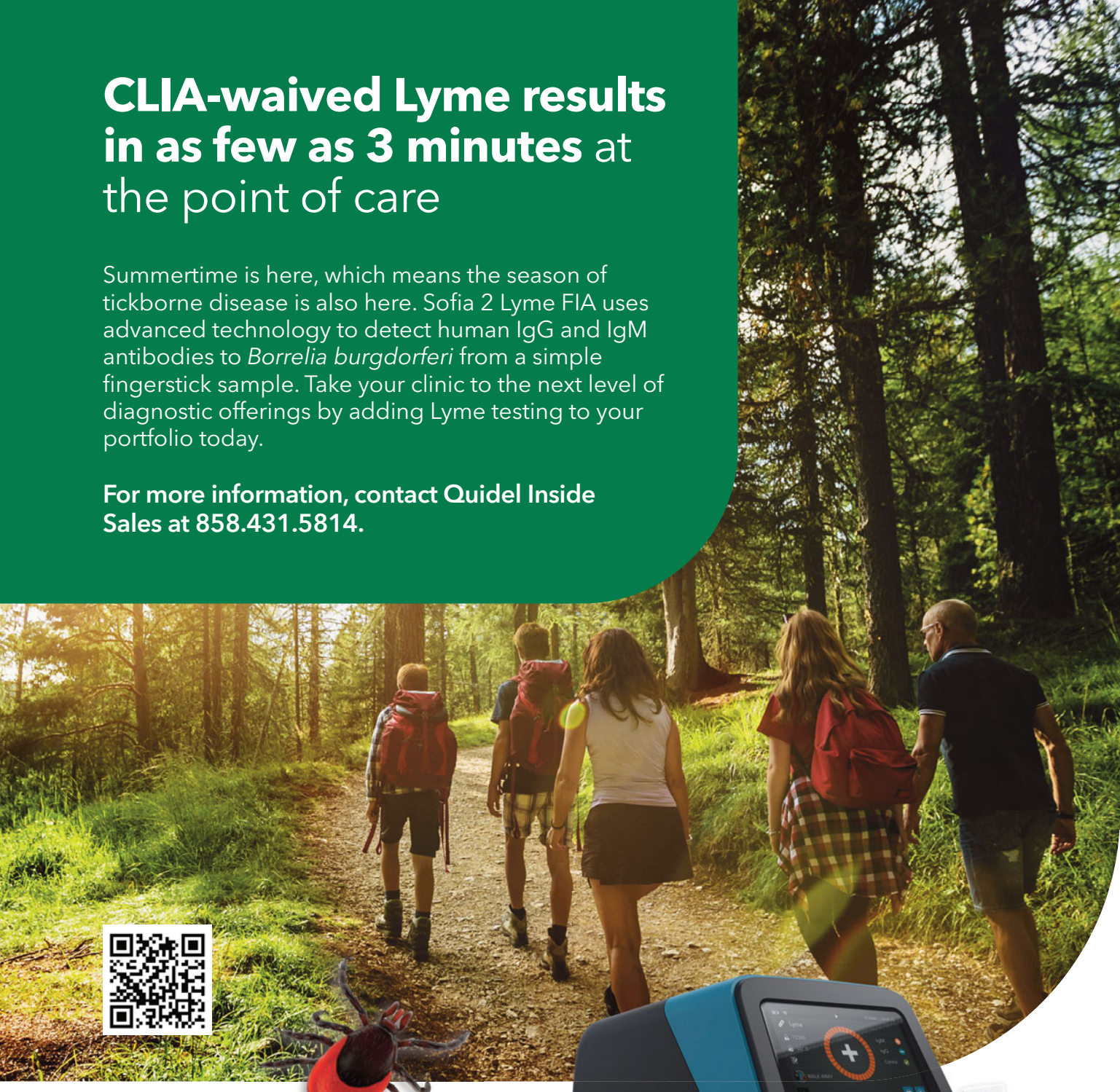

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LETTER FROM THE EDITOR-IN-CHIEF

Addressing Without Managing: Defusing the Ticking Time Bombs in Urgent Care

In the world of urgent care, it's assumed that we exist to provide immediate, episodic care for discrete problems. The sore throat, sprained ankle, and laceration are our bread and butter. However, we do not practice in a vacuum. We share patients with other clinicians who longitudinally follow and manage their multiple comorbidities.

Additionally, for the growing number of patients *without* a primary care provider, we commonly serve as the sole point of contact with the healthcare system and, therefore, offer the *only* opportunity to identify undiagnosed and potentially dangerous behaviors and conditions.

While UC practice is certainly fast-paced and problem-focused, as clinicians we still have a duty to address the issues that will lead to poor health outcomes when they come to our attention, even if they aren't the "reason for the visit" that day.

Some of us may have a visceral reaction to this notion. Practicing in UC is, after all, a choice we've made, often because managing chronic health problems holds little allure. That's certainly true for me. But hear me out. I am not advocating that we *manage* these conditions, but rather that we *address* them when noticed rather than turning a blind eye and moving on to our next patient.

This isn't as challenging as it may sound at first.

The difference between *managing* and *addressing* is significant. *Managing* implies that we are evaluating the accuracy of a diagnosis and devising an individualized treatment plan. *Addressing*, on the other hand, simply means that if we become aware of concerning signs, symptoms, and/or health behaviors, we don't ignore them. *Addressing* involves informing the patient of our concerns over potential health consequences of the issues identified, and recommending any appropriate next steps after the UC visit.

Managing is much more involved. It's akin to responding to a spill in the milk aisle. I'm not suggesting we should be cleaning it up ourselves, but it is civically remiss to pass by

and continue shopping as if the gallon-sized puddle didn't exist when it would take little effort to alert a nearby employee of the hazard.

We have the same duty when we see a looming threat in an unsuspecting patient. We don't need to find the mop and bucket ourselves, but it's easy to make a potentially significant difference for our patient by calling out the danger we see before a predictable bad outcome unfolds.

Let's examine a few common examples of impending threats that we might notice in an average UC shift.

Elevated Blood Pressure Readings

Taking complete vitals for each patient is standard practice in nearly every UC. Therefore, elevated BP readings will occur multiple times per shift (and if this isn't the case, you better check your BP cuff). This is almost always incidental to the patient's chief complaint. So, then, the question becomes what do we do with this incidentally out-of-range data?

Imagine a case of a 55-year-old man who presents for a laceration to his forearm while remodeling his bathroom. He's not anxious or in obvious pain. His blood pressure is 172/99. You recheck it and it's unchanged. He hasn't seen a doctor in 5 years because he's "healthy." He states he "feels fine" and isn't really too concerned about the reading.

"As poor outcomes will take years to manifest, to find meaning in addressing these risks we must strive to find ways to convince ourselves that these interventions matter."

This patient almost certainly has hypertension (although a repeat measurement will be required on another day to confirm this). But because he "feels fine," his BP is of little concern; he reiterates with a bit of annoyance that he's "just here for the stitches." We as healthcare providers, however, know better. There's a reason hypertension is known as the "silent killer." If it's left untreated, this patient will be at a significantly increased risk of stroke, kidney disease, and MI in the coming years.

Furthermore, based on this patient's history of seeking medical care, it's unlikely he will be seen by a healthcare provider again anytime soon. Therefore, in cases like this, spending a few minutes educating the patient about the perils of untreated hypertension and urging him to find a PCP could be lifesaving, even if hearing about it isn't on his agenda for the visit.

Conversely, ignoring this patient's elevated BP puts both the patient and you at significant risk. The patient is obviously at increased risk of long-term poor outcomes. However, perhaps less apparent is the risk that you assume as the provider in this case if you fail to *address* this (especially because his BP quite likely may not be checked again until he's in the ED for a stroke). There is abundant legal precedent upholding our duty as clinicians to *address* abnormal incidental findings, including elevated BP readings, even if unrelated to the reason for the patient's visit.

Poorly Controlled Diabetes

Next, consider a 44-year-old obese woman with type 2 diabetes presenting with dysuria and frequency. Her urine dip is negative except for 3+ glucose, 2+ protein. She reports that she "always takes her diabetes medication" when you mention the glucose in the urine.

For many of us, it may be tempting to stop here. But, it would be short-sighted to inform the patient that she does not have a UTI and discharge her without saying something more when her urine dip suggests uncontrolled hyperglycemia and end-organ dysfunction.

Imagine instead you ask a few more questions and discover her diabetes was diagnosed 4 years ago and she was started on metformin 500 mg twice daily. She has gained 60 pounds in the interim. She never checks her blood sugar and has never had a retinal exam, foot exam, or A1c performed since diagnosis. You ask your medical assistant for a quick fingerstick glucose and find her blood sugar is 280 mg/dL.

This patient requires education and follow-up for routine diabetic care before the predictable and irreversible negative consequences of prolonged hyperglycemia appear. Explaining the high likelihood of vision loss, neuropathy, vascular complications, and amputation if her diabetes remains poorly controlled can make a huge impact on this woman's lifetime morbidity from the disease.

Furthermore, it is worthwhile to take a few more minutes to explore the patient's attempts at weight loss and dietary practices around sugar and other refined carbohydrates. Failing to address the importance of proper diet on diabetes implicitly provides a message that her condition is out of her control and that her diet is irrelevant, which obviously couldn't be further from the truth.

Smoking

Let's look a one more very common UC scenario. A 38-year-old man presents with cold symptoms, including cough, for 3 weeks and frustration because he's not getting better. He has a normal chest x-ray and oxygen saturation. You diagnose him with bronchitis and appropriately and courteously decline his request for antibiotics. Well done. But there's always a bit more going on. As you sit across from him, you can't help but notice the uncanny and pungent smell of cigarette smoke permeating the exam room.

At this point you have two options: a cynical (and hopefully internal) roll of the eyes *or* taking a moment to address his tobacco use head on. In this case, this is not only a chronic health concern, but also immediately relevant to his complaint: a lingering cough. In very little time at all it can be explained that, while the antibiotics he came seeking will not speed his recovery, cutting down on cigarettes will. Explaining the effects of tobacco on respiratory cilia function and clearing mucus, for example, offers a perfect opportunity to counsel smokers about the importance of quitting. Finding a path to relevance and relatedness to the reason for the visit creates a teachable moment.

It's easy to feel defeatist around counseling for tobacco cessation because it is one of the hardest habits to kick. A number of studies on the subject, however, have shown that hearing a message to quit from a clinician is among the most potent sources of motivation to quit. And while the patient is often not enthusiastic to receive the message in the moment, it's impossible to predict which of these seeds prompting further reflection will bear fruit, and when.

A Word on Charting

Of course, charting that you addressed the identified issues with the patient is critical for closing the loop on the intervention. Thankfully, the common issues that we stumble across as we see patients in UC are relatively few in number: bike helmet use, overdue health maintenance, weight loss, safer sex prac-

tices, and reducing alcohol and tobacco. Most EMR systems now offer a macro or dot phrase function to allow for easy documentation of these frequent refrains with just a few keystrokes.

Adding these phrases will not only serve as medicolegal protection in demonstrating your holistic concern for the patient beyond their immediate presentation, but it will also serve to best capture the complexity of the care provided. After the significant 2021 overhaul in billing and coding for ambulatory care, this description of complexity through the enumeration of "problems addressed" has become one of three essential elements of the medical decision making (MDM) portion of our notes. And, in case you missed it, the MDM is now the sole portion of an UC clinician's chart used to determine the billing level of service.

At first glance, addressing issues which lack immediate relevance to patients' UC presentations seems like the antithesis of urgent care medicine. Most of us have chosen UC because we get our kicks by seeing immediate results from our efforts: stopping a nosebleed or reducing a nursemaid's elbow. We rarely witness the consequences of failing to address long-term risks. As poor outcomes will take years to manifest, to find meaning in addressing these risks we must strive to find ways to convince ourselves that these interventions matter. And, admittedly, it takes considerable and conscious effort to find reward in the best of all possible outcomes: the disaster that never happens.

Thankfully, the effort actually required to have these short conversations isn't much. Rather, the challenge lies in adopting a new mindset and altering our habitual approach. But, it's worth it because well-timed nudges are surprisingly potent. Changing a ship's heading by a few degrees as it leaves New York City can be the difference between arriving in Ireland and North Africa. Small nudges, moreover, multiplied across thousands of patients and many years offer the potential for a tremendous cumulative impact during our careers.

So, try mentioning the effects of uncontrolled diabetes on wound healing or smoking on immune function instead of making small talk the next time you find yourself suturing or waiting for a patient's chest x-ray to load. Your efforts may feel fruitless in the moment, but take solace that years in the future, someone will be glad you didn't overlook the ticking time bomb you happened upon that evening when all they had asked of you was for something to help with their cough. ■

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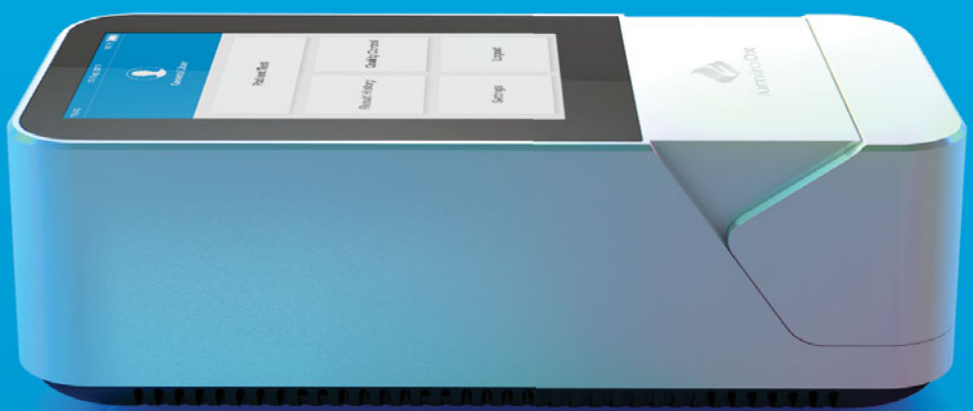

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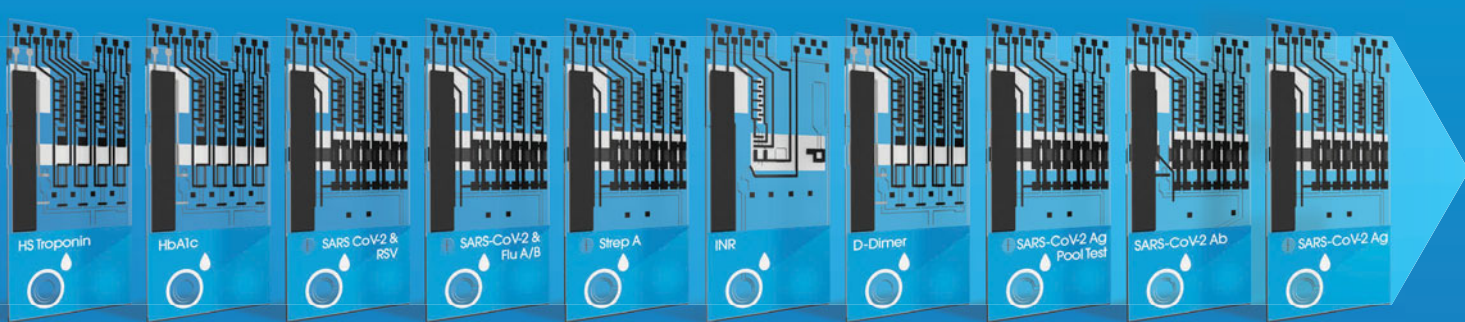

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CLINICAL

NEXT MONTH IN *JUCM*

Urgent care as an industry has done a great job of promoting itself as a safe, convenient, alternative to the emergency room for non-emergent complaints. The industry's steady growth is testament to that. And yet, there are still those who need convincing—including some payers, who could benefit immensely from the fact that cost-effectiveness is also a hallmark of the urgent care model. That's understandable to a point, considering the scarcity of data to support that claim. Times are changing, however, and the evidence is mounting. You'll have a chance to see some of it in an original research article in the July-August issue of *JUCM*.

DEPARTMENTS

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Mission Statement
JUCM The Journal of Urgent Care Medicine (ISSN 19380011) supports the evolution of urgent care medicine by creating content that addresses both the clinical practice of urgent care medicine and the practice management challenges of keeping pace with an ever-changing healthcare marketplace. As the Official Publication of the Urgent Care Association and the College of Urgent Care Medicine, *JUCM* seeks to provide a forum for the exchange of ideas regarding the clinical and business best-practices for running an urgent care center.

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(d) Research misconduct does not include honest error or differences of opinion.

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The presumed order of business for a patient who has a knee injury of undetermined severity might go something like this: 1) present to urgent care for initial assessment; 2) be referred to either an orthopedist or the emergency room; 3) undergo surgery, physical therapy, or both.

While that's certainly the right path if the patient does, in fact, require surgery, anything short of that should be a matter for consideration.

The overriding question, is does the patient need to be referred at all?

This is the crux of this month's cover article, Physical Therapy as Nonsurgical and Presurgical Management of Common Knee Pathologies (page 13), in which authors **Eva Delgado Martinez MBChB, GP, MScCN** and **Ivan Koay MBChB, FRNZCUC, MD** explain the importance of considering which knee injuries really *need* to be referred and which can heal sufficiently with physical therapy ordered in the urgent care center. Dr. Koay's name may look familiar to regular *JUCM* readers, as he serves as the editor of Abstracts in Urgent Care on a monthly basis.

Historically, the inclination may have been to refer all head injuries, regardless of severity, as well. But, again, advances in understanding (and technology) are calling that into question. In an article entitled Urgent Care Centers Can Reduce ED Referrals for CT Scans in Mild Head Injury with Integration of Brain Activity Biomarker (page 37), authors **Tanvir Dara MD, FACEP; Elizabeth McCarty MD; Paul Meredith MD; Robert Mooney MD; David Porzio MD;** and **Alvaro Zeballos MD** recount a study in which referrals to the ED were reduced when urgent care providers combined clinical judgement with EEG-based structural injury biomarker results.

Dr. Dara practices at WellNow Urgent Care in Buffalo, NY; Dr. McCarty at Mercy Urgent Care/Mercy Occupational Medicine in Asheville, NC; Dr. Meredith at HealthCARE Express in Texarkana, TX; Dr. Mooney at STAT MED Urgent Care in Concord, CA; Dr. Porzio at Marque Medical in Irvine, CA; and Dr. Zeballos at BetterMed Urgent Care, Richmond, VA.

Imaging is also a key factor in this issue's case report, the title of which asks the question, How Useful Is Ultrasound in Diagnosing Ovarian Torsion? (page 29). In it, **Andrew Alaya, MD, MSc** walks us through the case of a 39-year-old woman who presents with abdominal pain that on the surface could be attributed to any number of causes, from fairly benign to life-threatening.

Dr. Alaya, who has contributed to *JUCM* previously, practices at Bronovo Hospital, The Hague, Netherlands.

If your practice draws a fair number of younger patients (or certainly if you practice in a pediatric urgent care center), then you know just how often children present with possible elbow fractures. Assessing those injuries and treating those patients is a bit trickier than working with adults with the same possible injury, though. A good understanding of the pediatric elbow in relation to the patient's stage of development is essential to taking the right approach. Fail to understand this and you run the risk of failing your patient. Pediatric Elbow Fractures: A Clinical Review starts on page 23. The author, **Amy Grover, MD,** is senior instructor of pediatrics, Children's Hospital Colorado, Section of Emergency Medicine, Section of Hospital Medicine.

A savvy group of individuals who are not failing to understand the past performance and future prospects of our industry would be the venture capitalists investing in brick-and-mortar urgent care. They're doing so because they recognize signs for long-term growth. **Alan A. Ayers, MBA, MAcc**, who as president of Experity Networks and senior editor, practice management for *JUCM* knows a bit about growing an urgent care business, explains the grounds for their optimism in Why Private Equity and Other 'Smart Money' Is Bullish on Brick-and-Mortar Urgent Care (page 17).

As noted above, Dr. Ivan Koay is contributing doubly to this issue of *JUCM*. In addition to the article he coauthored on the potential benefits of directing physical therapy of the knee, he's summarized the most urgent care-relevant points of a wide range of articles published by medical journals recently. Turn to Abstracts in Urgent Care (page 33) to get updates on the unrealized value of urine dipstick testing, screening for intimate partner violence, the necessity—or not—of antibiotics for children with respiratory tract infection and pediatric viral infection, and more.

Finally, we thank **Monte Sandler**, executive vice president, revenue cycle management for Experity for explaining the dynamics of Decreasing Denials and Rejections Through Your Urgent Care Operating Model (page 50). It may come as no surprise that the best approach is to avoid them altogether—if you know how.

Becoming a JUCM Contributor

JUCM, The Journal Of Urgent Care Medicine, invites you to submit articles in support of our goal to provide practical, up-to-date clinical and practice-management information to our readers—U.S. urgent care clinicians and business professionals. Manuscripts submitted for publication in *JUCM* should provide either original research or practical advice, dealing with clinical and practice-management issues commonly encountered in the day-to-day practice of urgent care. For more information, visit https://jucm.scholasticahq.com/for-authors. ■

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LOU ELLEN HORWITZ, MA

It started on a Saturday afternoon with just a few people. They wandered in one by one, looking hopeful but a bit unsure if they were in the right place. Then there were a few more. Then a small group. Then a big group. Then a small flood, and then a *big* flood, and by Sunday afternoon we were absolutely covered up with people.

The 2022 Annual Convention had begun.

Those 5 days in Las Vegas where the urgent care "band" got back together were nothing short of magical. The word LOVE-FEST comes to mind, as well. Not only was it the largest group of urgent care people ever gathered in the history of our industry, but also the happiest. Never in my life have I experienced such fantastic energy over such an extended period—from the opening "come as you are" reception until the closing general session (which was also fantastic), everyone basked in the gift of each other's presence and shared knowledge and experience and celebrated new and old connections.

We aimed to elevate our convention education to a more advanced level—and your feedback tells us we hit that mark—so my hat is off to all of our session faculty and our planners for ensuring our courses went beyond the basics. As all of you become more and more sophisticated in your clinical and operational acumen, we will continue to work hard to stay ahead of you and keep you challenged.

There was also music and laughter and some serious dancing. Our opening keynote's violin solo brought some people—including me—to tears. And then he started speaking, and we were all riveted. We had general session panels on the past vs future of urgent care practice and the future of healthcare on our evolving planet, and gave everyone a lot to think about and look at when they got home. We took a 750+ person selfie, the Urgent Care Foundation raised over $285,000 , the Electric Slide was performed under the Vegas sky by more than one CEO, the Solutions Expo was a hotbed of activity, the NERUCA and CalUCA chapter lunches were standing-room only, and the College of Urgent Care Medicine had a blues band during their members meeting.

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

"Our maverick nature may be holding us back because our potential power is diffused rather than concentrated. What got us here *won't get us* there*."*

It was one for the record books and, speaking on behalf of all of the staff, we loved every minute of being with you all at last.

All that said, what struck me the most as I watched and listened to all of you all week is that instead of feeling like the *end* of a long road to get back together, it felt like a *beginning*. There is an energy in urgent care that has been building and building and building for a decade or so, and it feels like it is about to blow up. All of the small, constant pushes by 10,000+ urgent care locations and UCA and CUCM and UCF are finally setting our flywheel to spinning faster and faster and faster. There is power among us, and during the Convention when so many of you were physically in the same place I could literally feel the potential in the air—it was electric.

But what happens now that you have all dispersed again to your homes across the country? And what about all of the untapped power of the urgent care centers who weren't even represented at the Convention or aren't a part of UCA at all?

The question before us is whether we can harness our potential power and do something with it. We at UCA want to do that with you, and you know that we are stronger together—but as an industry and specialty we aren't yet very good at coming together. It's a talent we have not yet developed. We are mavericks by nature, and mavericks resist being corralled. But I think that our maverick nature—which got us where we are—is also holding us back because our potential power is diffused rather than concentrated. What got us *here* won't get us *there*.

When we created the Convention theme of "getting the band back together" we were only thinking of a few days in Vegas, but as I look at it now it means—or could mean—a lot more. ■

CONTINUING MEDICAL EDUCATION

Release Date: June 1, 2022
Expiration Date: May 31, 2023

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

Accreditation Statement
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the Institute for Medical and Nursing Education (IMNE) and the Institute of Urgent Care Medicine. IMNE is accredited by the ACCME to provide continuing medical education for physicians. The IMNE designates this journal-based CME activity for a maximum of 3 *AMA PRA Category 1 Credits™*.

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Physical Therapy as Nonsurgical and Presurgical Management of Common Knee Pathologies (page 13)

1. **Management of medial collateral ligament disruption can often be treated conservatively except in cases where there is:**
   a. Bony avulsion of the MCL attachment
   b. Tibial plateau fracture
   c. Presence of osteochondral fragments
   d. Any of the above

2. **Patients with grade III lateral collateral ligament injury should be evaluated for possible surgical intervention in which of the following scenarios?**
   a. Concomitant posterior cruciate ligament injury
   b. Osteoarthritis
   c. History of vertical meniscal tears
   d. Suspected iliotibial band syndrome

3. **There is evidence suggesting that preoperative physiotherapy is beneficial in which of the following?**
   a. Posterior cruciate ligament injury
   b. Complete quadriceps tear
   c. Anterior cruciate ligament injury requiring reconstruction
   d. Complete patellar tendon rupture

Why Private Equity and Other 'Smart Money' Is Bullish on Brick-and-Mortar Urgent Care (page 17)

1. **According to a report from the University of California at Berkeley, private equity investments in healthcare:**
   a. Have exceeded $750 billion over the last decade
   b. Exceed PE investment in every other U.S. industry except real estate
   c. Double every 3 years going back to 2007
   d. Plateaued in 2018

2. **After traditional full service urgent care centers, which of the following is the most prevalent urgent care "type" in the United States?**
   a. Retail host model clinics
   b. Limited service urgent care centers
   c. Pediatric urgent care centers
   d. Orthopedic urgent care centers

3. **In 2021, what proportion of patients who visited an urgent care center did so for COVID-19–related concerns?**
   a. 26%
   b. Nearly 50%
   c. Over 75%
   d. 82%

How Useful Is Ultrasound in Diagnosing Ovarian Torsion? (page 29)

1. **Incidence of ovarian torsion is most common in:**
   a. Perimenopausal women
   b. Early postmenopausal women
   c. Women of reproductive age
   d. The first trimester of a first pregnancy

2. **Unilateral salpingo-oophorectomy is justified in:**
   a. Postmenopausal women
   b. Women with a history of ovarian cysts
   c. Women with a history of hemorrhagic ovarian cysts
   d. All of the above

3. **Possible consequences of untreated ovarian torsion may include:**
   a. Congestion
   b. Ischemia
   c. Progressive necrosis
   d. All of the above

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Physical Therapy as Nonsurgical and Presurgical Management of Common Knee Pathologies

Urgent message: Appreciation for the cause of knee pain, along with an understanding of potential nonoperative rehabiliation therapies that could be provided in urgent care, can enhance patient care and improve patient satisfaction while minimizing the need for referral.

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Introduction

Knee injuries in adults and children are common presentations to urgent care and emergency rooms.[1] Rehabilitation of those injuries is essential in aiding patients to return to normal function and activities. Many common causes of knee pain improve with a combination of oral analgesics and appropriate physical therapy programs.

Postinjury, physical therapy aids in the recovery process by facilitating improvements in the effects of pain, range of motion, muscle performance, functional ability, and invariably the patient's quality of life. Physical therapy has been shown to be crucial in improving short- and long-term outcomes.

There remains controversy, however, regarding when physical therapy should be initiated and how certain aspects of the therapy are instituted.[2]

Optimal clinical outcomes are dependent on a collaborative multidisciplinary approach that involves the primary physician (UC/ED), orthopedic surgeon, physiotherapist, patient, and other healthcare professionals involved in the patient's care.

The use of adjunct treatment such as splints can be considered. However, the effectiveness of knee braces for chronic knee pain is uncertain, and the use of braces should not replace physical therapy.[3]

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This article will look at the various types of knee injuries that present to the urgent care clinics and the

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role of physical therapy as part of the postinjury rehabilitation process or presurgical conditioning to enable patients to have better recovery postprocedure. We will also look at the latest evidence regarding physical therapy for the common knee presentations to UC.

Medial Collateral Ligament Injury

Most medial collateral ligament (MCL) injuries heal well with conservative treatment. The severity of an MCL sprain helps to determine appropriate treatment. Grade I and II injuries are routinely treated with rehabilitation alone. Many isolated grade III sprains can also be treated solely with rehabilitation, with multiple studies demonstrating the success of nonoperative treatment of MCL tears, including complete tears (grade III injuries).

Rehabilitation programs focus on restoring quadriceps function, improving knee range of motion, and controlling knee edema. In general, most athletes can return to full competition, following a well-guided rehabilitation program, 5 to 7 weeks after injury on average.[4] However, it is important to distinguish grade III sprain and sprains associated with additional knee injuries, as treatments are often more complex and rehabilitation alone may not be sufficient.[5,6]

In MCL sprains with concomitant anterior cruciate ligament (ACL) disruption, the MCL injury can often be treated conservatively with rehabilitation while awaiting definitive treatment of the ACL injury. Bony avulsion of the MCL attachment, tibial plateau fracture, or the presence of osteochondral fragments would alter the treatment for an MCL injury and possibly the approach to rehabilitation.[2,5,6]

Lateral Collateral Ligament Injury

Isolated injury of the lateral collateral ligament (LCL) is uncommon, with grade III tears frequently associated with injury to either one of the cruciate ligaments or the posterolateral complex (PLC). Isolated grade I and grade II injuries are amenable to treatment with physical therapy alone. Grade III injuries or patients with suspected concomitant ACL injury, posterior cruciate ligament (PCL) injury, or PLC injury should be evaluated for possible surgical intervention by the orthopedic specialist. These combination injuries are generally not treated with physical therapy alone, and potentially require an element of surgical intervention to ensure stability of the knee.[7]

Patellofemoral Pain

Exercise-based therapy is the first-line therapy for treating patellofemoral pain (PFP).[3,8]

Based on evidence from the literature, results are optimal when exercises are performed daily for 6 or more weeks.[9] Rehabilitation programs have been shown to reduce PFP-related symptoms at short-term (less than 1 year).[10,11] Long-term improvements have proven more difficult to sustain. An exercise program consisting of several simple strength and mobility exercises can prevent the development of anterior knee pain.[12] This potentially improves the patient's quality of life without requiring surgical intervention.

Quadriceps and Patella Tendon Pain

Published evidence about specific rehabilitation protocols for quadriceps tendinopathy is limited. However, general concepts of tendinopathy treatment, especially those drawn for the treatment of patellar tendinopathy, provide a useful guide for treatment.[13] Several strapping techniques have been shown to be effective in reducing pain and enhancing active movement, therefore improving the patient's overall movements.[2,14]

Quadriceps Muscle Tears

Surgical treatment is indicated for complete quadriceps and patellar tendon ruptures and for high-grade partial ruptures.[15,16] Other than the previously stated, quadriceps muscle and tendon injuries are generally treated conservatively. Following injury, quadriceps muscles quickly develop some degree of wasting due to muscular atrophy from disuse. Therefore, a progressive rehabilitation program should begin as early as possible after injury to prevent muscle wasting from occurring.[16] A dedicated rehabilitation program that allows for continued proprioception and muscular conditioning will allow for speedy recovery in patients, especially those who are keen to return to sporting activities.

Meniscal Injury

Meniscal injuries may occur as an isolated condition or in combination with other injuries, such as ACL tear.[17] Meniscal tears that have issues with symptoms of locking or giving way of the knee should be considered for referral to an orthopedic surgeon, as these patients may benefit from surgical intervention to alleviate those symptoms[3,18] Small intrasubstance and vertical tears that cause infrequent symptoms and do not interfere with general knee function can be managed conservatively with rest, activity restriction, and physical therapy.[18] In these cases, proprioceptive and quadricep strengthening programs will enable the patient to return to activities and sports within a timely fashion without

any significant sequelae to the injury.

In patients presenting with degenerative tears, rehabilitation is especially appropriate.[19] Active rehabilitation has been shown to be as effective as arthroscopy in decreasing pain and improving function in patients with nontraumatic degenerative medial meniscal tears without mechanical symptoms.[3,20] Initial treatment for all meniscal injuries is similar, regardless of the cause of the injury with no difference in the treatment approaches for those with acute meniscal injury, degenerative tears, or postoperative rehabilitation after meniscectomy.[18]

Prolonged knee immobilization in splints and casts should be avoided, as these can lead to muscular atrophy and ultimately delay functional recovery. Progressive weight-bearing and range-of-motion movements are allowed. However, excessive shear forces on the meniscus should be avoided as they can disrupt the healing in all types of injuries.[21,22]

Iliotibial Band Syndrome

Iliotibial band (ITB) syndrome is a common cause of lateral knee pain in the active and athletic population, especially among runners and cyclists.[23] Nonsurgical management is the mainstay of this condition with rest, and activity modification improving pain associated with this condition. Rehabilitation programs for ITB syndrome focus on identifying and correcting strength deficits and discrepancies and mobility defects.[23,24] Additionally, foam rolling can be used as a myofascial release tool to break down any soft tissue adhesions within the ITB.[23]

Osteoarthritis

Physical therapy and exercise are the foundation of nonsurgical management of osteoarthritis-associated knee pain with no clear lesions or associated abnormalities requiring to be addressed surgically.[3,25]

Evidence has shown that active management is more effective than passive modalities in decreasing knee pain and improving function. Treatment modalities are focused on exercise-based therapies and targeted weight loss.[3] Treatment programs that strengthen the quadriceps musculature with either isometric or isotonic-resistive exercise are associated with significant improvement in quadriceps strength, reduction of knee pain, and function.[26]

There is no evidence that presurgical rehabilitation provides postoperative benefits in patients who have had knee arthroplasty for osteoarthritis.[27,28]

Anterior Cruciate Ligament Injury

Physical therapy and a nonoperative approach are generally recommended for grade I and grade II ACL injuries without the presence of knee instability. The principles of rehabilitation for patients with partial tears are similar to those used for patients with complete tears.

Rehabilitation programs consist of exercises for muscle stretching and strengthening and cardiovascular, proprioceptive, and adaptive training.[29] Studies have revealed the ability of partial ACL tears to heal contrary to previous understanding regarding the injury.[30]

Surgical repair of complete rupture of the ACL is recommended to prevent knee joint instability. In highly active patients engaged in jumping, cutting, and pivoting sports, early anatomic ACL reconstruction is recommended because of the high risk of secondary meniscal and cartilage injuries with delayed surgery. A period of progressive rehabilitation to resolve impairments and improve neuromuscular function may be recommended. For patients who want to return to straight-plane activities, nonoperative treatment with structured, progressive rehabilitation is an acceptable treatment option. However, with persistent functional instability, or when episodes of giving way occur, anatomic ACL reconstruction is indicated.[31]

Knee extensor strength deficit following ACL reconstruction is a common problem, producing deficits on knee function for sports activities and even during daily activities. Therefore, the recovery of quadriceps muscles strength is one of the most important factors after ACL reconstruction.[30]

There is evidence to suggest that preoperative physiotherapy rehabilitation is beneficial to patients with ACL injury requiring reconstruction in terms of faster recovery of knee extensor strength and function.[30,32] It is also anticipated that possible reinjury could be prevented by having better quadricep strength and function.[32]

Posterior Cruciate Ligament Injury

In general, nonsurgical treatment has been advocated for patients with isolated grade I or grade II PCL injuries, or those who have grade III injuries with mild symptoms, or who only participate in low-demand activities.[33] Surgical treatment is therefore recommended for symptomatic complete PCL injuries or combination injuries to restore joint stability and improve function.[34]

Rehabilitation may begin when swelling has diminished and pain is well controlled; for many patients that means immediately after presentation. The goal of early rehabilitation is to prevent joint stiffness and encourage recruitment of the quadriceps,

which the patient may have difficulty activating due to pain or joint effusion.

Full strength and function of the quadriceps are needed for full recovery—thus, the importance of addressing this muscle group early during treatment.[33] Dynamic PCL braces can help to keep the tibia in a reduced position during the recovery period by avoiding posterior tibial sag, and are indicated both for nonoperative treatment and postoperative rehabilitation of PCL tears.[34]

Conclusion

There are many causes for knee pain that present to urgent care. Appreciation of the cause of the pain and understanding of the potential nonoperative rehabilitation therapies that are available will help patients' consultations. The ability for the UC physician to provide basic rehabilitation programs, understand the potential benefits of physical therapy in each of the common causes for knee pain, and when to refer patients for these therapies will enhance patient care and improve patient satisfaction. ■

Take-Home Points

- Many common causes of knee pain improve with a combination of oral analgesics and appropriate physical therapy programs (ie, without surgery).
- Medial collateral ligament disruption can often be treated conservatively except in cases where there is bony avulsion of the MCL attachment, tibial plateau fracture, or presence of osteochondral fragments.
- Patients with grade III lateral collateral ligament injury should be evaluated for possible surgical intervention if there is concomitant posterior cruciate ligament injury.
- There is evidence suggesting that preoperative physiotherapy is beneficial in anterior cruciate ligament injury requiring reconstruction.
- Physical therapy and a nonoperative approach are generally recommended for grade I and grade II anterior cruciate ligament injuries without the presence of knee instability.

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Why Private Equity and Other 'Smart Money' Is Bullish on Brick-and-Mortar Urgent Care

Urgent message: Despite the current seasonal, postpandemic lull in volume, sophisticated investors are focused on the long-term growth prospects of urgent care in terms of new rooftops, new patient populations, new services, and new payers...among others.

ALAN A. AYERS, MBA, MAcc

Even for those who are "tenured" in the urgent care industry—the last 24 months of the COVID-19 pandemic have been a rough ride. If 100% were baseline volume, the average urgent care saw volume increase by 71% then fall 58% before and after Alpha, rise another 80% before falling 30% for Delta, and then rising 90% for Omicron before falling 69%, stabilizing back to 2019 volumes.[1] Even if as an urgent care owner or operator you're exhausted, you should know that "big money" is energized.

The fact of the matter is, we're seeing an influx of capital by new and existing investors who see a compelling investment thesis in urgent care based on:

- Rooftop growth and patient growth
- COVID patient retention
- Provider cash on hand
- New patient populations
- Service extensions
- Private equity- and hospital-funded consolidation

According to a report from the University of California at Berkeley,[2] private equity investments in healthcare over the last decade have exceeded $750 billion, a trend that's expected to accelerate in coming years. In 2020, 77.4% of deal volumes involved clinics and outpatient services.[2] In urgent care, specifically, private equity invested in 182 deals from 2012 to 2020, representing approximately 50% of all urgent care transactions.[3]

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Rooftop and Patient Growth

From 2013 to 2021, the industry saw a 7.5% annual growth rate in new centers or "rooftops" with an underlying 4% to 7% annual growth in same-center patient volumes[4]—a trend that's expected to continue in coming years.

The United States has between 8,000 and 16,000 "on demand" healthcare centers (depending on the definition you use, as illustrated in **Figure 1**). Using a round number like 10,000 centers (which includes all that qualify for urgent care certification by the Urgent Care Association), there's approximately one center per 34,000 people in this country of roughly 340,000,000. Based on this population, average patient utilization,

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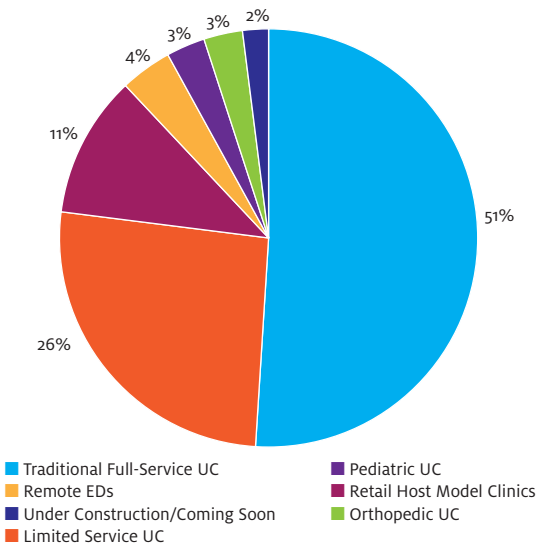
"Investors see ample future growth and cash flow in the urgent care space, but it's not just hospitals and private equity—we're also seeing interest from family offices, foreign equity, and 'core' investors like pension and insurance funds. And of course, owners flush with COVID profits are activity reinvesting in their own profitable businesses."

and average center capacity, the country could support two to three times as many centers as it currently has.

Furthermore, when you break it down by state, the distribution of urgent care centers is wildly uneven. Some states like Tennessee have strong coverage with one center per 25,000 people but others, like California and Illinois (both one center per 42,000) or Texas, Ohio, Pennsylvania, and South Carolina (all one center per 38,000) have populations that remain largely underserved by urgent care.[4]

Figure 1. Urgent Care Centers by Type in the United States



Traditional urgent care centers include all services required for certification by the Urgent Care Association. Limited centers lack one component, such as x-rays or hours, although some may temporarily be classified as limited. Data are updated every 90 days.

Data source: National Urgent Care Realty

According to National Urgent Care Realty,[5] nearly half the nation's urgent care centers are in suburban settings. While there's still "white space" available in every setting, locating in increasingly crowded suburban markets requires a more strategic approach to site selection in order to outposition competition. Meanwhile, developers can open centers in historically under-represented urban and rural areas with little competition leading to more rapid profitability.

Additionally, we expect a continuation in patient volume growth as new locations add capacity. As noted previously, pre-pandemic, we saw average growth in patient volumes at 4% to 7% per year, driven by payer steerage and local marketing driving consumer awareness—a trend that will continue as centers fill their excess capacity and as new patient populations are introduced to urgent care.

COVID Patient Retention

At the "peaks" of the pandemic, the "average" urgent care was seeing over 70 patients per day, according to Experity data[3] which, extrapolated, translates from 700,000 to over 1 million patients per day for the industry. In 2021, nearly 50% of all patients who entered an urgent care center did so for COVID-related concerns. This introduced urgent care to a whole lot of new people.

That's fine, but…will they return? Were they tested in a parking lot? Did they have to wait hours or days for an appointment? Was the center sufficiently staffed with adequate PPE? How many days did the PCR COVID test results (before rapid testing) take? Not everyone had a great experience with urgent care during the pandemic.

On a more positive note, Experity research reveals that 64% of "new" patients—those who first used urgent care for COVID-related reasons during the pandemic—plan to use urgent care again when future non-COVID, urgent care-type complaints arise. This is almost at the "established user" rate of 77%. And given that the "average" urgent care patient visits a center 1.7-2.0 times per year, this translates to a lot of future visits for urgent care centers.

With such a rich database of patients, it is incumbent upon urgent care centers to recapture these patients through digital and conventional marketing, including text and email campaigns, targeted digital display advertising, search engine marketing, and direct mail (among others).

The opportunity is to educate patients as to the cen-

ter's complete offerings and to keep the center top of mind for future episodic medical needs.

Provider Cash on Hand

As a result of record volumes during the pandemic, many providers are now flush with cash. Where are they going to invest it? Real estate is in a bubble. The stock market is volatile. Interest rates are still low, making savings unattractive, and rising interest rates also lead to falling bond prices. All of this points to their "best investment" being their own successful business.

Taking a long-term view, savvy urgent care operators see that low interest rates and rising inflation create a situation in which money borrowed today at low rates becomes essentially "free" when paid back with inflated dollars. Landlords burnt by pandemic closures of restaurants and specialty stores are eager to "deal," meaning high-visibility spaces have not only opened up, but landlords are increasingly willing to give "free" rent and other incentives, enabling urgent care operators to sit on space for 6 to 12 months until they're ready to open.

Not only does cash on hand enable operators to weather any seasonal lull, but given urgent care is a volume-based business (meaning once a sufficient number of visits are attained to cover fixed costs, each incremental visit flows to the bottom line), retention of COVID patients and an endemic COVID mean urgent care centers will hit break-even volume faster than ever.

Cash on hand plays a vital role in the urgent care growth story as existing operators have never been in a better financial position to expand.

New Patient Populations

As urgent care grows in historically underserved markets, entire new patient populations are introduced to the operating model. For instance, rural populations tend to be older (33% >55-years-old vs 26% in suburban markets), less affluent ($64,000 median household income vs $84,000) and less reliant on commercial insurance (66% vs 74%).

This geographic difference in payer mix includes not just Medicare for Seniors, but rural populations are 36% more likely than suburbia to be on Medicaid.

Until recently, there was no Medicaid contract for urgent care in most states. A center could contract as a primary care but that imposed "medical home" requirements, including 24-hour on-call access and hospital admitting privileges, which weren't conducive to an episodic, walk-in model. Low rates also didn't cover the expense of x-ray, procedures, and labs performed in urgent care.

"Endemic COVID" and a Resurgence of Flu Will Fuel UC Growth

One of the challenges early in the pandemic was that urgent care had few treatment resources other than to test and say, "If your symptoms worsen, go the emergency department." Although some centers had access to monoclonal antibodies and appropriate antiviral treatment, such was inconsistent and unreliable.

For urgent care, endemic COVID looks very much like the flu. Patients who present with upper respiratory symptoms will be evaluated, tested (which may include a multipanel test for COVID, influenza, strep or RSV) and, depending on the results, prescribed the appropriate antibiotic or antiviral.

Urgent care seasonality and profitability have long been driven by the presence (or absence) of a strong influenza season. Abandonment of hygiene and social distancing that nearly eliminated flu for the past 2 years will certainly bring a resurgence of influenza.

But COVID itself adds a "second flu." SARS-CoV-2 will continue to circulate in different variants and immunity from 2021 vaccinations will wane, resulting in an overall increase in urgent care volumes. That's because during the pandemic, after completing 30% of the nation's COVID-19 testing, urgent care well established itself as the go-to place for upper respiratory concerns.

Two of the most compelling developments in urgent care have been its recognition by Medicaid payers and the proliferation of rural urgent care footprints.

A patient with commercial insurance is going to face a $100+ copay for the ED. Plan design has curbed excess ED utilization among privately insured patients. However, for Medicaid patients, the ED is essentially "free," leading many patients who lack health access to rely on emergency medicine for primary care. As a result, health outcomes among rural populations have been poor.

Medicaid expansion and the proliferation of urgent care centers in rural communities are helping close a gap in health equity, especially in the light of rural hospital closures. Innovative urgent care providers are extending their services. Medicaid payers are recognizing urgent care's cost savings with preferred reimbursement.

Operators report rural markets entail lower operating overhead, loyal and grateful providers and staff, and a faster ramp-up to break-even volumes by adding something that didn't previously exist: people no longer have to drive 30, 45, or 60 minutes for episodic care. Access to quality, brick-and-mortar healthcare lifts entire communities.

Table 1. Breakdown of Urgent Care Centers by Setting

Urgent care setting	Percent of centers	Trade area radius (miles)	Avg. population	Avg. # of UCs in trade area	UCs/ population
Ultra urban	17.5%	2	54,718	2	27,359
Urban	15.2%	3	105,919	3	35,306
Suburban	19.8%	3	73,365	3	24,455
Suburban light	26.9%	5	94,934	4	23,734
Rural	20.5%	11	28,164	1	28,164

Source: National UC Realty

Table 2. Leading Rural Urgent Care Developers

Operator	States	Centers (opened and announced)
Fast Pace	TN, MS, LA, KY	165
Coastal Urgent Care Partners (Nova, SouthStar, Stitches)	WA, OR, MT, WY, CO, TX	70
Xpress Wellness (plus Integrity UC)	OK, KS, TX	45
ClearChoice (plus CareWell)	NH, VT, MA, RI	36
MainStreet Family Care	AL, GA, FL, SC, NC	32
Low Country Urgent Care (plus Carolina Quick Care)	SC, NC	14
QuickVisit Urgent Care	TX, IA	13
Convenient MD	MA, VT	13
Stopwatch Urgent Care	AL	10
RedMed	MS	7

Source: National UC Realty

Service Extensions

Urgent care should remain focused on high throughput, short waits, and high provider efficiency for the 80% of visits that are the 15-20 most frequent diagnoses. When an urgent care center starts focusing on services other than this core competency of acutely rising sick and injured, it could indicate the center is not executing well as a truly urgent care business.

It's also easy for management to become distracted by "bright shiny objects" and thus take their eye off the ball.

However, there are times when an urgent care center cannot avoid excess capacity due to seasonality, ebb-and-flow throughout the day, and the incremental nature of provider scheduling. In these instances, an urgent care center can increase its revenue and maintain its productivity by adding ancillary services.

Occupational medicine, which for urgent care primarily entails drug screens and multicomponent physicals, tends to be busiest in the summer months when companies are hiring and construction projects are in full swing. Summer historically is a lull from cold/flu season highs. Appointments can be steered towards slow times of day. Additionally, except for workers comp injury care, employer-paid services such as audiometry, spirometry, TB testing, and respirator fit testing can be easily performed by trained medical assistants, meaning they don't add significantly to labor costs.

Many employers are dissatisfied with their current options for occ med—including hospital programs and national chains. Although national accounts like Walmart, FedEx, and UPS may take time to cultivate, every municipality has compliance needs related to police, fire, sanitation, animal control, schools, parks and recreation, schools, bus transit, and other functions.

Apart from occ med, ancillary services that seem to be gaining traction in urgent care include:

- Physical therapy
- Primary and preventive care
- Behavioral health
- Specialist services (allergy, ortho, dermatology, etc.)
- Medication-assisted treatment (Suboxone)

- Weight management
- Medical aesthetics and IV hydration

Ancillary services that complement the core urgent care business can be a way of expanding revenue in, say, rural markets that have finite demand. For example, some operators have formed management services agreements with specialists who can follow up on the center's patients one or two days a week.

It is very difficult for Medicaid and Medicare populations to access dermatologists, for instance, for preventive care like wart and mole removal. That's because many dermatologists are focused on a suburban, cash-pay, cosmetic clientele. During the week there is opportunity to aggregate demand for a specialist that may not otherwise be accessible in the community, creating a new revenue stream for urgent care and improving healthcare accessibility and outcomes for patients.

In short, adding new services is a way to increase total revenue, fill excess capacity, and increase a patient's visit frequency beyond episodic sick visits.

Private Equity- and Hospital-Funded Consolidation

Beyond the returns achieved by expanding the price-earnings multiple of add-on practices attached to desirable platform investments, investors hypothesize that roll-up or buy-and-build strategies can yield administrative economies of scale and improved bargaining leverage with insurers in price negotiations that can improve profitability.

As a result, and as we predicted in *JUCM* in December, 2021,[6] we're already seeing mergers of private equity-backed urgent care entities in adjacent markets. Compared with the time it takes a de novo to open and break even, an investor can add immediate revenue, cash flow and EBITDA by folding in strategic acquisitions. This means "onesies" are becoming "twosies," local platforms are becoming regional platforms, regional platforms are becoming super-regional platforms, and so on.

When talking mergers and acquisitions, we must remember that urgent care is a local business, and the greatest synergies of a multilocation footprint are in a single geography. "One here, two there, three over here" creates challenges with management oversight, adds administrative costs, and weakens team accountability.

By contrast, a mass of centers in a single geography enables a bench of providers to be more efficiently deployed according to demand, a larger marketing budget enabling mass media that benefits all centers (reducing the advertising spend required per location), and greater "stickiness" for employers and health plans who cannot sell their network without participation of the "favorite" urgent care chain.

"As urgent care stepped up to the challenge of COVID-19, such created wind in the sails by establishing urgent care's role in the nation's healthcare framework."

On a local level, acquisitions will largely be driven by hospitals and health systems seeking to expand their brand catchment and capture greater downstream referrals.

Today, approximately 43% of urgent care centers have a health system "affiliation."[5] But the nature of the affiliation can look very differently depending on the hospital. In some cases, urgent care is owned and operated by the local hospital as a stand-alone entity. In others, it's part of a primary care or multispecialty group affiliated with the health system.

And, perhaps, what's increasingly the most common arrangement is where a private third party (including independent physicians and PE-backed platforms) have full management and operational control of a center cobranded with the hospital, which can be a joint venture, management services, landlord/tenant relationship, and/or a downstream referral agreement.

So, not only do we expect hospitals to buy local centers, but we expect new rooftop growth through partnership agreements between private urgent care developers and health systems.

Conclusion

Before the pandemic, there may have been reasons to be concerned about urgent care's ability to sustain it's 2010–2019 growth rates. But as urgent care stepped up to the challenge of COVID-19, such created wind in the sails by establishing urgent care's role in the nation's healthcare framework, introducing millions of new consumers to the model, providing capital for future expansion, and raising the visibility of the industry to new investors. ■

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Pediatric Elbow Fractures: A Clinical Review

Urgent message: Though the most common fracture seen in pediatric trauma patients, elbow fractures can be difficult to identify in younger patients. Familiarity with elbow anatomy, ossification centers, and fracture patterns is essential for optimal outcomes.

AMY GROVER, MD

Case Vignette

A 7-year-old previously healthy female presents to urgent care with a chief complaint of left elbow pain after a fall on outstretched arm. She had immediate pain, swelling, and difficulty moving her arm. Her examination is notable for marked left elbow swelling and diffuse elbow tenderness. She has a strong radial pulse, brisk cap refill in her fingers, and can wiggle her fingers easily, but is reluctant to move the rest of her left upper extremity.

Background

Elbow fractures are a common injury seen in pediatric urgent care. In a series of more than 15,000 pediatric trauma patients, elbow fractures were the most common fracture (16%).[1] Despite the prevalence, the elbow is a location where fractures are frequently missed, compared with other anatomic locations.[2] The cartilaginous nature of the pediatric elbow, along with variability in developmental ossification, make radiographic interpretation challenging. Understanding elbow anatomy, ossification centers, and fracture patterns is essential in caring for and accurately diagnosing pediatric elbow fractures.[3]

Anatomy

The elbow joint is comprised of the ulno-humeral and radio-capitellar articulations. It is almost completely nonossified in the newborn period, with ossification centers developing in a predictable pattern over time, demonstrated by the mnemonic CRITOE (capitellum, radial head, internal (medial) epicondyle, trochlea, olecranon, and external (lateral) epicondyle). While there is some individual and gender-based variability, these ossification centers appear at approximately 1, 3, 5, 7, 9, and 11 years of age.[4,5] Therefore, if a 5-year-old child has an ossific density in the region of the trochlea, it is likely a fracture fragment and not an ossification center. When there are questions of fractures vs growth centers, contralateral films may be helpful as both elbows tend to ossify similarly.

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Physical Exam

The physical examination of a child with extremity

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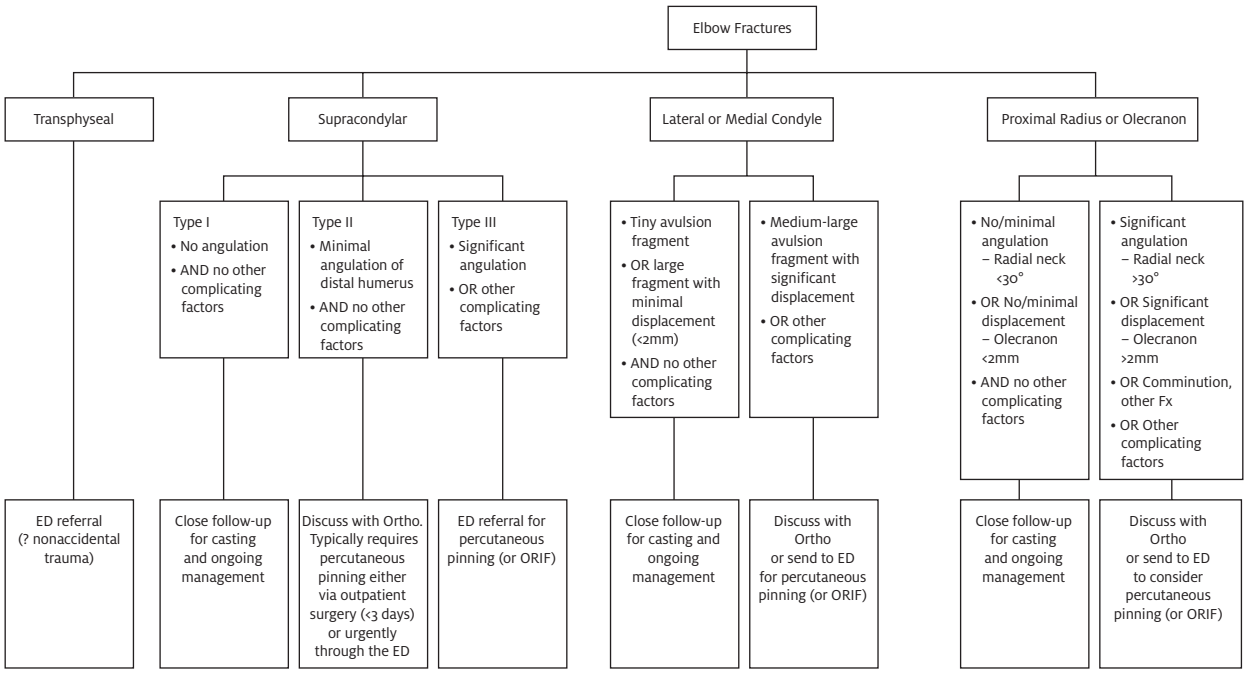
Figure 1. Management of Common Pediatric Elbow Fractures



**All elbow fractures should be immobilized using a posterior long arm splint, regardless of disposition (outpatient follow-up or ED referral). Most splints should be at 90° but this may be limited by pain or by fracture type where less flexion may be appropriate

trauma must include neurologic, vascular, and soft tissue assessment.[3]

Neurologic assessment of the motor and sensory function of the radial, median, and ulnar nerves can be done quickly by asking the patient to demonstrate a "thumbs up" (radial nerve performs thumb extension); "A-OK" (anterior interosseous nerve flexes the index finger DIP joint and thumb IP joint; be sure they are in flexion to create an O, not just apposed like a pinch); make a fist (median nerve controls finger flexion); and either spread or cross fingers (ulnar nerve).[6]

Light touch sensation is assessed at the dorsal thenar web space (radial nerve), and the tip of the middle (median nerve) and little (ulnar nerve) fingers. It is crucial not to miss subtle neurovascular deficits preintervention. If the patient has a postintervention nerve palsy and the preintervention exam states "NV Intact" then the injury will be deemed iatrogenic. Over 90% of cases in one series had no documentation of individual nerve examination, and significant nerve injuries were missed.[7]

Vascular exam includes assessment of radial pulse, as well as finger capillary refill. Doppler assessment can be useful if the pulse is nonpalpable, which is most commonly due to a temporary arterial spasm (though more serious injuries must be ruled out). Early signs of vascular insufficiency include lack of active finger extension, forearm pain with passive finger extension, forearm tenderness or firmness to palpation, and pain out of proportion to injury. These can be present even if the pulse is palpable, as venous and capillary flow are obstructed earlier than major arteries.[3,4]

There is an increased risk of compartment syndrome with extensive soft tissue injury (swelling, bruising) about the elbow. Any child with concerning findings should be promptly evaluated by an orthopedist and have compartment pressures measured early.[3] The skin should be carefully examined to rule out an open fracture. Finally, infection should always be considered on the differential of a swollen joint, especially if the trauma history is vague or nonspecific. If the history is unclear in the presence of a joint effusion, serum inflammatory markers may be helpful. [6]

Radiographic Evaluation

Standard elbow radiographic evaluation includes a true

Figure 2a. Type I supracondylar fracture (effusion only).

Figure 2b. Type II supracondylar fracture.

Figure 2c. Type III supracondylar fracture.

lateral (elbow flexed to 90°), and an anteroposterior (AP) view in full extension. Obtaining true AP and lateral films can be challenging in a child with significant pain and swelling. Pain control prior to imaging can help avoid suboptimal positioning which limits radiographic interpretation. Oblique views can improve diagnostic accuracy for subtle fractures, especially lateral condyle fractures.[6]

As with all radiographic interpretation, having a systematic evaluation process can help diagnostic accuracy. Evaluation should include assessment of the anterior humeral line, radio-capitellar joint alignment, and the fat pads.

In a lateral projection, the anterior humeral line (drawn along anterior cortex of the humerus) should intersect the middle third of the capitellum, though oblique projections and the small size of the capitellum in patients younger than 5 years of age can make interpretation difficult.[5] The radio-capitellar line should intersect from the middle of the radial shaft through the middle third of the capitellum. The sail sign is caused by an intra-articular elbow joint effusion which lifts the anterior fat pad away from the bone, making it visible on x-ray. A small anterior fat pad on a lateral film can be a normal finding, but a posterior fat pad is suggestive of elbow fracture, even if it is the only radiographic abnormality seen.

The majority of these injuries on follow-up are found to be nondisplaced supracondylar fractures.[8] Due to the cartilaginous nature of the pediatric elbow, sometimes fractures are only visible in follow-up once callus has begun to form about the fracture site.[6]

Pediatric Fracture Patterns

The following discussion outlines the most common pediatric fractures, along with an approach to management for each fracture. Any fracture variations, complicating factors, dislocations, or features that alter the neurovascular status require further discussion with an orthopedic surgeon.

Transphyseal Humerus Fractures

This fracture pattern is only seen in young children, under age 2. It is caused by separation of the distal humeral epiphysis and can mimic an elbow dislocation. Because children of this age infrequently fall on an ex-

Figure 3. Lateral condyle fracture.

tended outstretched arm, this fracture is commonly inflicted and not accidental. Further investigation and evaluation for nonaccidental trauma are recommended for any transphyseal humerus fracture similar to fractures of the mid-humerus in this age group.[5,6]

Supracondylar Fractures

Supracondylar fractures are the most common pediatric fracture in the 0-7 age group[9] and are generally caused by forcible elbow extension during a fall on an outstretched hand. Along with lateral condyle fractures, they are the most common pediatric elbow fractures requiring surgical intervention.[10] Gartland classified extension supracondylar fractures in the following way: type I, nondisplaced fracture; type II, displaced with an intact posterior cortex; and type III, displaced with no cortical contact of the fracture fragment. (See **Figure 2**.)

While type III fractures are difficult to miss, type I and II fractures can be subtle. The anterior humeral line is an important landmark to show anatomic position of the humerus against the capitellum. When the line is anterior to the middle-third of the capitellum, this suggests misalignment and possible need for percutaneous pinning to stabilize and align the joint.

Type I fractures are stable and can be treated with a posterior long arm splint with the elbow at 90° of flexion, and orthopedic follow-up for casting. Type II and III fractures require surgical intervention, though practice patterns vary with regards to the timing of the surgical pinning and when to use open vs closed reduction.[3,6,10] Nerve injuries, particularly to the anterior interosseous nerve, are common in supracondylar fractures, especially in displaced fractures. Radial, median, and ulnar injuries are all reported.[11] The majority of these nerve injuries are transient, with good long-term functional recovery.[12]

Lateral Condyle Fractures

A lateral condyle fracture (**Figure 3**) is the second most common fracture in the pediatric elbow. Patients generally present with swelling and tenderness limited to the lateral elbow.[3] These fractures are intra-articular and often cross the distal humeral physis into the capitellar ossification center. They are less likely to have significant soft tissue or acute neurovascular injury, but long-term complications such as growth arrest, nonunion, avascular necrosis, and tardy ulnar nerve palsy are possible. Oblique elbow views improve diagnostic accuracy for lateral condyle fractures, which can be missed on standard AP and lateral views. Minimally displaced (<2 mm) fractures can be managed with casting in consultation with orthopedics. The patient should be splinted with forearm in neutral and the elbow at 90° flexion.[4] Greater amount of displacement is generally treated with open[3,6] or closed reduction with pinning.[13]

Medial Epicondyle Fractures

Medial epicondyle fractures tend to occur in older children, generally aged 10-14 years. They do not involve the physis, and a fat pad sign will be absent, as the medial epicondyle is extra-articular.[3] Neurovascular complications are rare, but the ulnar nerve is most commonly affected.[6] Most patients with isolated, minimally displaced fractures can be acutely managed with a posterior long arm splint and outpatient orthopedic follow-up.[3] If there is significant soft tissue injury, joint instability, or a fat pad sign on radiographs, then an additional bony or ligamentous injury should be suspected. Generally, these fractures are stable but if the fragment is significantly displaced or incarcerated in the joint, operative intervention is necessary.[14] Fractures of the medial epicondyle should be differentiated from overuse traction injuries of the medial epicondyle

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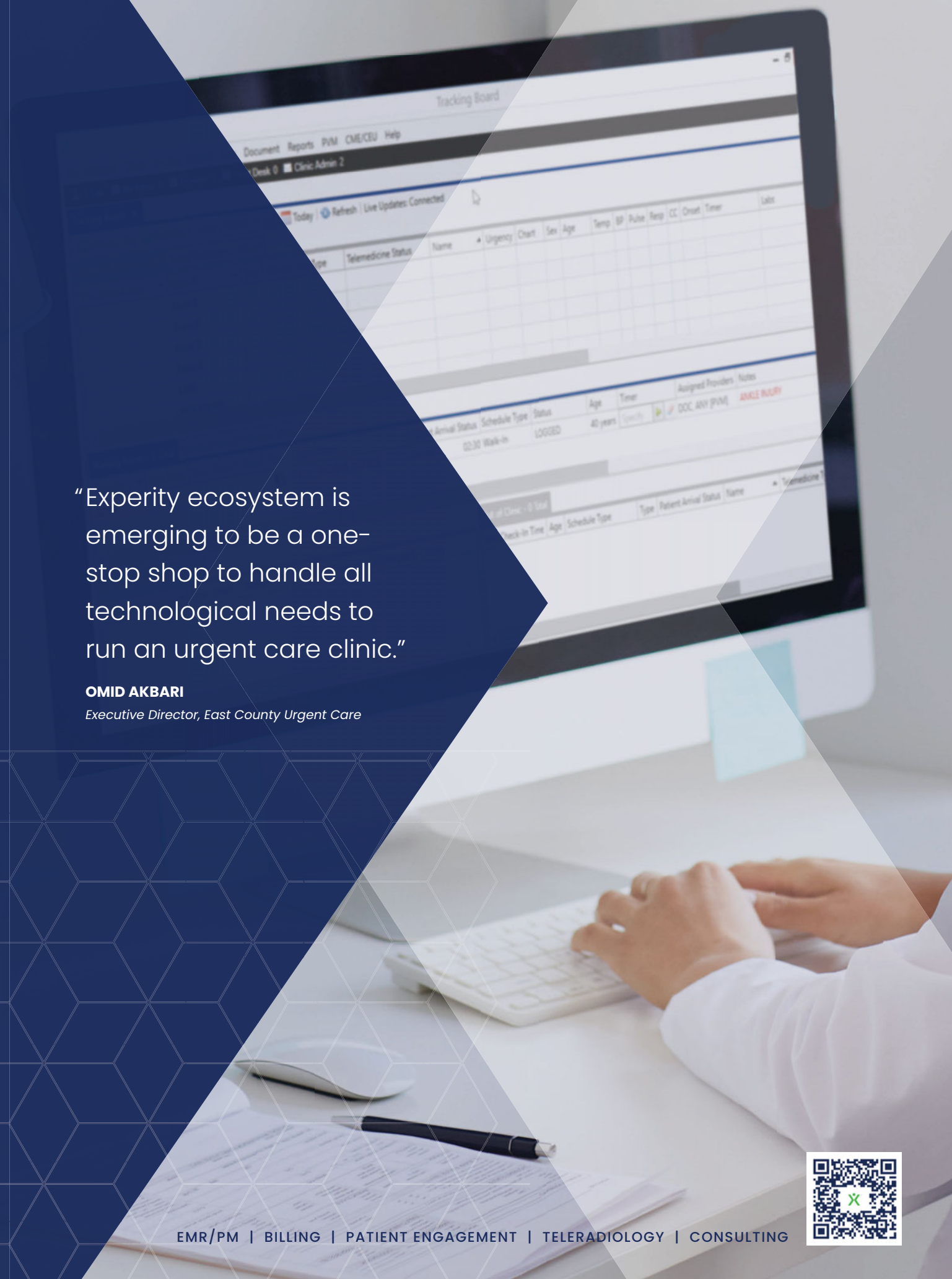

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apophysis which is sometimes termed "little league elbow."

Proximal Radius Fractures

Proximal radial fractures are generally caused by a fall onto an outstretched hand leading to fractures of the radial neck or physis, which differs from adults where proximal radius fractures are more often in the radial head.

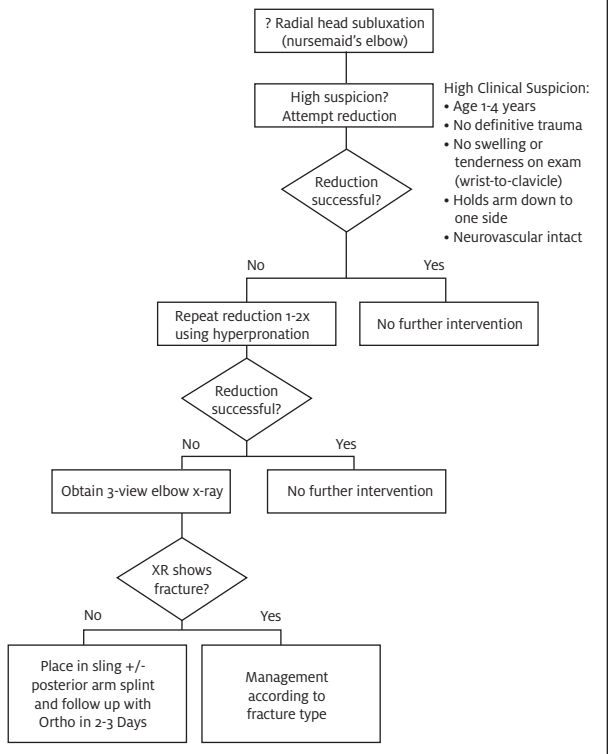
These fractures are most common in the preteen years.[3] In isolated fractures, tenderness is localized to the proximal radius, which is palpable in the depression 1 inch distal to the lateral epicondyle when the elbow is flexed to 90°. Forearm rotation rotates the radial head, such that pronation and supination are painful with these injuries.[4] Minimally displaced fractures can be difficult to identify on radiographs and have been reported as one of the most commonly missed fractures in pediatric urgent care. Oblique views, specifically the radiocapitellar view, can help with fracture identification.[5] Radial neck fractures with less than 30° of angulation and less than 2-3 mm translation can be managed nonoperatively, in a posterior long arm splint with elbow at 90° flexion and orthopedic follow-up. Angulation is better tolerated than translation, which tends to result in loss of supination/pronation if not adequately corrected.[3,6]

If a displaced radial neck fracture is noted, 50% of children will have another associated fracture. Care should be taken to evaluate the medial epicondyle, olecranon, coronoid process, and distal humerus on radiographs.[6] The Monteggia fracture is a dislocation of the radial head associated with a fracture of the ulna. Ulnar malalignment needs to be corrected or it can lead to gradual dislocation of the radial head.

Radial Head Subluxation (Nursemaid's Elbow)

Radial head subluxations mimic elbow fractures and are one of the most common injuries presenting to pediatric urgent care. This injury is caused by longitudinal traction on an outstretched arm, such as occurs when catching a child who has tripped while holding onto an adult's hand. The traction causes stretching or partial tearing of the annular ligament which holds the radial head against the proximal ulna, allowing the radius to slip under the annular ligament. This injury is most common in children ages 1-4 and peaks in toddlers between 16 and 24 months of age. Classically, a child with a nursemaid's elbow presents with no distinct injury; refusal to use the affected arm, holding it down to one side slightly pronated, without any swelling, bruising, or pain on exam.[6] Radiographs should be reserved for patients with exam findings or if attempts at reduction have failed (**Figure 4**).

Figure 4. Management of Suspected Nursemaid's Elbow



Generally, radiographs will be normal, though a small percentage may have minimal displacement of the radiocapitellar line.[15]

Reduction maneuvers involve either flexion-supination while applying pressure over the radial head or gentle hyper-pronation with elbow flexed. A click should be felt as the radial head reduces. Within a few minutes the child should use the arm normally. If a child fails to gain normal function of the arm and has a negative radiograph, the child should be placed in a posterior elbow splint with elbow flexed to 100° in full supination and follow up with the pediatrician or orthopedist, depending on level of suspicion for fracture.[6]

Pearls and Pitfalls

- A three-view radiograph series (AP, oblique, lateral) is recommended for any suspected fracture to the pediatric elbow.
- Fractures of the radial neck and supracondylar type I fractures can be subtle. Special attention is necessary

"Concerns for alignment, displacement, or exam findings out of proportion to radiography are red flags for splinting and orthopedic consultation."

to avoid missing these fractures on radiographic assessment.

- Splinting and an orthopedic consultation are always recommended for any fracture where there are concerns about alignment, displacement, or exam findings out of proportion to the radiographic ones.

Vignette Conclusion

Radiographs demonstrated a type II supracondylar humerus fracture with slight displacement of the distal humerus, suggested by displacement of the anterior humeral line. The patient was placed in a posterior long arm splint and sling. Orthopedics was consulted and able to arrange an outpatient ambulatory evaluation the next day to be followed by closed percutaneous pinning at an outpatient surgery center. ■

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See **CME Quiz Questions** on page 11.

How Useful Is Ultrasound in Diagnosing Ovarian Torsion?

Urgent message: Ultrasound can provide essential data in the urgent care evaluation of abdominal pain, aiding in the diagnosis of intestinal abnormalities, urinary tract infection, and obstetrical and gynecological problems such as suspected ovarian torsion.

ANDREW ALAYA, MD, MSc

Introduction

Abdominal pain is one of the most common complaints among women of childbearing age who visit urgent centers. Urinary tract infection, diarrhea, constipation, acute viral gastroenteritis (AGE), pelvic inflammatory disease (PID), and dysmenorrhea are the most common etiologies; less common are appendicitis, incarcerated hernias, and small bowel obstruction. Other causes include corpus luteum rupture with hemorrhage, a malpositioned intrauterine device (IUD), and degenerating fibroids.[1]

Origin

Ovarian torsion occurs when the adnexa is partially or completely rotated around its vascular axis, which may cause an interruption in the ovarian blood and lymphatic flow. The severity of the vascular impairment depends on the number of twists and the tightness. While both the ovary *and* the fallopian tube are often twisted, sometimes only the ovary *or* the fallopian is involved. This condition causes venous congestion, edema, compression of arteries, and eventually loss of blood supply to the ovary.[1]

The incidence of torsion is greatest (70%) in women of reproductive age. However, it can occur from prepuberty to postmenopause. Ovarian torsion is said to be the fifth most common surgical emergency among women younger than 20 years of age, accounting for 2.7% in this population.[2] Prompt diagnosis is essential, as this requires emergency surgical intervention.

If not treated, ovarian torsion may lead to congestion and ischemia which result in infertility and progressive necrosis, possibly leading to loss of the ovary. The majority of patients with ovarian torsion have delayed diagnosis.[2]

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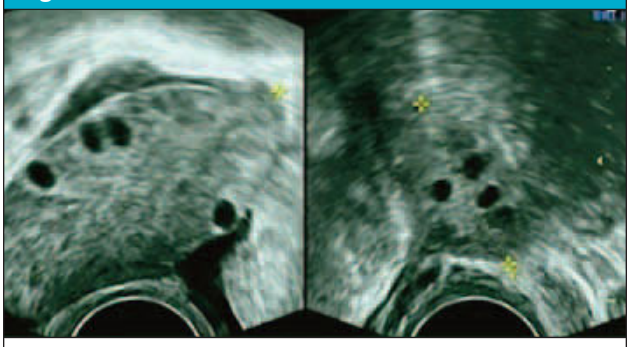
This case report illustrates how ultrasound can aid in improving clinical findings to diagnose ovarian torsion and reduce time to emergency surgical intervention.

Case Presentation

A 39-year-old female presented to the urgent care clinic a day after developing acute periumbilical abdominal pain, unimproved with oral analgesic medication. She

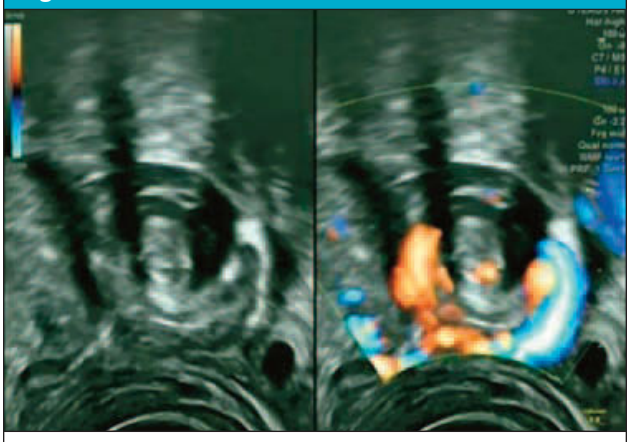
Author affiliations: Andrew Alaya, MD, MSc, Bronovo Hospital, The Hague, Netherlands. The author has no relevant financial relationships with any commercial interests.

Figure 1.



Left and right ovary. Note that the left ovary is larger than the right ovary, and that the left ovary shows stromal edema with peripheral displacement of antral follicles.

Figure 2.



Double screen showing left twisted fallopian tube and vascular pedicle with Doppler and without Doppler (Whirlpool sign).

was nauseated but did not vomit. Defecation and micturition were normal. PMH/PSH revealed asthma and gastric bypass, gastric band removal, C section X 4, and appendectomy. Vital signs were:

- Pulse 58
- Blood pressure 135/58
- Temperature 37.8ºC
- Respiration 15 p/min
- S_pO_2 100%

Physical examination revealed laparoscopic scars. There was significant lower left quadrant pain on palpation.

Due to diagnostic uncertainty, she was emergently referred. A CT scan with contrast of the abdomen and pelvis was normal except for some fluid in the pelvis. The left ovary measured 4.9 cm, slightly bigger than the right at 3.9 cm. Further study with a transvaginal US examination revealed an enlarged left ovary of 6.5 cm in size with stromal edema and peripheral displacement of antral follicles (**Figure 1**). Next to the left ovary there was a twisted fallopian tube and vascular pedicle (**Figure 2**), consistent with a left-sided ovarian torsion. Diagnosis was confirmed at laparoscopy.

Discussion

Lower Abdominal Pain in Women

In urgent care medicine, diagnosis of ovarian torsion is made based on clinical findings and confirmed with objective testing. Most patients (94% to 100%) have acute pelvic pain, which can be constant or intermittent as the adnexa can twist and untwist. Due to vagal reflex, 70% have nausea and vomiting. Fever is seen in rare cases.[2]

In women of childbearing age, an ectopic pregnancy must be first ruled out with a negative beta hCG.[3] Like ovarian torsion, a ruptured ovarian cyst may have free fluid in the pelvis. A gradual onset of lower pelvic pain with fever may be the cause of a tubo-ovarian abscess. Appendicitis results in a lower right-sided pain with nausea, vomiting, and fever.

Laboratory Testing

Laboratory test abnormalities are nonspecific because lab results are often normal in ovarian torsion. Abnormal lab findings may indicate leukocytosis or anemia if there is hemorrhage.[4] Other causes include pyelonephritis, diverticulitis, and pelvic inflammatory disease.

Risk Factors

One of the main risk factors for ovarian torsion is previous adnexal torsion, seen in 11% to 19% of patients with ovarian torsion. The recurrency is higher in patients who have had torsion of a normal ovary than that of ovary with cyst.[4] The right ovary is more commonly seen affected than the left ovary, which is thought to be due to the increased space in the right side and due to the location of the sigmoid colon on the left.[4]

(See **Table 1**.)

In 46% of patients with ovarian torsion, there was an association with neoplasm; in 48% there was an association with cysts (of which 89% were benign). The risk of torsion increases when an ovarian mass is >5 cm; however, it is reduced in patients with endometriosis and malignant lesions because the mass is fixed due to adhesions and local inflammation.[6] Torsion can still occur in 20% of normal ovaries, especially in the pediatric population.[4] Patients undergoing fertility treatment are at high risk due to enlarged follicles on the ovaries.[4]

Table 1. Possible Risk Factors for Ovarian Torsion (OR)

Features	Frequency in torsion cohorts	Frequency in population	OR	Is it a risk factor?
Known ovarian cyst	25% (22/87)	6.6% (22/335)	3.8:1	Yes
Known ovarian cysts in pregnancy	• 0.2% (5/3,000) Torsion in all <14 weeks cohort • 3% (5/161) Torsion of a cyst found in <14 weeks gestation • 6% (4/17) Torsion of a cyst in pregnancy (all gestations)	• 6% 182/3,000 Cyst > 25 mm or complex at <14 weeks gestation • 0.5% (1/197) Incidental cyst at Caesarean section • 0.05% (63/127,177) >5 cm • 24.9% (728/2,925) Cyst at 12-week nuchal scan, all sizes		
Pregnancy	• 8% (12/150) • 17% (23/135) • 27% (12/45) • 15% (12/87) • 24% (5/21)	• 15.47 births per 1,000 population USA (1.547%)	15:1	Yes
Post-tubal sterilization	21% (7/33)	4.75 per 1,000 person-years (0.47%)	53:1	Yes
Posthysterectomy	• 5% (7/87) • 2.8% (5/179)	13% (268/2,066)	0.38:1	No
Caesarean section	19% (34/179)	24%	0.79:1	No
Previous pelvic surgery	32% (58/179)	N/A		
Post-myomectomy	2.8% (5/179)	N/A		
Post-menopausal	17% (15/87)	N/A		
Recurrence of torsion	• 5% (5/102) • 15% (5/38) In same pregnancy	N/A		

Adapted from Asfour V, Varma R, Menon P. Clinical risk factors for ovarian torsion. *J Obstet Gynaecol*. 2015;35(7):721-725.

Imaging

The imaging of choice is US with color flow Doppler. Both transabdominal and transvaginal ultrasound should be performed. The sensitivity of US is 84%, but this is dependent on many factors including the skills of the operator and the patient's anatomy.[5] Free fluid may be visible, or the demonstration of the whirlpool sign due to the twisting of the vascular pedicle in cross-section.[5]

MRI and CT have been attempted as an alternative imaging modality; however, US remains more accessible and most cost-effective worldwide.[5]

The definitive diagnosis of ovarian torsion is made by direct visualization of the rotated ovary during surgery. Diagnostic laparoscopy should be performed when there is strong clinical suspicion, even with a negative US; ovarian torsion was confirmed in 44% of such patients.[6] Asfour, et al found a median time of 101 hours between first physical examination and surgery.[4]

In patients of reproductive age, laparoscopy is always preferable, when possible, to untwist the ovary. In 88% to 100% of surgeries, laparoscopy has been reported to preserve ovarian function. In postmenopausal patients, unilateral salpingo-oophorectomy is justified due to the higher risk of malignancy and for prevention of recurrence.[6]

Conclusion

Ovarian torsion may be found in patients presenting to urgent care. Due to vague and nonspecific clinical presentation, diagnosis is challenging and there is high risk for misdiagnosis. Early suspicion is crucial to preserve ovarian and fallopian tube functions. US can aid in diagnosing ovarian torsion and shorten the time to intervention. ■

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ABSTRACTS IN URGENT CARE

- Maximizing the Value of Urine Dipstick Testing
- Screening for Intimate Partner Violence
- Antibiotics for Children with RTI
- Azithromycin in Pediatric Viral Infection
- Self-Monitoring BP with Unvalidated Devices
- Modified Valsalva Maneuver in SVT
- To Mix or Not to Mix COVID-19 Vaccines?

IVAN KOAY, MBCHB, FRNZCUC, MD

Nitrofurantoin Resistance

Take-home point: Proteeae group bacteria, which are often resistant to nitrofurantoin, normally result in alkaline (ie, high pH) urine on dipstick testing.

Citation: Sheele J, Libertin C, Fink I, et al. Alkaline urine in the emergency department predicts nitrofurantoin resistance. *J Emerg Med*. 2022;62(3):368-377.

Relevance: A potentially underutilized data point available from urine dipstick testing, pH may provide clues to resistance patterns and guide treatment of urinary tract infections (UTI).

Study summary: Data were drawn from a single health system database of emergency department patients aged >18 years. Out of 67,271 urine samples over a 4-year period, 13,456 grew a single bacterial species.

The authors found that urine cultures growing the Proteeae group (ie, *Proteus* species, *Morganella* morganii, and *Providencia* species) were associated with significantly higher urine pH than culture growing other bacteria (odds ratio [OR] 2.20, 95% confidence interval [CI] 2.06-2.36; p <0.001). Proteeae group urine samples represented 24.4% at pH 8-9 and 40.0% at pH 9. At urine pH 5-7, 80.4% of urine samples were sensitive to nitrofurantoin; however, this percentage decreased to 66.1% for urine pH 8-9 and 54.6% for urine pH 9. Urine pH of 8 or higher was most associated with high rates of nitrofurantoin resistance.

Editor's comments: This was a single-center, retrospective study. However, its findings are worth noting for UC providers who most commonly select treatment empirically based on urine dipstick results. While nitrofurantoin is the preferred first-line empiric choice for uncomplicated UTI, it would be reasonable to choose a different agent for very alkaline specimens. ■

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Do We Need to Screen Better for Intimate Partner Violence?

Take-home point: The authors argue for greater vigilance in screening for intimate partner violence (IPV) among patients presenting for acute care.

Citation: Feral-Pierssens A-L. Intimate partner violence: we should not fail to ask about it! *Eur J Emerg Med*. 2022;29(2): 91-92.

Relevance: Screening for and detection of IPV is largely underprioritized in the urgent care setting.

Study summary: This paper focuses on common patterns of presentation and methods of improving detection of IPV. Prevalence of IPV ranges widely, from 5% to 50% of women visiting the ED in studies cited. Systematic screening by sufficiently trained healthcare providers has been shown to significantly increase detection rates. IPV is not inevitable, and the author cautions against nihilism. Encounters with the healthcare system offer one of the highest-yield opportunities for intervention when IPV is identified.

Editor's comments: While this was a perspective piece, it serves as a reminder to focus on identifying less obvious groups of vulnerable patients. ■

Antibiotic Prescribing for Respiratory Tract Infections in Children

Take-home point: Amoxicillin and antibiotics in general are not recommended for uncomplicated chest infections in children unless pneumonia is suspected.

Citation: Little P, Francis N, Stuart B, et al. Antibiotics for lower respiratory tract infection in children presenting in primary care in England (ARTIC PC): a double-blind, randomised, placebo-controlled trial. *Lancet*. 2021;16;398(10309):1417-1426.

Relevance: Despite widespread awareness of the importance of antibiotic stewardship, amoxicillin is still commonly prescribed for simple respiratory tract infection in children. This study adds further confirmation and reassurance that, unless pneumonia is diagnosed, amoxicillin doesn't benefit children with RTI.

Study summary: ARTIC PC was a double-blind, randomized, placebo-controlled, parallel-group trial of amoxicillin vs placebo for children presenting with respiratory infections in primary care at 56 general practice clinics in England. Participants were randomly assigned in a 1:1 ratio to receive either amoxicillin 50 mg/kg per day orally divided into three doses for 7 days or placebo.

Of 438 patients enrolled, 222 were randomly assigned to the antibiotics group, with the other 216 assigned to the placebo group. The authors found the median duration of improvement of symptoms in patients with at least moderately severe symptoms was similar between groups (5 days [IQR 4–11] in the antibiotics group vs 6 days [4–15] in the placebo group). There was a small but statistically significant difference between the groups in symptom severity on days 2 through 4 (1·8 [SD 1·0] in the antibiotics group vs 2·1 [1·1] in the placebo group).

These results suggest that antibiotics do not provide a clinically important benefit on average for symptom reduction nor symptom severity.

Editor's comments: The study was not powered to assess complications or repeat consultations. Recruitment was halted due to the COVID-19 pandemic. Results confirm findings of a number of previous studies indicating that antibiotics, amoxicillin in particular, do not reduce the duration of illness for most children with respiratory infections. ■

Azithromycin to Prevent Recurrent Wheeze in Pediatric Viral Infections

Take-home point: This study showed no benefit in the administration of oral azithromycin in preventing recurrent wheezing in children with viral respiratory infections.

Citation: Beigelman A, Srinivasan M, Goss C, et. al. Azithromycin to prevent recurrent wheeze following severe respiratory syncytial virus bronchiolitis. *NEJM Evid*. 2022;1(4).

Relevance: Wheezing is common among children with viral upper respiratory infection. Azithromycin has been shown to have anti-inflammatory effects; however, it is unclear if this is clinically meaningful in reducing the probability of developing asthma.

Study summary: This double-blind, placebo-controlled, parallel-group, single-center randomized trial compared the effects of azithromycin vs placebo in preventing reoccurrence of wheezing in children who presented with wheezing in the setting of viral URI. There was an active treatment phase of 2 weeks and an observational phase of up to 48 months, with participants enrolled during three consecutive respiratory syncytial virus seasons. Azithromycin was administered orally as 10 mg/kg once daily for 7 days, followed by 5 mg/kg once daily for 7 days.

Two hundred children were randomly assigned to treatment vs placebo arms. The authors found 47% in the azithromycin group developed recurrent wheeze compared with 36% in the placebo group. There was no significant difference in recurrence of wheezing rates between participants in the azithromycin and placebo group. There were no differences between the azithromycin group and the placebo group in the annualized number of days with any respiratory symptoms.

Editor's comments: This was a single-center study and the duration of azithromycin treatment (2 weeks) does not conform to standard treatment guidelines. The authors noted a reduction in respiratory symptom in the third year of the study, which coincided with the start of the COVID-19 pandemic. They postulate that this might be due to other factors introduced during the pandemic, including social distancing and lower levels of air pollution. ■

Validation of Blood Pressure Monitoring Devices

Take-home point: Lack of validation of blood pressure monitoring devices used by patients complicates management of hypertension.

Citation: Picone D, Campbell N, Schutte A, et al. Validation status of blood pressure measuring devices sold globally. *JAMA*. 2022;327(7):680-681.

Relevance: The lack of universal standardization of BP monitoring devices or validation of their accuracy can lead to faulty diagnoses of hypertension and unnecessary treatment with inherent risk of side effects.

Study summary: Analysis was conducted on the publicly available database of Medaval, a for-profit company that provides services for device manufacturers, including validation of research studies for complete protocol adherence and performing

validation studies, which are published in peer-reviewed journals. For this study, 3,411 devices from 457 unique manufacturers were identified for review.

The authors found 300 devices (8.8%) were validated, 378 (11.1%) were equivalent, and no evidence of validation for 2,602 (76.3%). Devices listed were from companies that distribute worldwide, as well as by e-commerce. Among the upper arm cuff devices reviewed, 10% were validated, 13.2% were equivalent, and there was no evidence of validation for 73%. In wrist-based devices 5.6% were validated, 5.5% were equivalent, and there was no evidence of validation for 85%.

Editor's comments: The devices included in this database may represent a biased sample. However, it is clear that home BP monitoring devices are not universally validated. This is important to note for patients reporting concerns for high or low readings at home that do not correspond to values in clinic. In such situations, it's worthwhile to have the patient bring their BP cuff in for their next clinic visit to compare values.

Efficacy of Modified Valsalva Maneuver Technique in Treatment of Supraventricular Tachycardia

Take-home point: The modified Valsalva maneuver (VM) was found to be significantly more effective than standard VM in the treatment of supraventricular tachycardia.

Citation: Lodewyckx E, Bergs J. Effectiveness of the modified Valsalva maneuvers in adults with supraventricular tachycardia: a systematic review and meta-analysis. *Eur J Emerg Med*. 2021;28(6):432-439.

Relevance: SVT is a relatively benign dysrhythmia in most cases; however, chemical or electrical cardioversion is rarely an option in urgent care. VM, if effective in terminating SVT, may spare patients from an ED visit.

Study summary: This was a systemic review and meta-analysis using the PRISMA standards for analyzing systemic reviews. Only randomized clinical trials comparing the standard VM's and modified VM's effectiveness in achieving sinus rhythm conversion in adults with SVT (defined as a QRS duration less than 120 ms and a rate more than 100 bpm) were included. Five studies were identified as suitable for meta-analysis which consisted of 1,181 patients. MV included blowing into a syringe or straw and abdominal counterpressure with leg elevation.

The authors found all studies reported a significant difference between standard VM and modified VM, favoring modified VM (OR = 4.36). Pooled analysis showed 15.8% conversion rate for standard VM vs 45% in the modified VM group (NNT = 3.4 patients).

Editor's comments: The results of this systematic review and meta-analysis are necessarily dependent on the quality of the original investigations. Given that these MV have no associated risk, it seems reasonable to immediately include them in the algorithm for treating SVT given their comparative effectiveness in this meta-analysis. ■

COVID-19 Abstracts

To Mix or Not to Mix COVID-19 Vaccines (and Is It safe to Do So?

Take-home point: Homologous and heterologous booster vaccines both seem to have an acceptable safety profile.

Citation: Atmar R, Lyke K, Deming M, et. al. Homologous and heterologous COVID-19 booster vaccinations. *N Engl J Med*. 2022;386(11):1046-1057.

Relevance: Understanding the safety profile, effectiveness of, and ability to "mix and match" COVID-19 vaccinations will help to guide patients as the pandemic persists.

Study summary: This open-label, nonrandomized, adaptive-design clinical trial was performed in sequential stages at 10 sites in the U.S. Trial vaccines included mRNA-1273 (Moderna, trial stage 1), Ad26.COV2.S (Johnson & Johnson, trial stage 2), and BNT162b2 (Pfizer-BioNTech, trial stage 3) which created nine different combinations of primary vaccinations and boosters.

The authors enrolled 458 participants. They found all booster vaccines were immunogenic (ie, protective) in the participants regardless of which primary regimen they had received. All groups, except for the homologous Johnson & Johnson prime-boost group, had postbooster levels that correlated with 90.7% vaccine efficacy at preventing symptomatic COVID-19. This suggests that homologous and heterologous booster vaccine doses, in any combination, increase protective efficacy against symptomatic COVID-19 infection.

Editor's comments: The authors admit that this trial was not designed to directly compare responses among different booster regimens. There was not an unboosted control group in the study. Study demographics were not entirely representative of the general U.S. population. It seems reasonable to suggest to patients, based on these data, that they needn't worry excessively about which booster shot to get based on the manufacturer of their initial primary series. ■

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Urgent Care Centers Can Reduce ED Referrals for CT Scans in Mild Head Injury with Integration of Brain Activity Biomarker

Urgent message: Referrals to the ED for CT scans were reduced when urgent care providers combined clinical judgment with EEG-based structural injury biomarker results. Such reductions could relieve the burden of referrals to EDs, minimize unnecessary radiation risk, yield better patient experience, and foster to potential cost savings.

TANVIR DARA MD, FACEP; ELIZABETH MCCARTY MD; PAUL MEREDITH MD; ROBERT MOONEY MD; DAVID PORZIO MD; and ALVARO ZEBALLOS MD

Citation: Dara T, McCarty E, Meredith P, Mooney R, Porzio D, Zeballos A. Urgent care centers can reduce ED referrals for CT scans in mild head injury with integration of brain activity biomarker. *J Urgent Care Med*. 2022;16(9):37-40.

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Abstract

Background

Urgent care centers (UCCs) have expanded rapidly, to the point that they now outnumber emergency rooms. Though urgent care is an appropriate setting for initial assessment of mild head injury, many UCCs continue to refer a large percentage of head-injured patients to the ED for CT scanning. Ultimately, most of these are deemed unnecessary. Tools are needed to empower urgent care providers to reduce the rate of mild traumatic head injury referrals to the ED.

Objective

Evaluate the potential to reduce UCC referrals to the ED for head CT scans based on cases entered into a registry of evaluations performed including use of a brain activity-based biomarker (structural injury classifier [SIC]).

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Methods
This was a retrospective study of 963 patients entered into the registry from 24 participating UCCs between June 2017 and September 2020, in whom assessments included the SIC evaluation using the BrainScope FDA-cleared medical device. The percent reduction in ED referrals for CT when using SIC alone, and when integrated with clinical judgment, are compared to three standard referral rates from UCC (50%, 75%, 100%).

Results
For 100%, 75%, and 50% standard referral rates, reductions of 66.5%, 41.6%, and 16.6%, respectively, were seen using the SIC alone. When using both SIC and clinical judgment to make referrals, rates were reduced by 76.3%, 51.3%, and 26.3%, respectively. In addition, performance relative to CT findings based for clinical use integrating SIC with clinical judgment resulted in 100% sensitivity, 77.3% specificity, 32.9% PPV, and 100% NPV.

Conclusion
Significant potential reduction of referrals to the ED from UCC was seen compared to each of the standard referral rates when SIC-EEG-based biomarker was integrated into the initial assessment of head-injured patients. High performance was obtained using SIC and clinical judgment, with 100% sensitivity and 100% NPV compared to CT.

Introduction

The number of urgent care centers (UCCs) is expanding rapidly, to the extent that they now outnumber emergency rooms (EDs) by a wide margin. As such, UCCs have the potential to significantly impact initial assessment of patients with mild head injuries. However, standard assessment capabilities in UCCs result in a large percentage of head-injured patients being referred to the ED for CT scanning.

A study of 3,232 patients transferred from urgent care to the ED showed that most of the patient transfers were deemed unnecessary, resulting in discharge from the ED.[1] Further, of the estimated 4.8 million people who are evaluated in the ED for a traumatic brain injury (TBI), more than 80% received a CT scan; of these, 91% are found the be negative.[2]

Researchers have reported extremely high accuracy in the objective identification of likelihood of traumatic structural brain injury (bleed of 1 cc or greater) using quantitative EEG (qEEG) as input to classifier algorithms derived using machine learning (ML) methods.[3] Use of this structural injury classifier (SIC) as an electrophysiological (EEG) biomarker of brain injury in the ED has been demonstrated to potentially reduce unnecessary CT scans by more than 30%.[4] The use of an EEG-based biomarker could likewise aid in reduction of unnecessary referrals from the UCC to the ED for CT, significantly impacting care of head-injured patients and helping to reduce unnecessary crowding of EDs.

This retrospective study evaluates the potential to reduce UCC referrals to the ED for head CT scans based on the cases entered into a registry from evaluations performed using the SIC.

Data Source

This report is based on registry data which contain deidentified information about the assessments of head injury patients performed at 24 participating UCCs between June 2017 and September 2020. Data were collected on the BrainScope medical device platform using an EEG-based SIC to assess the likelihood of CT positive findings. Patient demographics, output of the SIC classifier, and findings of the CT scan read by a site radiologist or neuroradiologist were entered into the registry for further analysis. Patient data were collected in accordance with site clinical practice and deidentified for entry in the registry. Since the data provided to the registry were not part of any research activity and contained no personal health information, the participating UCCs did not require IRB review.

Methods

The SIC is derived from 1–2 minutes of artifact-free eyes-closed EEG data acquired from a frontal montage (including frontal and frontotemporal scalp regions) and selected associate clinical risk factors associated with TBI. Details of the derivation of the classifier and its independent validation are described by Hanley, et al.[3] Results of the SIC biomarker are reported as *positive* (likely brain injury present visible on head CT; consider further evaluation, including advanced neuroimaging or CT scan), *equivocal* (consider further evaluation or observation, identifies patients close to the positive threshold, much like used in medicine today for "prediabetic"), or *negative* (likely no brain injury visible on head CT). For purposes of the study, an equivocal SIC result was treated as a positive result.

Due to the absence of a standard protocol for triaging head-injured patients in the UCC environment, current referral rates to the ED for a possible CT scan from a UCC vary by site and provider. In this study, comparisons were made assuming referral rates of 100%, 75%, to as low as 50%, with actual rates likely to be at the

Table 1. Percent Reduction in ED Referrals for CT Scans for Clinical Pathways

Assumed Referral Rates to ED/CT	% Reduction in ED/CT Referral: SIC in Isolation	% Reduction in ED/CT Referral: SIC Integrated into Clinical Practice
100%	66.5%	76.3%
75%	41.6%	51.3%
50%	16.6%	26.3%

upper end of this range. All UCC providers used the FDA cleared BrainScope medical device as an adjunct to their usual clinical assessment and ED referral decisions for CT scans.

The analyses will include comparisons between results from clinical assessment with integration of the SIC with each of the assumed referral rates. Analyses will be repeated for the comparison between assumed referral rates and the SIC results had they been used in isolation (without clinical integration). Cases that were not sent to CT from the UCC or for whom no CT was ordered in the ED were deemed CT, and cases with "unknown CT results" were excluded from analyses.

Results

The patient population consisted of 963 patients from 24 urgent care centers. Patients were between the ages of 18 and 85 (mean 36.2 years, SD=16.6), 39.3% male, and were evaluated within 72 hours of injury (mean 20.1 hours). The two most common mechanisms of injury were fall-related (33.8 %), and motor vehicle accident (22.4%).

When UC providers integrated the SIC results with their clinical assessment, only 23.7% (228 of 963) of the patients were sent to the ED for a CT. Had SIC results been used in isolation (without clinical integration) 33.4% (322 of 963 patients) of patients would have been referred for CT. Performance metrics were computed relative to CT findings for traumatic intracranial brain injuries. Based on actual clinical use (SIC integrated with clinical judgment), performance resulted in 100% (13/13) sensitivity, 77.3% (735/950) specificity, 32.9% PPV*, and 100% NPV*. Performance metrics were computed relative to CT findings of TBI.

Not all of the patients who were SIC+ or equivocal were sent to the ED for a CT scan. The majority of those not sent to the ED had equivocal SIC results. Since BrainScope equivocal results indicate patients who were close to the positive result threshold, the addition of clinical judgment to the BrainScope finding can be seen.

Table 1 shows the percent reduction in ED referrals for CT scans had SIC results been used in isolation (middle column), and when integrated into the providers clinical assessment (left column), compared with a range of different estimated referral rates (100%, 75%, or 50%) under current clinical practice.

Discussion

These data demonstrate that use of an EEG-based biomarker (SIC) integrated into the UCC head injury workflow can aid in significantly reducing UCC referrals to the ED for CT. The divergence rate was shown to be as high as 76.3% when integrating BrainScope into clinical workflow assuming that all patients would have been previously sent the ED, and 51.3% with an assumption of 75% previously being sent.

Even at the lowest estimated rate of 50% previously being sent to the ED for head CT scan, reduction would still be 26.3%. Although significant reductions were seen when SIC was used in isolation, the highest reduction rates were seen when providers integrated SIC with their clinical judgment. All demonstrate a significant impact on unnecessary ED referrals from UCC when using the additional information provided by integrating the SIC.

Limitations

A limitation of this study was lack of follow-up on patients sent home from the UCC or the ED to ensure they did not deteriorate or require further neuroimaging. This is being investigated in an ongoing study.

Another limitation was due to the small number of CT+ cases in the sample and thus, the 100% sensitivity reported should be interpretated with caution. This is also representative of the UCC population; the majority of CT-positive patients may not go to a UCC for initial care of a suspected head injury. However, a published paper in an ED population has replicated this finding in a larger group.[4]

Finally, the highest accuracy was found when comparing the SIC with the clinical judgment to CT results. Information as to how the SIC result was incorporated into the clinical assessment of head-injured patients would be helpful in understanding how to optimize the UCC head injury triage.

**Computation of PPV and NPV used an estimated prevalence of 10%.*

Conclusion

There is consensus that the current referral practices to the ED for a CT scan from the UCC need to be reevaluated.[5] Patients with mild head injuries need to be categorized into those who need to be transferred to a higher level of care in the ED and those who can be managed in the UCC environment. Integrating the BrainScope SIC into head injury triage in the UCC environment can provide objective data to help providers with the referral decision.

The utility of the SIC biomarker extends from the UCC to the ED environment, with the ability to aid in the reduction of the number of referrals to the EDs from the UCC. Access to the SIC results may facilitate more objective and reliable decision pathways for the UCC provider, with improved outcomes and better use of resources.

In this registry population of >950 patients, the SIC was demonstrated to have 100% sensitivity and NPV. Significant reduction in UCC referrals to the ED for CT scans was observed when UCC providers combined clinical judgment with the structural injury biomarker result. Such reductions (as high as 76.3%) could relieve the referral burden to EDs, minimize unnecessary radiation risk, yield better patient experience, and lead to potential cost savings. More widespread use of such an EEG-based biomarker as part of head injury assessment can help the UCC provider evaluate and treat a greater proportion of these patients, and could aid in making more confident referrals to the ED. ■

Acknowledgements

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INSIGHTS IN IMAGES

CLINICAL CHALLENGE: CASE 1

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If you would like to submit a case for consideration, please e-mail the relevant materials and presenting information to *editor@jucm.com*.

An 18-Year-Old with Diffuse Abdominal Pain

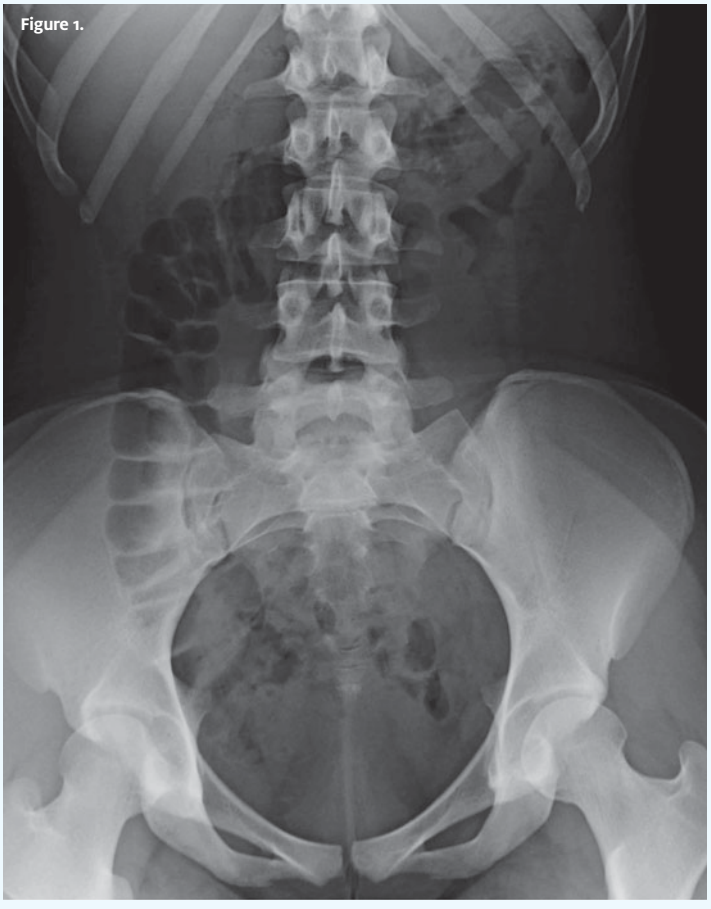

Figure 1.

Case

An 18-year-old male presents to urgent care with widespread abdominal "gas pain" for several days. He denies changes in diet or changes in bowel habits. However, he recalls having a hard collision with another player during a lacrosse game prior to onset of symptoms.

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

THE RESOLUTION

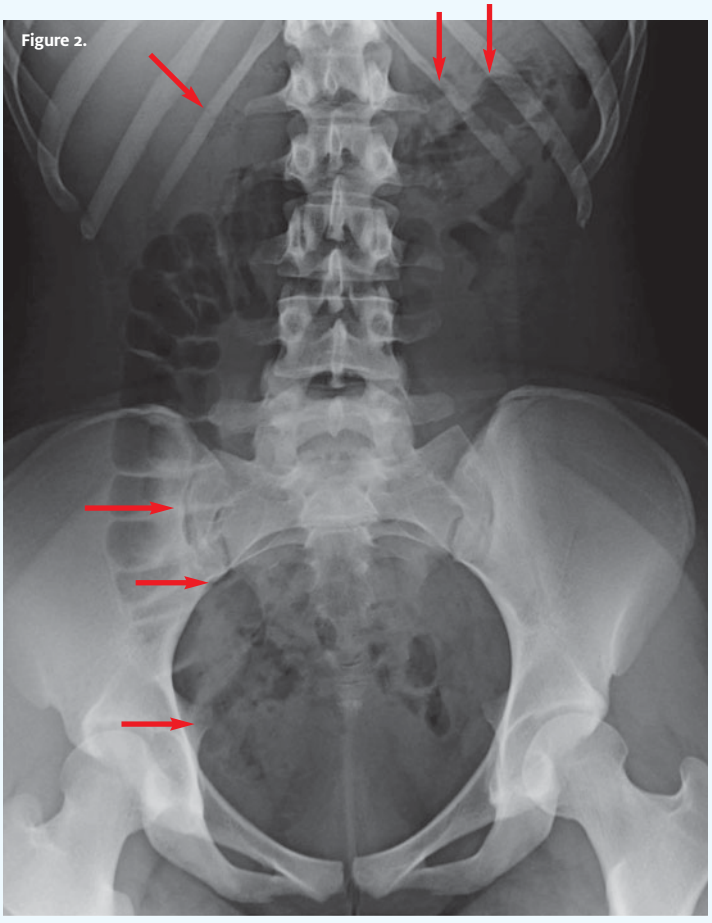
Figure 2.

Differential Diagnosis

- Pneumoperitoneum
- Pneumoretroperitoneum
- Subcutaneous emphysema

Diagnosis

The image shows mottled gas in the right lower quadrant, right upper quadrant along the liver edge, and left upper quadrant around the stomach. The findings are concerning for pneumoretroperitoneum (gas in the retroperitoneal space).

Learnings/What to Look for

- Potential causes include trauma (penetrating wounds, surgical procedures, endoscopy, pelvic fracture), colon perforation (diverticulitis, carcinoma, rectal foreign body) and extension of a pneumomediastinum
- If localized, and with an air-fluid level, retroperitoneal abscess should be suspected and may be associated with the above listed causes or pancreatitis

Pearls for Urgent Care Management

- Pneumoretroperitoneum is best visualized on CT
- Medical management including fasting, hydration, and consideration of IV antibiotics may result in spontaneous resolution
- Surgical management is indicated for larger perforations and more severe illness

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

A 55-Year-Old with a Recent History of Rash


Figure 1.

Case

A 55-year-old female presents to urgent care with a few weeks of a mildly pruritic rash on her trunk and arms. On examination, there are scattered erythematous, fine, scaly plaques. The coin-like plaques are round or oval in configuration and affect her extremities symmetrically.

The patient denies current medications or any personal or family history of dermatologic conditions. She reports no systemic symptoms. However, she shares that she has been taking longer and more frequent bubble baths recently.

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

THE RESOLUTION


Figure 2.

Differential Diagnosis

- Pityriasis rosea
- Allergic contact dermatitis
- Nummular dermatitis
- Pruritus of senescence

Diagnosis

This patient was diagnosed with nummular dermatitis (nummular eczema). Many authorities consider it to be a form of eczema, and some patients may have signs and symptoms associated with classic atopic dermatitis. However, most individuals with nummular dermatitis do not have a personal or family history of atopy.

Learnings/What to Look for

- Nummular dermatitis is characterized by pruritic, coin-shaped, scaly plaques. However, it may be less pruritic than other common diagnoses with scaly plaques (eg, tinea)
- Autoeczematization (widespread eczematous eruption secondary to triggers such as infection or severe localized eczema) and impetiginization (superinfection of impaired skin barrier) may be seen
- While etiology has not been completely elucidated, onset is associated with triggers such as frequent bathing, low humidity, irritating and drying soaps, skin trauma, interferon therapy for hepatitis C, and exposure to irritating fabrics such as wool. Venous stasis may be a predisposing factor to developing lesions on the legs

Pearls for Urgent Care Management

- Hypoallergenic, fragrance-free, over-the-counter creams or ointments for good skin hydration may suffice for mild cases
- Persistent or severe cases may respond to topical corticosteroids
- If a superinfection is present, topical antibiotics may help
- An astringent compress may be employed for weepy, oozy patches

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

INSIGHTS IN IMAGES

CLINICAL CHALLENGE: CASE 3

A 39-year-old Male with Sharp, Nonradiating Chest Pain

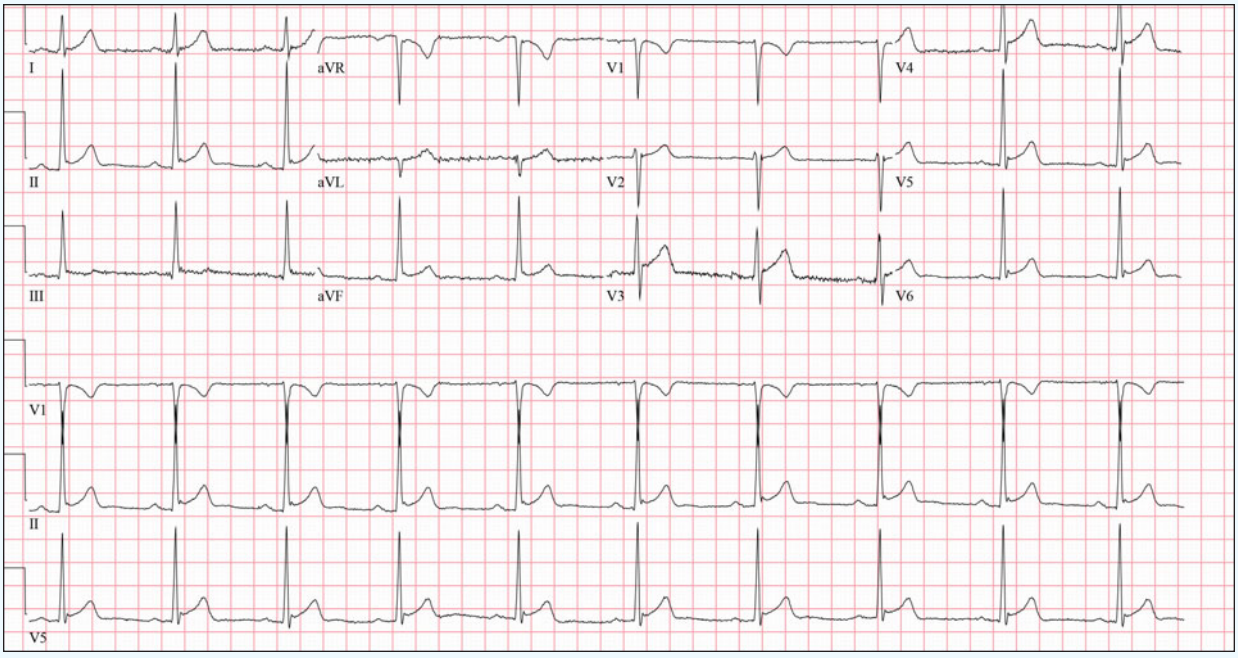

Figure 1. Initial ECG

History

A 39-year-old male with no known past medical history presents to urgent care for evaluation of several hours of sharp, nonradiating, left-sided chest pain. The pain is nonexertional, nonpleuritic, began after his last meal and resolved without intervention approximately 30 minutes prior to arrival. No history of similar pain in the past. No associated shortness of breath, nausea, vomiting, or diaphoresis

View the ECG taken and consider what your diagnosis and next steps would be.

(Case presented by William Chavez, MD, McGovern Medical School, Department of Emergency Medicine, UTHealth Houston.)

THE RESOLUTION

Figure 2. "Fishhook" appearance of early repolarization.

ECG Differential Diagnosis

- Left ventricular hypertrophy
- Hyperkalemia
- ST-Elevation MI (STEMI)
- Early repolarization (ER)
- Pericarditis

Diagnosis

This patient was diagnosed with early repolarization (ER). This ECG reveals a sinus rhythm of 60 beats per minute, with a normal axis and normal intervals. There are mild, concave ST-elevations, most prominent in the precordium, and to a lesser extent the inferior leads. The ST-elevations are proportional to the amplitude of the QRS complex. There are no ST depressions or T-wave inversions. Additionally, J-point notching with a "fishhook" appearance can be seen, particularly in V6 (**Figure 2**). The combination of these findings is consistent with (benign) early repolarization.

ER has traditionally been considered a benign condition, but newer data suggest that its prevalence is higher among patients with idiopathic ventricular fibrillation. It is unclear, however, whether this finding has any significance among asymptomatic individuals.[1] Because of this, nomenclature has shifted from benign early repolarization to, simply, early repolarization or the J wave pattern.

Electrocardiographic features of ER include diffuse ST elevations that are most pronounced in the precordial leads (typically V2-5) and in proportion to the amplitude of the QRS complex. The degree of ST elevation in V6 should be less than 25% the height of the QRS (greater than 25% suggests pericarditis).[2] J point notching (ie, "fishhook") can be seen (**Figure 2**). The T waves should be concordant (same direction as QRS), and there should not be any reciprocal changes to suggest myocardial infarction.[3] When the diagnosis is in doubt, a calculator to help differentiate ER from a subtle anterior ST-elevation myocardial infarction may be useful.[4]

Current guidelines do not recommend direct treatment or other specific action to be taken for patients diagnosed with ER who have not experienced cardiac arrhythmias, syncope, or cardiac arrest. While individuals with ER seem to be at higher risk of ventricular fibrillation compared with the general population, the absolute risk is still extremely small.[1] These patients can be safely discharged.

Learnings/What to Look for

- Electrocardiographic features of ER include:
  - Diffuse ST-elevations that are most pronounced in the precordial leads (typically V2-5)
  - The degree of ST elevation should be less than 25% the height of the QRS
  - J point notching (ie, fishhook)
  - Concordant T waves
  - Absence of reciprocal changes to suggest myocardial infarction

Pearls for Urgent Care Management

- Utilize the clinical history in conjunction with the ECG to identify acute coronary syndrome
- No specific action needs to be taken for patients diagnosed with ER. They can be safely discharged

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Decreasing Denials and Rejections Through Your Urgent Care Operating Model

MONTE SANDLER

A wise person once said, "If a claim is rejected or denied, the energy to get it paid is five times the energy if it went through as a clean claim." Maybe it is only four times or three times the work, but the point is that we should all do everything we can to avoid rejections and denials!

Unlike more complicated specialties subject to complicated coding, authorization, and other factors, in an urgent care setting, the primary cause of downstream work is errors at the front desk during the patient intake process. In fact, over one third of all urgent care denials are eligibility-related, and for many clinics, that ratio is over 50%. Below is a summary of the primary drivers of urgent care denials.

What Is Driving Our Denials?

- Eligibility 34%
- Medical records requests 21%
- Coding 13%
- Credentialing 8%
- OON/No auth 4%
- Other 20%

Not only are eligibility-related rejections and denials the most common, but they are also the most avoidable with strong processes and accurate information available to the front desk staff. Before we explore the recommendations into the avoidance, however, it's important to understand the potential ramifications of ignoring the problem.

According to the Medical Group Management Association (MGMA), the cost of reworking a claim is $25 on average. On the surface, this seems awfully high. It's not as though we are paying someone $25 per hour to work rejections and denials and they only work one claim per hour. The reason this cost is so substantial is because once a claim is rejected or denied, the likelihood of it converting to bad debt increases exponentially.

This can be a compounding problem for those clinics with a higher propensity to create eligibility errors, as increased volumes of downstream work stretch the turnaround time of that work, and timely filing issues therefore present themselves.

An average ratio of rejections + denials is around 10%. Clinics at that average, assuming the MGMA estimated cost of $25 for rework, are potentially adding $2.50 of cost to their business for every patient walking through the door. Whether you consider that in terms of your net reimbursement per visit, patient volume, or both, that extrapolation can be staggering.

So, what can be done to make sure your practice is below that 10% average and to limit the ramifications to your bottom line? The answers are simple, but not necessarily easy to execute.

First, make sure front desk staff develop habits to ensure the basic blocking and tackling happens, without exception. Primarily, that means utilization of your practice management system's real-time eligibility verification module on 100% of applicable visits.

Note, however, that it is not enough to run the eligibility; staff must be versed and educated well enough to know where the potential pitfalls lie within those messages.

The chief example of this is Medicaid. In many states, a majority of Medicaid patients are covered by a Medicaid Managed Care Organization (MCO) as opposed to straight Medicaid. If you are in one of those states, your real-time eligibility message may indicate the patient is active with Medicaid, but that doesn't tell the whole story. It is necessary to know which Medicaid payer covers the patient, whether the ID is the same as their straight Medicaid ID or not, and whether there are any limitations

Monte Sandler is Executive Vice President, Revenue Cycle Management of Experity (formerly DocuTAP and Practice Velocity).

within that coverage. Oftentimes, depending on how comprehensive the payer's eligibility responses are, front desk staff may need to utilize a payer portal to obtain information necessary for a clean registration.

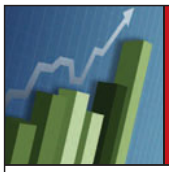
Clinics that have been successful in this regard have ensured their staff have current information at their fingertips, and update that information regularly. What we typically see in medical offices at the front desk is a disorganized catalogue of printouts and sticky notes containing all these rules. Those tend to go overlooked and ignored. Consider building an intranet site with information on what is required specific to your major payers and ensure that is updated regularly. Include guidance on your internal policies for which the front desk staff are responsible. These might include, but are not limited to, your time-of-service collection policies for various types of visits, your credit card on-file policy, and what is required for school or sports physicals, just to name a few.

As mentioned above, implementing this toolset is not a low lift. Those that have been successful with it, though, have dedicated resources to its maintenance and have seen an undeniable return on investment, even during the peak volume surges of the pandemic when adherence to standard protocol was at its most difficult.

"By eliminating all avoidable denials and by taking the extra minute to submit clean claims, you can save yourself five times the energy and make your RCM life a little easier."

Finally, building and maintaining resources to ensure proper registration, and therefore optimize clean claims, is just half of the equation. Success will rely on proper utilization of the tools, so resources must be dedicated to auditing the work that gets performed at registration, with necessary actions and training dictated by those audits.

The bottom line is that by eliminating all avoidable denials and by taking the extra minute to submit clean claims, you can save yourself five times the energy and make your RCM life a little easier. ■



DEVELOPING DATA

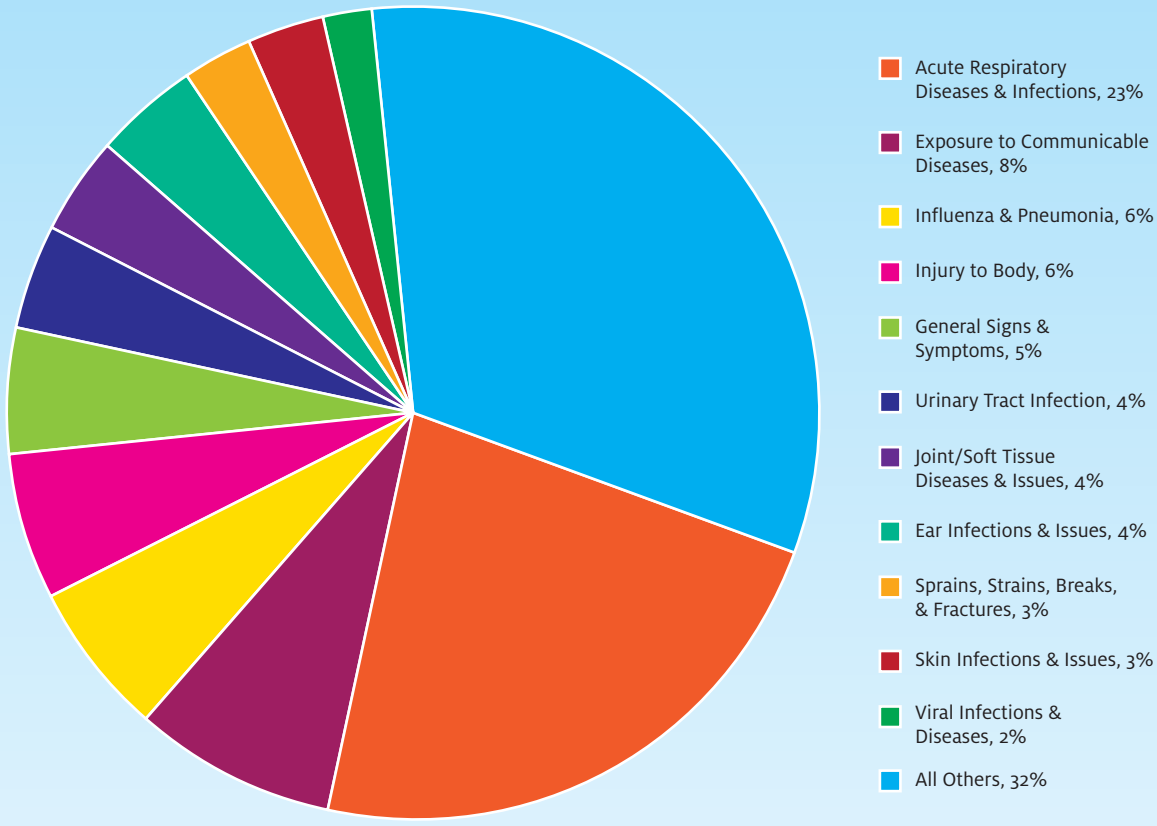
Spoiler Alert: 2020 Saw a New Trend in Urgent Care Data Claims

The effects of the COVID-19 pandemic on healthcare systems around the world has been unprecedented, at least in our lifetimes. The cost in lives and dollars, pounds, euros, yuan, is incalculable at this point, as the pandemic continues. What we can get our arms around, however, is how visits to urgent care centers have been changing as a result.

According to the FH Healthcare Indicators and FH Medical Price Index 2022 report from FAIR Health (which reflects final data on claim line distribution collected for 2020), acute respiratory diseases and infections continued to be the most frequently cited complaint in urgent care. In fact, 2020 was not all that dissimilar from 2019 except for the rise of exposure to communicable diseases—which was the second most common diagnostic category after not even being in the top 10 in the 2019 data. Not surprisingly, the report attributes that meteoric rise to testing and/or treatment associated with COVID-19.

For a deeper look, check out the graph below. Does it jibe with your experience locally?

DISTRIBUTION OF URGENT CARE CLAIM LINES BY DIAGNOSTIC CATEGORY, 2020



Data source: *FH Healthcare Indicators and FH Medical Price Index 2022—A FAIR Health White Paper.* March 31, 2022.

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