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CASE REPORT



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LETTER FROM THE EDITOR-IN-CHIEF

Join Me and Contribute to *JUCM*

It is an absolute honor and pleasure to serve as the new Editor-in-Chief of *The Journal of Urgent Care Medicine (JUCM)*. To begin, I want to thank Joshua Russell, MD, for his incredible work with the journal over the last 5 years. His effort, dedication, and endless hard work have forever changed the direction of *JUCM* and shaped its future. It is my sincere hope to continue his impactful work by publishing meaningful educational pieces and original research to advance the field of urgent care medicine.

I absolutely love urgent care medicine and am grateful that my career turned to this specialty 12 years ago. My passion for this field of medicine is what inspires my interest in advancing urgent care clinical care, advancing urgent care medical education, and advancing urgent care specific research. What we do is unique and powerful,



“Together we can continue to advance the specialty of urgent care medicine.”

meeting the patients where they are, addressing their needs efficiently and effectively, and not missing something critical while providing excellent care.

For those who do not know me, I am currently the Medical Director of Denver Health’s Peña Urgent Care Clinic in Denver, Colorado, where I have been the last 9 years. The clinic is a medium- to high-complexity/acuity Federally Qualified Health Center urgent care clinic with more than 27,000 visits per year within a

safety-net healthcare institution. I am responsible for clinician supervision, clinic operations, nursing/support staff leadership supervision, and collaboration with the greater organization, while I still provide direct patient care. Additionally, I collaborate throughout the organization on other important urgent care topics to improve quality of care, including emerging infectious disease management, antimicrobial stewardship, positive prescriptive policies, value-based care, and improving healthcare access.

Additionally, I am an Associate Professor of Medicine at

the University of Colorado School of Medicine where I am actively involved in urgent care education of future clinicians, including medical students, medical residents, international physician learners, physician assistant students and nurse practitioner students. Over the last decade, I have clinically precepted more than 200 learners. I am also involved in the education of practicing clinicians having given 14 statewide/national webinars to over 2,800 participants in the last 4 years. I am actively involved in research in various urgent care topics including antibiotic stewardship, COVID-19 ambulatory therapeutics, quality improvement, patient-clinician relationship, and care of the underserved patient. I am an author of more than 20 peer reviewed publications in various scientific journals including *JUCM* and have received over \$410,000 in grant funding to support several of my research projects. In my spare time, I enjoy time with my family and visiting the mountains to hike and ski.

I invite every one of you to help advance the specialty of urgent care medicine by contributing and publishing in *JUCM*. We are the only international peer-reviewed journal in urgent care medicine. You are already doing incredible work, so take a little extra time to share that work with the larger urgent care community. This allows us all to improve, learn, and grow from one another while celebrating our incredible successes! If you see an interesting case or present a case conference turn that into a *JUCM* Case Report article. If you give a medical topic presentation or create a clinical topic reference guide, turn that into a *JUCM* Clinical Topic Review article. If you design a clinical workflow that improves patient experience or implement a quality improvement project, turn that into a *JUCM* Brief Report article. If you are performing original research in urgent care, please submit that as a *JUCM* Original Research article.

Additionally, please don’t hesitate to reach out and share your thoughts and ideas with me. Together we can continue to advance the specialty of urgent care medicine. ■

Lindsey E. Fish, MD, FCUCM

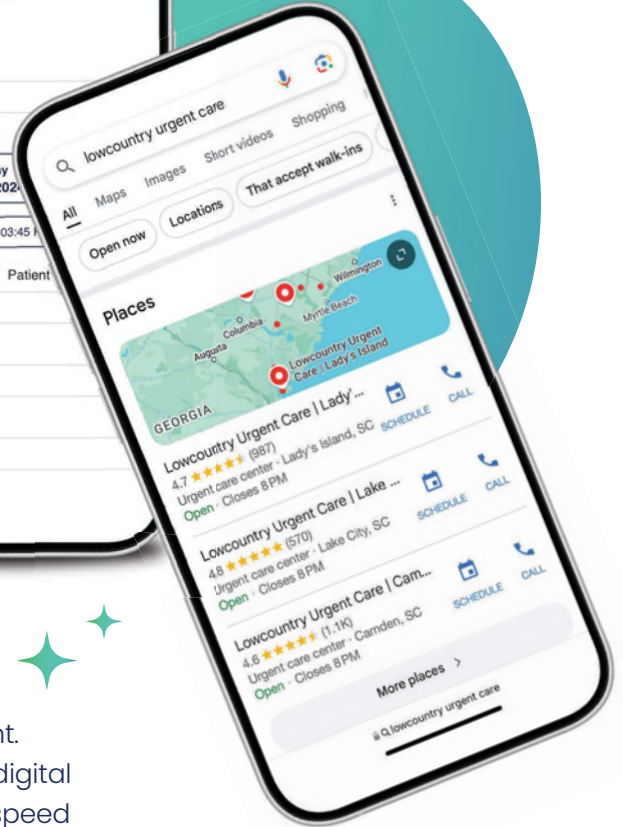
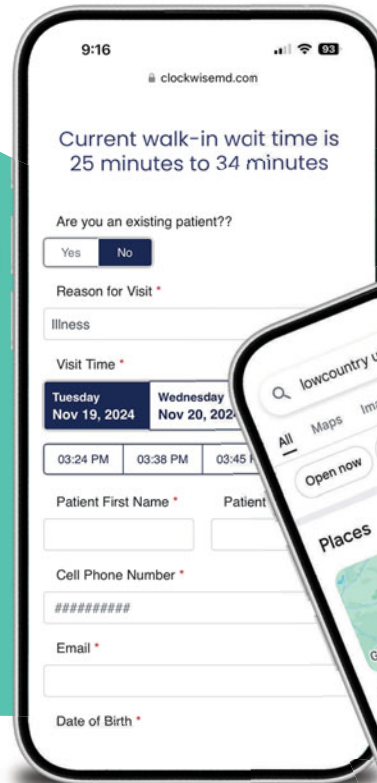
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CASE REPORT

11 Ruptured Baker Cyst is an Uncommon Complication of a Common Diagnosis: A Case Report

Presentation of a ruptured Baker cyst often has similarities to acute deep vein thrombosis. Therefore, urgent care clinicians must be able to differentiate between these diagnoses, understanding that a ruptured Baker cyst may manifest with ecchymosis and swelling over the medial malleolus—the classic crescent sign.

Caroline S. Mifsud, DO, MS; Jennifer Ganzhorn, MD; Michael B. Weinstock, MD; Gregory M. Garrison, MD, MS, FAAFP; Elizabeth Westby, MD

CLINICAL

17 Postpartum Presentations: When Risk Arises After Delivery – Shortness of Breath



Shortness of breath presentations for postpartum patients in urgent care should prompt consideration of venous thromboembolism or peripartum cardiomyopathy, or more benign conditions like deconditioning, bronchitis, or anxiety.

Alexa Bailey, DO; Lauren Kostandaras, DO; Hannah Poorman, BS; Michael Weinstock, MD; Catherine Neal, DO

PRACTICE MANAGEMENT

27 Mental Health Urgent Care: Bridging the Gap in Crisis Care



Meridian Health's Mental Health Urgent Care service addresses the gap between outpatient therapy and hospitalization. As a way to improve access in communities, this model also provides cost savings and convenience for clients.

Katie Nolin, MSc, LMFT, LCADC

PRACTICE MANAGEMENT

31 Private Equity Investment In Urgent Care



Significant events over the past year have recast the market for broader investment in urgent care. Check out JUCM's new list to see how many rooftops have private equity backing today.

Alan A. Ayers, MBA, MAcc

CLINICAL

33 Blocking the Pain: Nerve Block in the Treatment of Headache in Urgent Care



Although greater occipital nerve block has demonstrated positive effectiveness and few risks as a treatment for acute headache, it is not commonly used. With more familiarity, urgent care clinicians may consider it a useful treatment modality.

Elizabeth Reynolds, PA-C, MS

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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, the College of Urgent Care Medicine, and the Urgent Care College of Physicians, *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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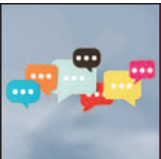
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URGENT INTERACTIONS



“Along my way in training, someone once told me, ‘If it's not in the differential, it's not the diagnosis.’ Thank you to that person! I have said that countless times to hundreds of learners because it is so true in urgent care. Making a complete list of differential diagnoses is critical to minimizing the missed diagnosis.”

— **Lindsey E. Fish, MD, FCUCM**
JUCM Editor-in-Chief



“The big risk is a poor history of present illness. More than 90% of the time, it's what makes the diagnosis.”

— **Michael Weinstock, MD**
JUCM Senior Clinical Editor



“We are excited to begin using the Urgent Care Association's UC Compass as an organization committed to finding the best talent in pediatric urgent care. We look forward to leveraging a platform that enables direct connections with dedicated and skilled providers who share our passion for delivering high-quality, safe, and compassionate care to children.”

— **Roshni Patel MD**, Director of Wellness, DE&I, and Provider Talent Acquisition & Onboarding, PM Pediatric Care



Call for Manuscripts

JUCM accepts submissions on most topics related to urgent care medicine. Following are a few examples of the types of topics that would be of interest to the JUCM audience. If you have a question, please contact us at editor@jucm.com. To submit an article for consideration, access our author guidelines at <https://www.jucm.com/author-instructions>.

- Updates of Psilocybin Use in State Regulated Programs: Benefits and Risks
- Sports-Related Dehydration Diagnosis and Management
- Possible Case of Measles — What Are the Next Steps?
- Evaluation and Management of Coccyx Injuries
- Severe Sunburn Management



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Who's on First?

■ Lou Ellen Horwitz, MA

Urgent Care people would rather drive change than reactively manage its aftereffects. The same is true of all of us who lead the Urgent Care Association (UCA), College of Urgent Care Medicine (CUCM), Urgent Care College of Physicians (UCCOP), Urgent Care Foundation (UCF), Commission on Ambulatory and Urgent Care Quality (CAUCQ), and our regional chapters.

To drive change, you must evolve fast enough to stay ahead, but evolving is usually a messy business. That's been true of UCA and our affiliates too. We've taken a couple of years to really sort out "who's on first" for which initiatives and how we can collaborate most effectively across all of our entities.

I believe we are all coming out of our awkward adolescence – on the association side and across the field. We have figured out who we are, and what we do next is going to be important to the communities we each serve. In honor of this milestone moment, I want to provide clarity about the role of each entity that serves you.

First up, UCA makes sure Urgent Care continues to advance (meaning get better) operationally, and we deal with national-level problems impeding Urgent Care's success.

Next, CUCM is our group whose members include clinicians (physicians, physician assistants and nurse practitioners) in Urgent Care who advocate for all clinical professionals working in Urgent Care. Sometimes that means addressing gaps in practice, and sometimes that means regulatory advocacy.

UCCOP focuses on medical quality, including growing medical research programs and ensuring momentum continues down the pathway to specialty recognition for physicians. They represent physicians both working clinically and leading in Urgent Care, and they have a deeply connected relationship with CUCM, even sharing board members.



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

As our newest group, CAUCQ will continue offering Certification and Accreditation for centers while launching a new, fundamental tier for scope called "Designation." Over time, they will expand into educating both patients and payers.

All 4 of these entities focus on work happening within Urgent Care centers.

Finally, UCF is stepping into its new role as the trusted "educational" voice to the public—highlighting the role, capacity, and value of Urgent Care, while creating and spreading a unifying Urgent Care "brand."

Our regional chapters currently take on pieces of all this work, just at a more local level. We are working with chapter leaders to determine what evolution looks like for them in the years to come.

What all this work has created is a deeper understanding of our individual and shared roles and how we can better leverage our collective power. What we've realized at this stage of the work is that we haven't just been getting clarity on roles, we've been creating a megaphone – an amplifier. With so many official voices to speak on behalf of our field, we believe we can be much louder now than we have been to date.

That's important because one of our main problems in driving change is that we are comparatively small as a field and as an association. We are a mouse trying to change the minds of gorillas. So how do we evolve to seem more like a gorilla ourselves? We do that by leveraging our collective voices in more strategic ways.

Internally (now that we are clear on roles), we are sketching out what "amplification" looks like and how we fully leverage the voices we have.

We are still a young field, but we are out of our awkward adolescence and are ready to own our place in healthcare.

I challenge you to evolve your role in your communities and to step up to whatever microphone you can find to amplify our collective voice. We'll do that same work on your behalf on a national scale.

It's a strange concept to evolve from a mouse into a gorilla, but I have complete faith in our ability to do it together because I have already seen what we can do. ■



CONTINUING MEDICAL EDUCATION

Release Date: July 1, 2025
Expiration Date: June 30, 2027

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.

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2. Review clinical guidelines wherever applicable and discuss their relevancy and utility in the urgent care setting
3. Provide unbiased, expert advice regarding the management and operational success of urgent care practices
4. Support content and recommendations with evidence and literature references rather than personal opinion

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CONTINUING MEDICAL EDUCATION

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Ruptured Baker Cyst is an Uncommon Complication of a Common Diagnosis: A Case Report (page 11)

- 1. Ruptured Baker cysts are more common in patients with which conditions?**
 - a. Inflammatory conditions
 - b. Cardiometabolic conditions
 - c. Pregnancy
 - d. Diverticular disease
- 2. Which of these is a classic finding of a ruptured Baker cyst?**
 - a. Homans sign
 - b. Crescent sign
 - c. Pleuritic chest pain
 - d. Calf pain with passive dorsiflexion of the foot
- 3. Which imaging modality is preferred for diagnosing Baker cyst in order to help rule out deep vein thrombosis?**
 - a. X-ray
 - b. Ultrasound
 - c. Magnetic resonance imaging
 - d. None of the above

Postpartum Presentations: When Risk Arises After Delivery – Shortness of Breath (page 17)

- 1. How much does the risk of venous thromboembolism increase in the postpartum period?**
 - a. 20-25%
 - b. 100-125%
 - c. 200-300%
 - d. 400-500%
- 2. How are cases of venous thromboembolism in postpartum patients managed?**
 - a. Anticoagulation
 - b. Non-steroidal anti-inflammatory drugs
 - c. Hormone replacement therapy
 - d. All of the above

3. Which of the following are symptoms of peripartum cardiomyopathy?

- a. Dyspnea, paroxysmal nocturnal dyspnea, and orthopnea
- b. Peripheral edema
- c. Hemoptysis
- d. All of the above

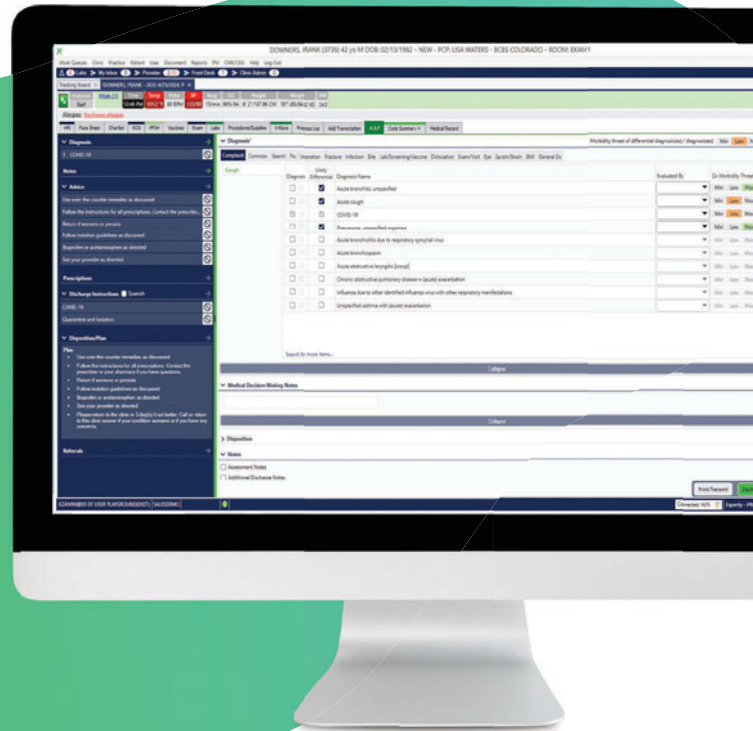
Blocking the Pain: Nerve Block in the Treatment of Headache in Urgent Care (page 33)

- 1. First-line therapies for migraine headache do not provide sufficient relief for what percentage of patients?**
 - a. 10%
 - b. 25%
 - c. 33%
 - d. 45%
- 2. What is a benefit of greater occipital nerve block for headache?**
 - a. Simple to deliver in urgent care
 - b. Reduces pain for most patients
 - c. Reduces recurrence of headache
 - d. All of the above
- 3. Which type of headache is appropriate for greater occipital nerve block?**
 - a. Acute and chronic migraine
 - b. Occipital neuralgia
 - c. Post-dural puncture headache
 - d. All of the above

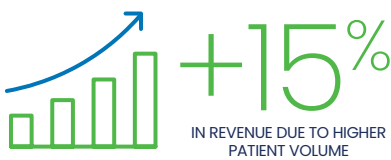
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Ruptured Baker Cyst is an Uncommon Complication of a Common Diagnosis: A Case Report

Urgent Message: Rupture of a Baker cyst is a rare complication and may manifest with the classic crescent sign of ecchymosis and swelling over the medial malleolus. Given the similarities in presentation to acute deep vein thrombosis, it is essential for urgent care clinicians to be able differentiate between these diagnoses.

Caroline S. Mifsud, DO, MS; Jennifer Ganzhorn, MD; Michael B. Weinstock, MD;
Gregory M. Garrison, MD, MS, FAAFP; Elizabeth Westby, MD

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Keywords: Baker Cyst, Ruptured Baker Cyst, Pseudothrombophlebitis, Deep Vein Thrombosis

Abstract

Introduction: Unilateral leg swelling is commonly observed in clinical practice and can arise from various conditions. While some causes may be benign and self-limiting, others can pose significant health risks and may require urgent evaluation and management.

Clinical Presentation: A 69-year-old male presented with 5 days of unilateral leg swelling with associated pain, warmth, and erythema. His past medical history was notable for osteoarthritis and osteoporosis.

Physical Exam: The physical examination revealed significant calf swelling, ecchymosis and tenderness, as well as a palpable mass in the posterior knee.



Diagnosis: An ultrasound revealed a 23 x 2 x 5 cm fluid collection in the medial posterior calf, consistent with a large, complex, ruptured Baker cyst, and was negative for acute deep vein thrombosis (DVT).

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Case Resolution: The patient was treated with conservative management including rest, ice, elevation, and over-the-counter analgesics and was referred to an orthopedic surgeon for evaluation of surgical management of his osteoarthritis. The patient went on to recover without any further complications.

Conclusion: Unilateral leg swelling requires a broad differential diagnosis. Ultrasound can help distinguish between a ruptured Baker cyst and DVT.

Introduction

Unilateral leg swelling is a frequently encountered complaint among healthcare providers. Quickly distinguishing non-urgent causes, such as Baker cyst, from potentially life-threatening causes, such as deep vein thrombosis (DVT), can be challenging, especially in the ambulatory setting. In this case, our patient presented with unilateral leg swelling, warmth, pain, and erythema and was found to have a ruptured Baker cyst, an uncommon complication of a common diagnosis.

Clinical Scenario

A 69-year-old male presented with 5 days of left-sided unilateral leg swelling with associated warmth, erythema, pain, and difficulty with ambulation. He also endorsed left ankle tenderness and swelling, which developed shortly after the unilateral leg pain. He denied any recent injury, trauma, dyspnea, hemoptysis, or history of blood clots. He denied concerns for fever, cuts, or breaks in the skin. He was not on anticoagulation therapy. His past medical history was notable for osteoarthritis of the bilateral knees and osteoporosis.

Physical Exam Findings

Vital signs on presentation included a blood pressure of 124/72 mm Hg and a pulse of 73 beats per minute. He was generally well-appearing. Physical exam of the left lower extremity was significant for a swollen, erythematous calf extending to the Achilles tendon that was painful to palpation with 3+ pitting edema to the patella, and ecchymosis of the popliteal region. There was also swelling, ecchymoses, and pain to palpation of the lateral and medial malleoli on exam. A palpable mass was appreciated in the posterior knee. Dorsalis pedis pulses were 2+ bilaterally. The skin appeared well perfused without evidence of cyanosis or ischemia. Strength and sensation were intact. Homans sign was positive.

Medical Decision Making And Outcome

The patient's symptoms were initially suspicious for a DVT, although other differential diagnoses included tendon rupture, thrombophlebitis, cellulitis, necrotizing soft tissue infection (NSTI), seroma, hematoma, venous insufficiency, fracture, and Baker cyst. Given the patient was afebrile and had no visible wounds or breaks in the skin, cellulitis and NSTI were lower in consideration on the differential.

Due to the pain and swelling of the ankle, an ankle x-ray was immediately obtained to rule out fracture or other underlying osseous abnormality. The x-ray showed significant soft tissue swelling but was negative for fracture (**Figure 1**). The ecchymosis and swelling over the medial malleolus seen on physical exam was consistent with the crescent sign that is characteristic of a ruptured Baker cyst.¹⁻²

Due to concern for DVT, an urgent lower extremity ultrasound was completed, which was negative for acute DVT but did show a 23 x 2 x 5 cm fluid collection in the medial posterior calf consistent with a large, complex, ruptured Baker cyst (**Figures 2 and 3**). This ultrasound effectively ruled out DVT. Lab studies were not obtained as this would not have changed our management.

Evaluation and Management of Baker Cysts

Baker cysts, also known as popliteal synovial cysts, most commonly form secondary to swelling of the gastrocnemius-semimembranosus bursa in the medial aspect of the popliteal fossa.¹⁻² This bursa is located between the tendons of the gastrocnemius and semimembranosus muscles, and it communicates with the knee joint capsule. This communication allows for the flow of synovial fluid between these 2 spaces in a valve-like manner.

As age increases, the integrity of the joint capsule decreases, making it more likely for a popliteal cyst to develop. Popliteal cysts rarely occur in isolation and tend to form when an effusion is present, such as in osteoarthritis, rheumatoid arthritis, or knee joint derangements like meniscus or anterior cruciate ligament tears.³ Ruptured Baker cysts are more common in patients with inflammatory conditions, such as rheumatoid arthritis, than degenerative conditions, such as osteoarthritis.³ Popliteal cysts are most commonly asymptomatic but can rupture on rare occasions, resulting in a clinical presentation that is difficult to distinguish from DVT, leading to pseudothrombophlebitis syndrome.¹⁻² Pseudothrombophlebitis syndrome is a clinical syndrome that mimics

the presentation of DVT but is caused by a different underlying condition, most commonly a ruptured Baker cyst. The incidence of Baker cysts ranges from 5-38%; however, the incidence of Baker cyst rupture in particular is not well characterized in the literature.² Volteas et al. noted that the incidence of Baker cyst rupture is rare in patients with suspected DVT—only 3-4%.⁴⁻⁵

History

Given the similarities in presentation between a ruptured Baker cyst and DVT, it is essential to differentiate between these 2 diagnoses. Inquire about recent injuries or trauma because patients with recent trauma are more likely to have a ruptured Baker cyst as opposed to a DVT. Inquire whether the patient has a history of blood clots or clotting disorders, and whether they are on anticoagulation therapy.

Patients with pulmonary embolism (PE) secondary to a DVT are more likely to present with dyspnea or pleuritic chest pain, whereas patients with a ruptured Baker cyst are unlikely to have these symptoms. Calculating the Wells Criteria for DVT can be particularly useful. For patients with a low pretest probability of DVT, a normal high-sensitivity D-dimer safely excludes DVT, and no further imaging is required. For patients with a high pretest probability of DVT, there is little utility in obtaining a D-dimer, and the clinician should proceed directly to ultrasound.⁶⁻⁸ Patients with a ruptured Baker cyst are more likely to report a history of arthritis, whether degenerative or inflammatory, as well as a possible history of knee injury on the affected side.

Physical Exam

One of the classic findings of a ruptured Baker cyst is the crescent sign, characterized by ecchymosis and swelling over the medial malleolus, which results from fluid in the calf gravitating toward the ankle. In fact, the crescent sign is one of the only ways a ruptured Baker cyst can be distinguished from a DVT.¹ Homans sign, or calf pain with passive dorsiflexion of the foot, can be positive in both ruptured Baker cyst and DVT, and is a nonspecific finding.² Inspection for cuts or breaks in the skin helps to increase suspicion for an underlying infection. Assessment of distal pulses ensures there is no arterial embolism.

Imaging

The most useful imaging modalities for diagnosing a Baker cyst are ultrasound or magnetic resonance

Figure 1. Ankle X-Ray Showing Soft Tissue Swelling



Figure 2. Ultrasound Showing Lower Extremity Longitudinal View Of Complex Ruptured Baker Cyst

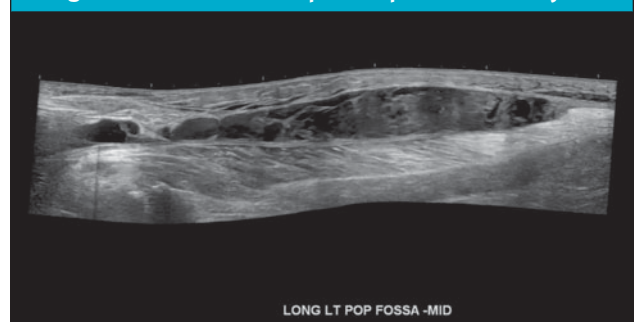
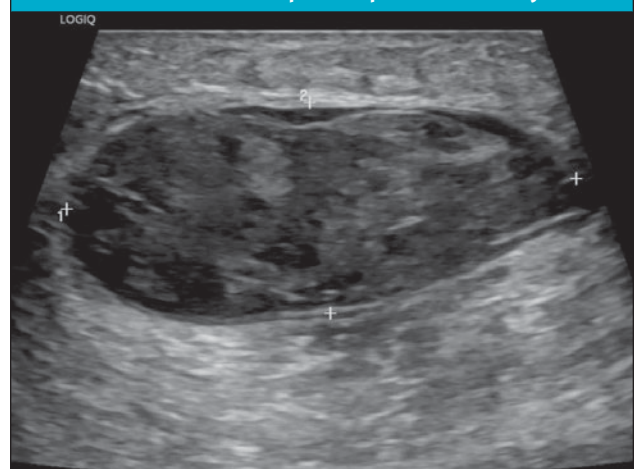


Figure 3. Ultrasound Showing Lower Extremity Transverse View Of Complex Ruptured Baker Cyst



imaging (MRI).^{1,3,5} However, ultrasound is preferred over MRI due to its cost-effectiveness, ease of use, absence of radiation exposure, and greater availability. The main disadvantage of ultrasound is its user-dependence.⁹ On

ultrasound, a Baker cyst can be visualized as a well-defined, unilocular collection of fluid located between the tendons of the medial head of the gastrocnemius and the semimembranosus muscles.³ Evidence of fluid collection along the intermuscular fascia layers is suggestive of a ruptured Baker cyst in particular.^{1,2} It should be noted that although ultrasound is not necessary for a diagnosis of Baker cyst, the utility of imaging lies in its ability to rule out more serious diagnoses such as DVT.

While plain radiographs are easy to obtain and readily available, they do not offer significant diagnostic value in the evaluation of Baker cysts. However, they can provide information about conditions that may predispose someone to a ruptured Baker cyst, including osteoarthritis, inflammatory arthritis, or loose bodies.^{3,9} Previously, arthrography was commonly used to assess Baker cysts; however, this method has fallen out of favor due to its invasiveness and use of ionizing radiation.^{3,9}

Management

The mainstay of treatment for uncomplicated Baker cysts typically includes conservative management for at least 6 weeks, which involves rest, ice, physical therapy focusing on flexibility, and over-the-counter analgesics.⁹ Intra-articular or intracystic aspiration and corticosteroid injections can be considered to help decrease the size and pain associated with the cyst; however, recurrence remains a possibility. Surgical excision can also be considered, but recurrence rates are notably high. In a paper by Rauschnig and Lindgren, they reported that of 46 popliteal cyst excisions performed, cyst recurrence occurred in 63% of cases. Given such high rates of recurrence, they recommended that cyst excision be attempted only in cases where the knee derangement is incurable.¹⁰ It is believed that the high level of recurrence stems from the persistence of the original intra-articular pathology that predisposed the individual to develop the cyst in the first place. Thus, the primary goal of surgical intervention should be to address the underlying intra-articular pathology, which should theoretically decrease the recurrence of the Baker cyst.^{3,9-10} For patients with Baker cyst, monitor and inform the patient about potential complications, such as bleeding and compartment syndrome, especially in those with coagulopathies or those on anticoagulation.

Complications

A handful of cases in the literature have noted rare, life-threatening complications of a ruptured Baker cyst,

including compartment syndrome.¹¹⁻¹³ Other complications include infection, mass effect, or compression of nearby structures.¹³ Additional case reports have noted the development of compartment syndrome secondary to bleeding when a ruptured Baker cyst was misdiagnosed as DVT and empirically treated with anticoagulation.¹⁴ It is possible to have DVT and pseudothrombophlebitis syndrome simultaneously; however, this is incredibly rare.³ In summary, complications are uncommon; however, patients should receive clear discharge instructions and return precautions, including experiencing fever, worsening pain or swelling, paresthesias, dyspnea, or chest pain.

Discussion

The differential diagnosis for acute unilateral leg swelling is broad, ranging from benign to life-threatening. Baker cyst is a common diagnosis, but rupture is an uncommon complication that may mimic a DVT, causing pseudothrombophlebitis syndrome. Although the initial presentation of this patient raised suspicion for DVT, misdiagnosis can lead to ineffective treatment and expose the patient to unnecessary risks. A ruptured Baker cyst mimics DVT and should be distinguished using imaging techniques like ultrasound or MRI.⁵ Ultrasound is preferred due to its lower cost and availability. Baker cysts, whether ruptured or not, should initially be managed conservatively. Surgical intervention may be considered if the patient shows no improvement after about 6 weeks, or sooner if neurovascular compromise is evident.⁹

Clinical Scenario Conclusion

This patient presented with the classic finding of crescent sign, which guided us toward a diagnosis of ruptured Baker cyst. Other clinical findings that favor a diagnosis of Baker cyst rather than DVT include knee pain and swelling, and co-existing degenerative arthritis, such as osteoarthritis. Homans sign, or calf pain with passive dorsiflexion of the foot, can be positive in both ruptured Baker cyst and DVT and therefore is a nonspecific finding.²

The patient was treated with conservative management, including rest, ice, elevation, and over-the-counter analgesics. A sports medicine specialist was consulted, who recommended against aspiration and corticosteroid injection due to the increased risk of infection and high recurrence rates. Given the patient's concurrent osteoarthritis, he was referred to an orthopedic surgeon for evaluation of surgical management. The patient went on to recover without any further complications.

Ethics Statement

The patient provided written consent for the publication of this case and associated figures. Some details of the case were changed to protect patient anonymity and confidentiality.

Takeaway Points

- Consider a broad differential diagnosis in the patient presenting with unilateral leg swelling.
- Rupture is a rare complication of Baker cyst and may manifest with the classic crescent sign of ecchymosis and swelling over the medial malleolus.
- Ruptured Baker cyst should be distinguished from DVT by imaging with ultrasound.
- Baker cysts should initially be managed conservatively for at least 6 weeks. If there is no improvement, surgical intervention may be considered. ■

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Postpartum Presentations: When Risk Arises After Delivery – Shortness of Breath

Urgent Message: Shortness of breath presentations for postpartum patients in urgent care should prompt consideration of venous thromboembolism or peripartum cardiomyopathy, or more benign conditions like deconditioning, bronchitis, or anxiety.

Alexa Bailey, DO; Lauren Kostandaras, DO; Hannah Poorman, BS; Michael Weinstock, MD; Catherine Neal, DO.

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Key Words: Shortness Of Breath, Postpartum, Venous Thromboembolism, VTE, Deep Vein Thrombosis, DVT, Pulmonary Embolism, PE, Peripartum Cardiomyopathy

Editor's Note: The patient case scenario is hypothetical.

Abstract

Background: The postpartum period introduces a broader range of possible diagnoses for shortness of breath complaints seen in urgent care (UC).

Aim: The aim of this review is to enhance clinician familiarity with the diagnosis and management of both common and life-threatening postpartum conditions that may present with shortness of breath in the UC setting.

Conclusion: In addition to the common etiologies of shortness of breath, it is important for UC clinicians to consider other entities in postpartum patients that are summarized in this review, such as venous thromboembolism and peripartum cardiomyopathy.



Background

The postpartum period is variably defined and ranges from 6 weeks to 6 months after delivery.^{1,2} However, the majority of physiologic change and risk is limited to the first 6 weeks postpartum.² Women experience a variety of symptoms and physiologic changes in the weeks after childbirth. Differentiating expected post-

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partum signs and symptoms from pathologic conditions can be challenging for patients (especially first-time mothers) and clinicians alike.³ However, understanding the conditions for which women are at risk after delivery is a critical first step for clinicians who evaluate postpartum patients.

Given that postpartum symptomology may be related to anything from benign physiologic changes to life threatening conditions, it is important for UC clinicians to appropriately balance reassurance and vigilance. Assessment begins with a detailed history and focused physical exam. Vigilance should be exercised while considering and evaluating for serious pathologies. Reassurance becomes clinically indicated only after these have been excluded.⁴

Hypothetical Clinical Scenario

A 36-year-old G2P2 (2 pregnancies, 2 live births) woman presented to UC with her husband 6 days after giving birth to a healthy infant by cesarean delivery (C-section) without complication. She presented with a chief complaint of 2 days of difficulty catching her breath and feet swelling, not associated with increased exertion. She noted having to take breaks and sit down after performing simple tasks like changing her baby's diaper and preparing a bottle for feeding due to shortness of breath.

On exam, her heart rate was elevated to 115 beats per minute, but vital signs were otherwise normal. She was sitting upright on the table. Her abdomen was soft, nontender, and her incision was intact, dry, and without surrounding erythema. Her uterus was firm, nontender, and palpable just below the umbilicus. Her neurologic exam was unremarkable, and specifically her extraocular movements and the remainder of the cranial nerve exam were normal. Her visual fields were intact bilaterally to confrontation. Her patellar reflexes were brisk and symmetric, but there was no inducible ankle clonus.

Her cardiopulmonary exam revealed reduced bilateral breath sounds, and bibasilar rales were present. S1 and S2 were rhythmic, and the rate was tachycardic. Both lower extremities were symmetrical in size and non-erythematous but had 2+ pitting edema.

Shortness of Breath

Within the first 24 hours after delivery, the mother's heart rate begins to decrease, and temperature may be slightly elevated. Deconditioning related to the process of labor may occur immediately after delivery, but shortness of breath that was not present during pregnancy or that worsens after childbirth should prompt immediate medical attention.⁵ There are several diagnoses

specific to the postpartum period that should be considered when a postpartum patient presents to UC with shortness of breath.

Venous Thromboembolism

Epidemiology and Pathophysiology

In the postpartum period, the risk of venous thromboembolism (VTE) is increased 400-500% above baseline.⁶ The hypercoagulability that occurs during pregnancy isn't well understood but is hypothesized to occur due to increased production of thrombin and other pro-coagulant factors that would serve to mitigate the severity of postpartum hemorrhage.⁷ It's estimated that 9.3% of all maternal deaths are caused by VTE.⁶

The epidemiology of deep vein thrombosis (DVT) is somewhat different in pregnant and postpartum patients as well. Peripartum DVTs occur more commonly in the proximal leg veins such as femoral, iliac, or popliteal veins; compared to distal leg veins such as peroneal, posterior tibial, anterior tibial veins in nonpregnant patients.⁶ Peripartum VTE presents as DVT in 75-80% of cases, however, in up to a quarter of cases, the initial presentation is that of pulmonary embolism.⁶ Additional risk factors for postpartum VTE include: prior history of VTE or thrombophilia; delivery by C-section; postpartum endometritis; hypertension; heart disease; autoimmune diseases; obesity; sickle cell disease; pre-eclampsia; and multiple gestation.⁶

History

The symptoms of DVT and pulmonary embolism (PE) are the same in pregnancy and the postpartum period as would be expected in non-pregnant patients, which include, but are not limited to: unilateral leg swelling; shortness of breath; tachycardia; and fever.⁶ However, there are features of pregnancy that can make these symptoms less apparent to patients. For example, some degree of leg swelling/edema is common in normal pregnancy and the postpartum period. Large differences in degree of leg swelling and/or calf or thigh pain complaints, however, should raise suspicion for DVT.

Similarly, physiologic changes in late pregnancy and the early postpartum period can create symptoms of breathing difficulty for patients. The enlarged uterus limits diaphragmatic excursion. However, considering PE in this period is important if the patient's shortness of breath rapidly increases or is associated with chest pain, syncope or near-syncope, or hemoptysis.

Exam

Accurate vital signs are critical in the assessment of

Table 1. Clinical Model for Predicting the Pretest Probability of Deep-Vein Thrombosis ⁹	
	Score
Active cancer (patient treated for cancer within 6 months or currently receiving palliative treatment)	1
Paralysis, paresis, or recent immobilization of lower extremities	1
Major surgery within 12 weeks requiring general or regional anesthesia (vaginal delivery with epidural or cesarean delivery)	1
Localized tenderness along the distribution of the deep venous system	1
Leg swelling	1
Calf swelling > 3 cm compared to other lower extremity	1
Collateral superficial veins (pregnancy can result in varicose veins, which are not considered collateral superficial veins)	1
Alternative diagnosis at least as likely as deep-vein thrombosis	-2
<i>A score of 2 or higher indicates the probability of deep-vein thrombosis is likely. A score of less than 2 indicates the probability of deep-vein thrombosis is not likely.</i>	

Table 2. Wells Criteria for Pulmonary Embolism ¹²		
	No	Yes
Clinical signs and symptoms of DVT	0	3
PE number-one diagnosis OR equally likely	0	3
Heart rate > 100	0	1.5
Immobilization at least 3 days OR surgery in previous 4 weeks	0	1.5
Previous, objectively diagnosed PE or DVT	0	1.5
Hemoptysis	0	1
Malignancy with treatment within 6 months or palliative	0	1
<i>A score of 4 or less suggests PE is unlikely, and a score of 5 or higher suggests PE is likely.</i>		

postpartum patients in whom VTE is being considered. Tachycardia, tachypnea, hypoxemia, and/or hypotension may be present in patients with PE. Fever may also be present in patients with VTE.⁶ In assessing for DVT, inspect the lower extremities for symmetry. A >2 cm discrepancy in calf diameter is considered abnormal.⁶ Additionally, palpate the lower extremities for tenderness, pitting edema, and/or palpable cords.⁶

While PE can cause suggestive changes in vital signs discussed above, it can also present with normal or near-normal vital signs. Examination of the heart and lungs is most commonly normal, although wheezing may be present.

Testing

For postpartum patients (ie, young women recovering from delivery and caring for a newborn), the use of evidence-based decision support tools is critical to minimize unnecessary testing without exposing patients to excessive risk of missed serious diagnoses.⁸

In patients in whom there is a moderate/high clinical suspicion of DVT based on a Wells Criteria for DVT (Table 1),⁹ a venous duplex ultrasound of the affected

leg should be promptly obtained.⁶ A D-dimer should only be used to rule-out a DVT if the patient has a low Wells score. An ultrasound can be repeated in 1-2 weeks if symptoms persist.

The Pulmonary Embolism Rule-Out Criteria (PERC) has gained popularity as a clinical decision instrument for PE risk stratification in recent years. However, PERC has not been validated in pregnant or postpartum patients.¹⁰ The Well's Criteria for Pulmonary Embolism is useful in determining likelihood of PE (Table 2).

The initial testing for PE includes D-dimer and/or computed tomography pulmonary angiography (CTPA), and lung scintigraphy/ventilation-perfusion (V/Q) scanning. A V/Q scan is a diagnostic tool for PE, however, it has fallen out of favor due to increasing numbers of nondiagnostic and inconclusive results.¹¹ It is an option for pregnant patients due to the decreased risk of radiation but has been shown less safe in comparison to CTPA when the patient is at high risk for PE.¹¹

Based on the Wells Criteria for Pulmonary Embolism, a score of 4 or less suggests "PE unlikely," and it is appropriate to rely on a negative D-dimer to rule out PE.¹²

Table 3. Pregnancy-Adapted Geneva Score¹³

	Score
Age 40 years or older	+1
Surgery (under general anesthesia) or lower limb fracture in the past month	+2
Previous DVT or PE	+3
Unilateral lower limb pain	+3
Hemoptysis	+2
Pain on lower limb palpation and unilateral edema	+4
Heart rate ≥ 110 bpm	+5
<i>Patients with a score of 0-3 are classified as having low pretest probability, 4-10 as intermediate, and ≥ 11 as high.</i>	

A Wells PE score of 5 or higher suggests “PE likely” and a negative D-dimer should not be relied upon to exclude PE. For such patients, an immediate CTPA is indicated.¹² The Pregnancy-Adapted Geneva Score (Table 3) has been proposed as a version of the original Geneva score to identify pregnant women with a low, intermediate, or high clinical pretest probability of PE.¹³

Initial Management

Most cases of VTE in postpartum patients will be treated with therapeutic anticoagulation. Heparin is safe in breastfeeding and the postpartum period; a VTE diagnosed in pregnancy or postpartum is treated with unfractionated heparin or low molecular weight heparin.¹⁴

Currently, direct oral anticoagulants (DOACs) are not recommended in pregnant or breastfeeding patients due to the limited evidence of safety.¹⁴ A case study conducted at Ritsumeikan University followed two breastfeeding patients on rivaroxaban.¹⁴ There were no pharmacokinetic concerns in the patient or the infant, suggesting that rivaroxaban could be safe anticoagulation for breastfeeding patients, but more research is needed.¹⁴ If a postpartum patient is not breastfeeding, DOAC therapy would be acceptable.¹⁴

Indications for Referral to Emergency Department

If the patient’s history and physical exam classify them as being high-risk for PE by the Wells Criteria or intermediate-high risk by the Pregnancy-Adapted Geneva Score, they would require a CTPA. If this is unattainable at the facility, the patient should be sent to the emergency department (ED) for emergent testing.

Peripartum Cardiomyopathy

Epidemiology and Pathophysiology

Peripartum cardiomyopathy (PPCM, also called pregnancy-associated cardiomyopathy) is a rare cause of

heart failure (HF) that affects females late in pregnancy or in the early puerperium.¹⁵ A large prospective international registry of 411 females from 43 countries has demonstrated that PPCM occurs globally, affecting females from all ethnicities on all continents.¹⁵ A higher incidence of PPCM is observed in Zaria, Nigeria, and Haiti, whereas a lower incidence of PPCM is seen in Sweden, Denmark, and Japan. The United States incidence of PPCM is roughly 1:1000 to 1:4000.¹⁶ A genetic predisposition may contribute to geographical variability. The higher prevalence in Haiti supports the notion that females in the African diaspora have a higher risk of developing PPCM.¹⁷

The mean age at PPCM presentation is 31 years, and the mean parity is 3.¹⁵ Additional risk factors increase the risk of PPCM: age greater than 30 years; African ancestry; pregnancy with multiple gestation; prior or concurrent preeclampsia; eclampsia; postpartum hypertension; maternal cocaine use; long-term (>4 weeks) of oral tocolytic therapy with beta adrenergic agonists such as terbutaline; and parity ≥ 4 .^{18,19,20,21,22,23}

Whereas no single unifying cause for PPCM has been identified, several contributing pathogenic factors have been identified. Experimental research suggests that in the setting of pregnancy-related maternal cardiovascular changes, these multiple factors result in a common final pathway with enhanced oxidative stress, cleavage of prolactin to an angiostatic N-terminal 16 kDa prolactin fragment, and impaired vascular endothelial growth factor signaling because of upregulated soluble fms-like tyrosine kinase.^{15,24,25,26}

History

PPCM is less commonly seen before 36 weeks of gestation and affects patients most often during the first month postpartum.¹⁵ Most patients with PPCM are diagnosed early after delivery during a readmission. Preg-

nant females with other types of cardiac disease (e.g., ischemic, valvular, or myopathic) may present earlier in the antepartum period coincident with increases in the hemodynamic burden imposed by the gravid state during the second trimester, though they may also present during the third trimester or postpartum.²⁷

Presentation of PPCM is variable and similar to other forms of systolic heart failure (HF) due to cardiomyopathy.¹⁴ The most common symptoms seen are dyspnea, cough, orthopnea, paroxysmal nocturnal dyspnea, peripheral edema, and hemoptysis.¹⁴

“ECG abnormalities may be found in up to 50% of patients with PPCM, but a normal ECG does not exclude PPCM.”

Exam

A thorough cardiopulmonary exam and close assessment of vital signs should be performed. Physical signs of PPCM can include an elevated jugular venous pressure, a displaced apical impulse, a third heart sound, a murmur of mitral regurgitation, and peripheral edema.²⁸ Signs and symptoms of systemic or pulmonary thromboembolism may be present.

Testing/Diagnostic Criteria

The diagnosis of PPCM is based upon 3 clinical criteria: development of HF toward the end of pregnancy or in the months following delivery, absence of another identifiable cause of HF, and left ventricular (LV) systolic dysfunction with an LV ejection fraction (LVEF) generally <45%.¹⁴ An electrocardiogram (ECG) should be performed in all patients with suspected PPCM to detect other conditions in the differential diagnosis such as myocardial infarction and pulmonary embolism. ECG abnormalities may be found in up to 50% of patients with PPCM, but a normal ECG does not exclude PPCM.²⁹ ECG findings in patients with PPCM are non-specific and include sinus tachycardia and nonspecific ST- and T-wave abnormalities.

The ECG generally reveals a global reduction in LV systolic function with LVEF nearly always <45%.¹⁴ Other possible echocardiographic findings include left atrial enlargement, LV or left atrial thrombus, dilated right ventricle, right ventricular hypokinesis, mitral and tricuspid regurgitation, and rarely small pericardial effusion.³⁰

Plasma B-type natriuretic peptide (BNP) measurement is suggested in the evaluation of patients with suspected HF, especially when the diagnosis is uncertain. Females with PPCM typically have elevated BNP levels that are higher than those seen in healthy females during pregnancy or postpartum.³¹ A chest radiograph is not necessary to make the diagnosis of HF or PPCM.

Initial Management

UC providers can initiate supplemental oxygen and assisted ventilation as needed. Treatment of PPCM is generally similar to treatment for other types of HF with reduced ejection fraction. However, several medications used in nonpregnant patients are not safe or do not have sufficient safety data in pregnancy or breastfeeding to support their use. For women with PPCM who have delivered and are not breastfeeding, acute and chronic HF are managed using standard therapy, and patients should be referred to a cardio-obstetrics team.³²

Indications for Referral to Emergency Department

If PPCM is suspected, UC providers should have a low threshold for ED referral for several reasons. One, since the clinical criteria for diagnosing PPCM includes measurement of a LVEF, a rapid ECG needs to be performed. Two, excluding other causes of HF may be necessary, especially if the diagnosis of PPCM is not certain. This work-up may include tests such as CTPA, coronary angiography, or cardiac MRI. Thus, quick referral to the ED is indicated. Additionally, if the patient presents during pregnancy, referral to a cardio-obstetrics team and careful labor and delivery planning may be required.

Other Causes of Shortness of Breath

In addition to the causes of shortness of breath unique to the postpartum period, patients may also experience shortness of breath from asthma, pneumonia, bronchitis, anxiety, deconditioning, obesity, or infections. The list of differential diagnoses for postpartum shortness of breath presentations, therefore, should also include any etiology that might otherwise explain the shortness of breath in addition to the postpartum specific diagnoses discussed in this review.

Clinical Scenario Conclusion

In UC, the patient underwent an ECG and a chest x-ray. A 12-lead ECG revealed normal sinus rhythm, right bundle branch block, a prominent R wave in lead V1, and sinus tachycardia. Anteroposterior chest x-ray showed bilateral pleural effusions.

“If PPCM is suspected, UC providers should have a low threshold for ED referral for several reasons.”

Through history-taking and physical exam, the clinician determined her Wells score for PE was 6. Her Pregnancy-Adapted Geneva Score was 7, classifying her as intermediate risk for having PE. As her Wells score was 6, a negative D-dimer cannot exclude PE, so the urgent care provider did not draw a D-dimer. In the presence of the patient's findings, the provider decided to transfer the patient to the ED to be evaluated for pulmonary embolism and undergo immediate CTPA. The patient was placed on supplemental oxygen, with vital sign monitoring, and the urgent care provider called for ambulance transport to the ED.

Extensive laboratory tests were ordered as part of her initial workup in the ED. Her test results were as follows:

- Arterial blood gas:
 - pH: 7.40 (7.35-7.45)
 - PCO₂: 26.5 (35-45 mmHg)
 - PO₂: 49.8 (75-100 mmHg)
 - SO₂: 84.1 (94-100%)
- CRP: 23.28 mg/L (<0.3mg/L)
- White blood cell count: 22.81 K/ μ L (4.5-11 K/ μ L)
- Hemoglobin: 12.1 g/dL (12-15g/dL)
- Platelets: 652 K/ μ L (150-450 K/ μ L)
- Troponin: 0.354 ng/mL (<0.04 ng/mL)

The CTPA revealed a central filling defect, indicative of a PE, and the patient was started on IV heparin for 24 hours. She was discharged home on enoxaparin as she was breastfeeding.

Takeaways for Urgent Care Providers

- If an urgent care provider has concern for a peripartum VTE or cardiomyopathy, the patient should be immediately referred to the ED for further evaluation and treatment.
- Vital signs in a pregnant/postpartum patient can fluctuate compared to non-pregnant patients due to the physiologic demands of a growing fetus.
- The risk of VTE in the postpartum period is significantly increased above baseline, with a notable portion of maternal deaths attributed to VTE. Risk factors include cesarean delivery, obesity, hypertension, preeclampsia, and prior VTE.

- Symptoms of VTE overlap with normal postpartum changes, such as leg swelling or shortness of breath. Red flag signs include asymmetric leg swelling (>2 cm calf difference), significant leg pain, sudden-onset shortness of breath, chest pain, or syncope. Accurate assessment of vital signs is critical noting any signs of tachycardia, tachypnea, and/or fever.
- For suspected DVT using the Wells criteria as a diagnostic tool, venous duplex ultrasound is first-line for diagnosis. A low Wells score for DVT and a negative D-dimer may eliminate the need for an ultrasound.
- In the case of suspected PE, a Wells score >5 or Pregnancy-Adapted Geneva score >10 requires an urgent CTPA.
- Heparin is typically first-line for anti-coagulation, as DOACs are avoided in pregnancy and breastfeeding.
- PPCM is defined as the development of systolic HF toward the end of pregnancy or in the months following pregnancy, with LVEF generally less than 45% in the absence of another identifiable cause of HF.
- The clinical presentation of PPCM is variable and similar to new onset systolic HF due to cardiomyopathy in the non-pregnant person. Common findings include dyspnea, lower extremity edema, increased jugular venous pressure, and crackles on lung exam.
- An ECG and B-type natriuretic peptide are performed in most patients with suspected PPCM. ■

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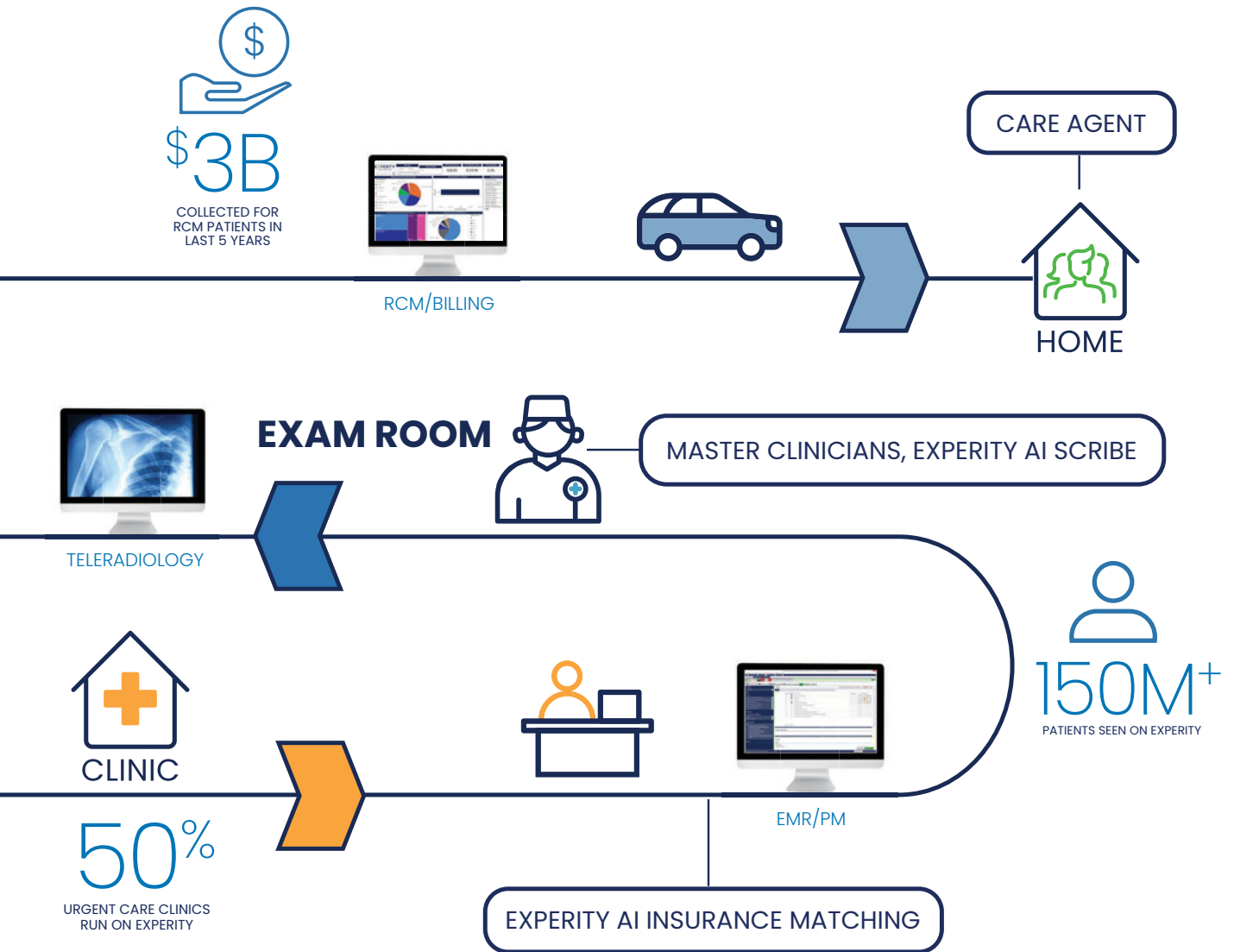
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Mental Health Urgent Care: Bridging the Gap in Crisis Care

Urgent Message: Meridian Health's Mental Health Urgent Care service addresses the gap between outpatient therapy and hospitalization. As a way to improve access in communities, this model also provides cost savings and convenience for clients.

Katie Nolin, MSc, LMFT, LCADC

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In 2024, Meridian Health launched its Mental Health Urgent Care service to address a critical gap in mental healthcare: the space between outpatient therapy and hospitalization. Since the program's inception, we've served 39 clients, primarily addressing depression, anxiety, and addiction. While these numbers may seem modest, they reflect a broader, more complex story about how our community engages with urgent mental healthcare and the challenges that persist in making such care feel both accessible and acceptable.

A New Model for Mental Health Crises

Our Mental Health Urgent Care operates Monday through Friday from 7 AM to 7 PM, and on weekends by appointment, with a staff of licensed clinical social workers, marriage and family therapists, certified professional counselors, and contracted psychiatric medication management professionals. Patients can walk in or schedule same-day appointments, with intake involving a brief triage to assess urgency and needs.

This model allows us to see clients daily until: stabilization occurs; a higher level of care—such as acute psychiatric care or residential treatment—is available; or their established provider—who may be booked 2-3 weeks out or more—can accommodate them. Hourlong visits are capped at \$300. We accept most major insurance plans, ensuring affordability. Without insurance or other funding, 3 visits in our urgent care cost \$900,



and a full week that includes 5 visits (Monday through Friday) costs \$1,500. This is significantly less than other care settings.

- A 72-hour psychiatric “hold” in an emergency department (ED) before admission or discharge can cost \$9,000-\$24,000 for those without insurance and \$500-\$5,000 out-of-pocket for those with insurance.
- One week in an acute psychiatric hospital can cost \$8,400-\$17,500 for those without insurance and \$1,000-\$5,000 out-of-pocket for those with insurance.

Beyond cost savings, our model reduces the anxiety and negative associations many patients experience with ED holds or inpatient admissions, offering a less intimidating alternative for crisis care. For example, a 21-year-old male presented to us in March 2024 with a severe anxiety attack as defined by his Generalized Anxiety Disorder-7 (GAD-7) score of 20. He also had suicidal

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Table 1. Behavioral Health Urgent Care vs Emergency Department Care	
Behavioral Health Urgent Care	Emergency Department
• Difficulty functioning or inability to function (eg, hard to get out of bed, go to work, or do daily tasks) • Suicidal ideation without intent, plan, or means • Challenges or inability to maintain hygiene (eg, brushing teeth, changing clothes, bathing) • Intense or sudden changes in mood • Feeling increasingly agitated or angry • Isolating or withdrawing from others • Stressed or overwhelmed • Anxious • Panicky • Unable to cope	• Experiencing bodily injuries, chest pain, or difficulty breathing • Suicidal intent, plan, or means • Severe self-harm • Homicidal ideation or tendencies • Violent agitation • Psychosis • Stupor or catatonia • Delirium • Substance intoxication or withdrawal symptoms

ideation without intent to attempt suicide, plus distress over his job demands and his justice-system probation status. He had stopped taking his mood stabilizing medications (lithium and lamotrigine). After 4 urgent care sessions, his anxiety lessened to a GAD-7 score of 10, he resumed his medication, and he successfully completed probation, avoiding a situation that might have otherwise resulted in hospitalization.

To guide patients and providers, the table above outlines situations for behavioral health urgent care vs ED care (Table 1).

This framework ensures patients receive care in the most appropriate setting, helping to differentiate EDs or acute psychiatric hospitals as care settings for life-threatening conditions while leveraging urgent care for acute mental health crises.

The impetus for launching Mental Health Urgent Care came from stark observations: EDs are often overwhelmed with mental health cases that don't necessitate hospitalization, while outpatient therapy can have weeks-long waitlists. Community resources like the 988-crisis hotline provide critical support. However, many callers need more than telephonic intervention—they need face-to-face care. Meanwhile, local behavioral health resources, such as community clinics, are often stretched thin, and recent cuts to funding for these programs have left gaps in access. Our urgent care model fills this void, offering a same-day, in-person option that stabilizes patients and connects them to ongoing care.

Societal Disconnect in Prioritizing Mental Health

Despite growing awareness of mental health, we've observed that individuals often reach out in crisis, only to decline scheduled appointments due to conflicts with personal appointments or errands, for example. This

isn't about trivializing their needs—many express genuine distress but struggle to prioritize mental healthcare in the moment. It reflects a broader societal disconnect: the concept of urgent mental healthcare, outside the extremes of therapy or hospitalization, remains unfamiliar. For some, the idea of seeking help without being admitted feels uncomfortable or unnecessary, revealing a need for greater education about what urgent mental healthcare can offer.

This disconnect extends to the insurance industry. Currently, 4 commercial insurance companies allow Meridian Health to contract and bill urgent care codes, but many insurers fail to recognize the critical need for this level of care. In 2019, when our organization met with UnitedHealthcare and Blue Cross Blue Shield to discuss this model, they advised us to prove that their insured members needed this service. This stance ignored the mental health landscape at the time and its dramatic worsening since the COVID-19 pandemic.

In 2019, approximately 20.6% of U.S. adults (~51.5 million) had any mental illness, and 5.2% (~13.1 million) had serious mental illness. At the same time, 14.0% of youth (~3.4 million) experienced major depressive episodes. Additionally, 24.7% of adults reported unmet treatment needs, according to federal data.¹ Suicide rates were climbing (14.2 per 100,000), and ED visits for mental health issues were rising during the pandemic years.^{2,3}

Since the pandemic, the mental health crisis has intensified. Anxiety and depression in adults spiked with 30-40% reporting symptoms during 2020-2021 (from ~11% pre-pandemic).⁴ More than 42% of high schoolers reported persistent sadness or hopelessness, and ED visits for teen girls' suicide attempts increased 50.6% in early 2021 compared to 2019.^{5,6} Substance use disorders

escalated with overdose deaths exceeding 106,000 annually by 2021.⁷ By 2022–2023, adult mental illness prevalence rose to 23% (~59.3 million), youth mental health remained at crisis levels, and demand for services continues to outstrip supply.⁸ The insurance industry's reluctance to cover mental health urgent care may be considered a disservice to members, as mental health needs have grown in severity, prevalence, and complexity, especially among youth, marginalized populations, and healthcare workers.

This lack of support also underscores challenges in health equity when considering how often underserved populations face systemic barriers to care. We have created valuable relationships with local partners like Safe Embrace and the Intertribal Council. These partnerships have been vital to our success, enabling us to provide free or low-cost services to those who might otherwise fall through the cracks.

Safe Embrace connects us with individuals escaping domestic violence, who often need immediate mental health support to address trauma and anxiety, ensuring they receive trauma-informed care in a safe environment. The Intertribal Council facilitates culturally sensitive care for Native American clients, incorporating traditional practices and community-specific solutions into our services. Our model also allows those in rural areas, where mental health resources are scarce, to access care that would not otherwise be available to these populations, bridging geographic and systemic gaps. These collaborations not only sustain our model but also amplify its reach, ensuring care is both accessible and tailored to the unique needs of our community.

Lessons for Urgent Care Providers

As urgent care providers consider integrating or referring to behavioral health urgent care models, several takeaways emerge.

- 1. Fill the Gap with Specialized Care:** Mental Health Urgent Care addresses a critical need for immediate, in-person support that bridges outpatient and inpatient care. Providers can refer patients in crisis to such services, reducing strain on EDs.
- 2. Educate Communities:** Public hesitation to engage with urgent mental health care highlights the need for outreach. Urgent care centers can play a role in normalizing same-day mental health services through community education.
- 3. Leverage Partnerships:** Collaborations with community organizations are essential for sustainability and equity. Partners can provide funding, referrals, and cultural expertise to enhance care delivery.

4. Prioritize Accessibility: Capping costs and offering flexible scheduling make care approachable. Urgent care providers entering this space should ensure affordability and ease of access to attract hesitant patients.

5. Develop Tailored Programs for High-Risk Populations: Urgent care providers should create individualized, programmatic approaches for groups such as those supported by victim services and those frequently involved in the justice system. Understanding the unique needs of specific populations can lead to urgent care programming—such as trauma-informed care or flexible scheduling—that promotes access and reduces recidivism.

Meridian Health's Mental Health Urgent Care is a vital step toward redefining how our communities access mental health support by delivering immediate, compassionate care to those in crisis. The escalating mental health crisis demands action. Urgent care providers must advocate for universal insurance coverage of mental health urgent care codes, while demonstrating the cost-effectiveness and efficacy of this model to insurers. By forging partnerships with local organizations and piloting similar programs, providers can ensure that no one in crisis is turned away, transforming urgent care into a cornerstone of mental health equity and access. ■

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Private Equity Investment In Urgent Care, By Number Of Centers, 2025

Fifteen years after the initial private equity platform investments in NextCare, FastMed, and MD Now, the number of urgent care rooftops backed by private equity has grown to 18% of the nation's 14,423 urgent care centers, as of May 12, 2025.

The total number of urgent care rooftops with private equity investment grew by 11% from 2,359 last reported by JUCM in April 2024 to today's 2,622. Much of this growth has occurred organically and through smaller "bolt-on" acquisitions, as private equity-backed platforms have continued to add locations at a faster pace

than independent and hospital-owned operators.

Significant events over the past year include the 2024 sale of 32 WellNow centers in Ohio to Hometown Urgent Care, Traverse Pointe Partners' 2025 sale of 10 Greater Midwest Urgent Care centers (also in Ohio) to Bon Secours Mercy Health, and the 2025 sale of 18 NextCare centers in Oklahoma and New Mexico to Ardent Health. Hometown is independently owned, whereas Bon Secours Mercy Health and Ardent Health are hospital systems. ■

Private Equity Investor	Locations	Platform Investments
Lorient Capital	467	American Family Care, Midwest Express Clinic
Revelstoke	317	Fast Pace Health
TPG	304	GoHealth Urgent Care
FFL Partners	170	WellStreet Urgent Care
Leonard Green & Partners, Ares Private Equity	165	WellNow Urgent Care
Enhanced Equity Partners	145	NextCare Urgent Care
Shore Capital Partners	111	Community Care Partners
Freeman Spogli	96	CRH Healthcare
Petra Capital Partners, Crestline Investors	85	UrgentTeam
Scopia, Jefferson River Capital	85	PM Pediatrics
Goldman Sachs	75	Xpress Wellness
ICV Partners	70	Urgent Care Group
Trinity Hunt Partners	66	MainStreet Family Urgent Care
Orangewood Partners	61	Exer Urgent Care
Kain Capital LLC	48	My Dr Now
Bain Capital Double Impact	47	ConvenientMD
The Catalyst Group	47	NextLevel Urgent Care
Onex Falcon, Crestline Capital	46	CareSpot Urgent Care
Summit Partners	40	AllCare Primary & Immediate Care
Great Hill Partners	36	Intuitive Health
Iron Path Partners	31	Emergence Health
Sverica International	21	MedFirst Urgent Care
Great Point Capital	19	Little Spurs Pediatric Urgent Care
Seven Hills Capital	16	ExperCare Urgent Care
NewSpring Capital	15	Vybe Urgent Care
Webster Equity Partners	13	MyTown Health Partners
McKinney Capital, Timberline Holdings	8	Urgent Care for Children
Cequel III	7	Springfield Urgent Care
Walnut Court Capital	6	LevelUp MD Urgent Care
City Ventures	3	Midlands Family Urgent Care
Praesidian Capital	2	Care+ Pediatrics Urgent Care

Compiled by Alan Ayers, President of Urgent Care Consultants and Senior Editor of *The Journal of Urgent Care Medicine*, after consultation with investment bankers, private equity partners, and a review of press releases, news articles, and transaction reports as of May 12, 2025. Center counts are courtesy of National Urgent Care Realty.

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Blocking the Pain: Nerve Block in the Treatment of Headache in Urgent Care

Urgent Message: Although greater occipital nerve block has demonstrated positive effectiveness and few risks as a treatment for acute headache, it is not commonly used. With more familiarity, urgent care clinicians may consider it a useful treatment modality.

Elizabeth Reynolds, PA-C, MS

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Key Words: Migraine, Headaches, Nerve Block

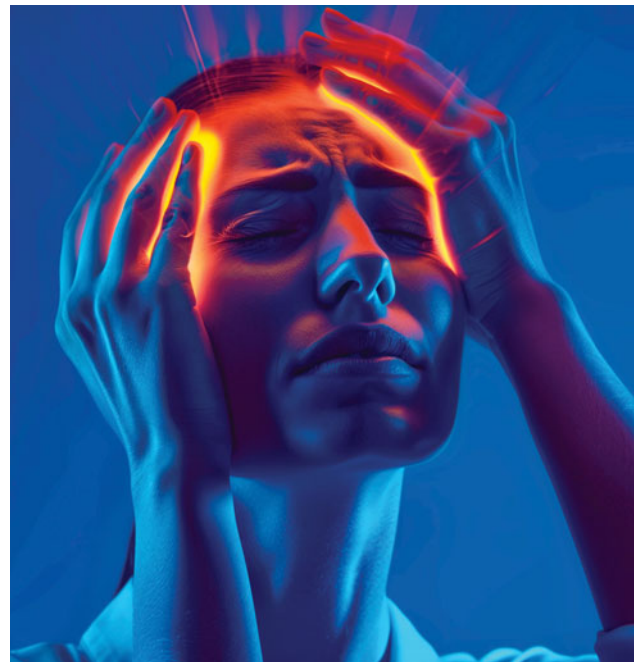
Abstract

Headaches are a common presentation in urgent care clinics. Various medication options are available but can sometimes be limited for use due to allergies, side effects, poor prior treatment response, and contraindications. Multiple studies have shown high success and low risk with a greater occipital nerve block (GONB) for headache, however, this intervention is not commonly used. This article reviews the anatomy, pathophysiology, and recommended techniques for GONB in the treatment of acute headaches.

Introduction

Headaches are one of the most prevalent and disabling neurological complaints globally.^{1,2} Patients often have tried home treatments and interventions before seeking medical attention for an acute headache. Clinicians can use first-line treatments to address migraine headaches, such as metoclopramide, prochlorperazine, or sumatriptan.³ However, the literature suggests that first-line therapies do not provide sufficient relief for more than 25% of patients.^{3,4,5}

Opioids and barbiturates are more commonly prescribed in the emergency department for headaches than non-opioid treatments, even though guidelines



recommend not treating headaches with opioids.^{6,7} As such, clinicians can consider alternative treatment options, such as GONB, which has shown notable success in several studies.^{3,4,5,8,9,10} A GONB is an injection of local anesthetic in the region of the greater occipital nerve on the back of the occipital scalp region.

Greater Occipital Nerve Block

The GONB remains an underutilized treatment option

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Table 1. Nerve Block Medications ^a				
Medication and Strength	Doses (total volume 1.5-4 mL per nerve)	Recommended Average Dose	Half-life (biological)	Notes
Lidocaine 1% (10 mg/mL)	1-2 mL	1 mL if used with steroids 2 mL if only local anesthesia	1.5-2 hours	Local anesthetics can be used in combination. Use 1:1 or 1:3 ratio of lidocaine:bupivacaine.
Bupivacaine 0.5% (5 mg/mL)	1-2 mL	1 mL if used with steroids 2 mL if only local anesthesia	2.7 hours	
Dexamethasone (2 mg/mL)	4 mg	4 mg (2 mL)	36-54 hours	Preferred due to potency, longer duration and can pass through the brain-blood barrier. ¹² Non-particulate corticosteroid.
Methylprednisolone (40 mg/mL)	20-160 mg	20 mg (2 mL)	18-36 hours	Particulate corticosteroid.
Triamcinolone (40 mg/mL)	5-40 mg	10 mg (1 mL)	18-36 hours	Particulate corticosteroid.
Betamethasone (6 mg/mL)	4-18 mg	6 mg (1 mL)	36-54 hours	Particulate corticosteroid.
<i>Recommendation is 1 mL of local anesthetic per 1 mL of corticosteroid.</i>				

for acute headaches, likely due to a lack of knowledge or experience about the procedure.^{1,11} The GONB has consistently shown a clinically significant reduction in pain in more than 80% of patients.^{7,12} Specifically, patients were noted to experience significant pain relief within 30 to 60 minutes after the procedure.^{5,8,13,14} A separate study showed substantial pain improvement in more than 58% of patients within 30-60 minutes.¹⁴ Several randomized controlled trials have demonstrated that GONB is statistically significant in reducing headache pain within 20 minutes with improvements in headache severity lasting up to 24 weeks.^{11,15,16,17,18} Studies have also shown a decrease in headache recurrence and frequency, which lasts significantly longer than the effect of local anesthesia.^{8,9,11,19}

Another randomized controlled trial did not yield significant findings for prolonged headache relief; however, compared to the placebo, participants experienced a reduction in headache frequency and intensity.^{5,15} A number of patients experienced a decrease in migraine pain from baseline after multiple GONB treatments.¹⁴ Additionally, GONB has also been highly successful in treating pediatric headaches, in which other treatment options may be limited. It has reduced headache intensity by more than 50% in pediatric patients with headaches, with minimal to no side effects.^{16,20,21}

GONB can be considered a simple and cost-effective

treatment modality for headaches in clinical settings.^{8,13} The procedure is minimally invasive and does not require specialized equipment, advanced training, or a postprocedure observation period. Patients can often return to their everyday lives immediately, experiencing reduced pain and no restrictions on driving or activity.¹⁸

Potential concerns specifically for urgent care (UC) clinicians may include unfamiliarity with the procedure, optimizing the location of the injection, patient tolerance, or concerns about potential side effects. However, side effects such as local pain, tenderness, or bruising at the injection site are uncommon and mild if they occur. Side effects from GONB using local anesthetics were no different than those of a saline placebo used among a number of studies.¹¹ Additionally, there were no long-term adverse effects from GONB using local anesthetics as noted among studies.^{11,14}

Interestingly, minimal guidelines exist for GONB, despite its use in treating primary headaches dating back to the 1930s.^{2,8,9,22}

In previous studies, the choice of local anesthetic drug, drug dose, volume, pattern, addition of corticosteroids, and frequency of administration have been variable, making it difficult to establish specific recommendations.⁸ More studies have recently been conducted, however, and others are ongoing to further evaluate the evidence.^{23,24,25,26}

Table 2. Recommendations For Greater Occipital Nerve Block ^{8,9,10,11,13,18}	
Condition	Recommendation
• Open skull defect craniotomy • Burr holes • Arnold-Chiari malformation • Shunts • Surgical/nerve stimulators • Inability to sit or lie still	Contraindicated
Anticoagulation	• Individualized for risk vs benefit. • Aspirate before injection to ensure no vasculature involvement. Direct pressure after injection for 5-10 minutes.
Pregnancy	• Use lidocaine only: pregnancy class B. • Bupivacaine and mepivacaine are contraindicated in pregnancy. • Do not use steroids due to the potential risk for fetal effects.
Pain with injection	• Use a topical anesthetic cream or spray. • Avoid moving the needle once inserted. • Use a finer gauge needle.
Dizziness, lightheadedness, syncope	• Consider a reclined or decubitus position for injection.
Allergy to lidocaine	• Use corticosteroids only.

The American Headache Society (AHS) last published guidelines in 2016, which did not discuss nerve blocks.⁴ Subsequent publications by the AHS have found nerve blocks strongly efficacious,^{3,8} and the AHS is developing new guidelines that are anticipated to include recommendations regarding nerve blocks.⁴

Pathophysiology Review

Patients presenting with headaches may often have a trigger point caused by compression of a cranial nerve.²⁷ Abnormal stimulation or triggering of the trigeminal nerve, which sends nociceptive signals to the trigeminocervical complex (TCC), can sometimes cause headaches. The greater occipital nerve is a convenient conduit to the trigeminal and TCC nerves.²⁸

The TCC is one of the neural processing areas in the brainstem, responsible for processing pain signals from the head and neck.¹¹ The intertwined nature of the trigeminal, occipital, and cervical nerves often results in a cause-and-effect cycle that further stimulates abnormal nociceptive signals to the trigeminocervical complex. The pain signals may trigger an inflammatory response around the trigeminocervical complex and brain arteries.²⁹

Functional magnetic resonance imaging studies have shown that GONB reduces nociceptive signals, reducing pain transmission from the trigeminocervical complex to the brainstem.^{29,30,31} This reduction of signals causes

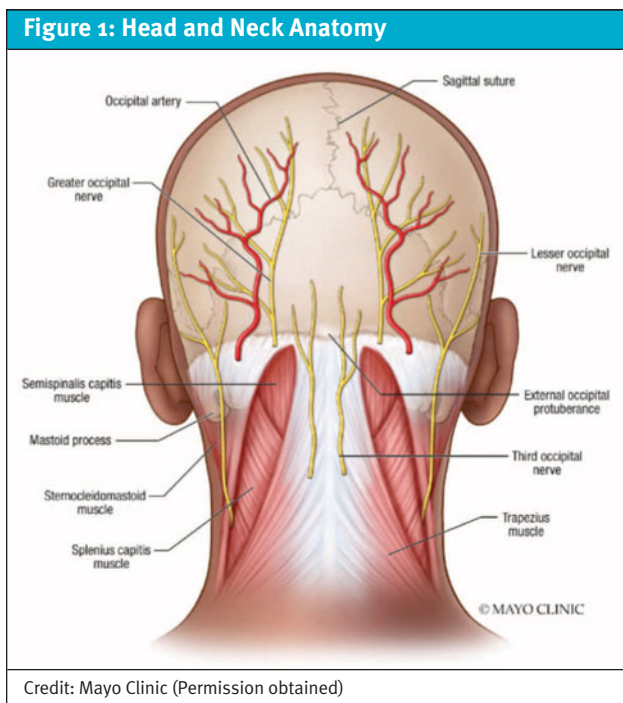
a decrease in neuroinflammatory processes, quickly stopping the pain and the underlying central sensitization.^{16,30,31,32} The nerve block is thought to break the cycle of pain, allowing the nervous system to return to its normal level of neural sensitivity. The prolonged effect of headache pain relief after a nerve block is not well understood or studied but is thought to be due to the interruption of pain modulation.^{8,14}

Indications

GONB is proven effective in the treatment of cervicogenic, acute, and chronic migraine, as well as tension, post-dural puncture, occipital neuralgia, and cluster headaches.^{10,13} GONB can also benefit both pediatric and adult headache patients who may have contraindications to other treatment options, such as patients of older age, patients with vascular disease, pregnancy,³³ patients with kidney disease, or medication allergies.¹³ It is important to note that studies have not found GONB to be an effective intervention for medication overuse headaches and chronic tension headaches.¹⁷

Use of Corticosteroids In Nerve Block

GONB can be administered with only a local anesthetic or with a combination of local anesthetic and steroids.⁸ The results of studies for headaches with the addition of corticosteroid use in GONBs have been conflicting, with some studies showing it may help prolong the



pain nerve signal-blocking effect.^{1,9} However, limited evidence exists on the effect of adding corticosteroids for varying headache types, with equivocal results.^{13,15,17,34} Evidence is strongest to support the treatment of cluster headaches with the addition of corticosteroids.^{1,9,13,16,17,35}

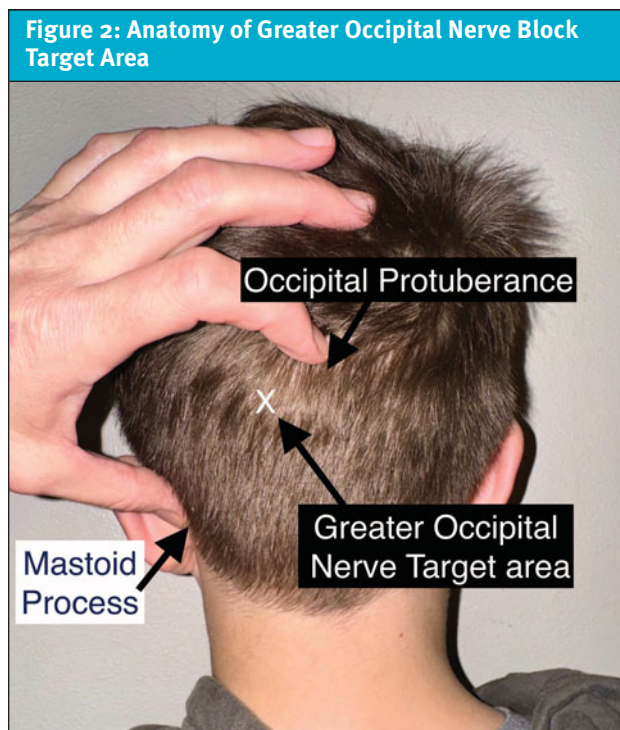
GONB Technique

Equipment

- Gloves
- Alcohol pad, povidone-iodine, or chlorhexidine for skin prep
- 5 mL syringe with 25-, 27-, or 30-gauge needle (½-1 inch length) for injection⁸
- Topical spray anesthetic or topical anesthetic cream, if available and desired
- 2x2 gauze to apply pressure after injection
- Local anesthetic (can combine lidocaine and bupivacaine 50/50 mix or use individually), total volume should be about 4 mL
- Lidocaine 1% without epinephrine
- Bupivacaine 0.5% (avoid in pregnancy)
- If steroids are used, see **Table 1** for steroid options and dosing

Set-up

GONB can be performed on the side of the head or on the bilateral greater occipital nerve areas.



- Evaluate for risk or contraindications (**Table 2**)
- Obtain informed consent from the patient. Include potential risks such as ineffective response, local pain, tenderness, or bruising at the injection site, in addition to accidental injection into an artery, infection, and other possible complications
- Position the patient upright in a chair or on the exam table, leaning forward with the head resting on a table or pillow. The patient can also lie supported in a prone position or lateral decubitus with the back of the head easily accessible to the clinician. Studies indicate no significant difference in position on the effect of treatment but find that a sitting position may slightly improve outcomes.³⁶ Some patients may benefit from a supported position or can lie down after the procedure for monitoring if they are prone to vasovagal reactions.
- Identify the area of the greater occipital nerve (GON), which can be found by palpating the occipital protuberance and the mastoid process (**Figure 1**). Draw an imaginary line between the 2 areas, and the GON can be found about one-third of the way down from the occipital protuberance along this line (**Figure 2**).³⁷ The GON is often about 2 cm lateral and 1.5-2 cm below the occipital protuberance.^{2,37} If needed, this area can be marked with a skin marker for visual reference. The occipital ar-

tery can sometimes be palpated lateral to this area.³²

- Some clinicians also will palpate to find areas of tenderness, which can also indicate the region of the GON. The nerve block can still be done even if the area is not tender to palpation. Focal pain does not predict a better response to the nerve block.³⁸

Procedure

- Once the area of GON has been identified, apply topical anesthetizing cream if using. Allow it to penetrate for 5-10 minutes, depending on the formulation's specific instructions.³⁹
- Prepare the area with a topical cleanser, such as an alcohol pad, chlorhexidine, or povidone-iodine wipe.
- If using a topical numbing spray, apply it to the area. Insert a needle perpendicular to the skin until it encounters firm resistance (periosteum) at approximately 3-4 mm.⁸ If there is no bone contact within 1 cm of needle insertion, redirect the needle slightly toward the top of the head.³⁷
- Once bone contact is noted, withdraw the needle slightly, approximately 1 mm, and pull back on the plunger to ensure it is not in an artery. Then inject slowly in a fan-like distribution towards the areas of increased pain.^{7,8,37} There might be a burning sensation as the anesthetic is injected, which should subside in a few minutes or less.¹⁰
- There is variability in the path of the GON, so a fanning of the needle to cover a larger area or a higher volume of local anesthesia can increase the success of the GONB.^{7,8}
- Remove the needle, apply pressure to the area, and gently massage the anesthetic to distribute it evenly throughout the nerve area.²⁰
- There will often be subsequent numbness in the distribution of the greater occipital nerve with a successful block.³²

Postprocedure Monitoring

After the procedure, monitoring is case-specific. Many patients will note rapid pain improvement. Most patients will not require postprocedural monitoring, however, it can be helpful to assess the response to determine the presence of side effects. Numbness may be noted in the area of the nerve dermatome and can indicate a successful nerve block. The lack of dermatomal numbness does not necessarily indicate a failed block.^{10,32} Side effects from the injection are uncommon, but patients can be cautioned about the rare potential for dizziness, syncope, worsening headache, nerve or

arterial injury, hematoma, pain, swelling, or redness at the injection location.^{8,39}

Patients often experience a long-term reduction in pain beyond the duration of anesthetics and corticosteroids, as well as decreased frequency of headaches and need for rescue medications.^{11,17,26,39}

Hypothetical Case Scenarios

Case 1

History: An otherwise healthy 32-year-old female with a history of migraine headaches presented to urgent care for a left-sided migraine headache for 24 hours. She had taken zolmitriptan and ibuprofen 4 hours earlier without relief. She had no new or worrisome symptoms different from prior migraines. She reported accompanying symptoms of photophobia, nausea, phonophobia, and dizziness. Her headache pain scale was 5/10.

Her past medical history is notable in that she has never had GONB. Her usual migraines last about 12 hours and are often improved with sleep. She has been seen in the clinic a few times prior for migraine headache treatment.

Physical exam: Her vital signs were as follows: blood pressure, 136/72 mmHg; pulse, 78 beats per minute; respiratory rate, 18 breaths per minute; temperature, 97.2°F/36.2°C; and SpO₂, 99% on room air.

She was sitting in a dark room, looking uncomfortable. She had some tenderness along the left posterior scalp and occipital insertion. She did not have any temporal artery tenderness or temporomandibular joint pain. No scalp swelling or abnormality was present. Her pupils were equal and reactive to light. Fundoscopic examination showed a normal appearance of the retina, without papilledema. No neck stiffness or midline cervical neck pain was present. Cranial nerves 2-12 were intact, and bilateral upper and lower deep tendon reflexes were normal. She had no notable motor or neurological deficits on the exam. She demonstrated normal gait and movement.

Treatment: A left-sided GONB using 2 mL of 1% lidocaine and 2 mL of 0.5% bupivacaine was administered, with significant improvement in her pain within 15 minutes. She did not require further intervention.

Case 2

History: A 24-year-old female presented to urgent care with a history of episodic migraines, which progressed to daily headaches for the past 2 weeks. She is currently 6 weeks pregnant. Her headache was over the right occipital and temporal region, with tenderness noted in

the affected area. She was experiencing nausea, vomiting, and photophobia. She had previously been on topiramate for migraine prophylaxis but discontinued use due to her current pregnancy. She did not exhibit any new symptoms from her typical migraine. Her pregnancy had not had any complications or concerns.

Physical exam: Her vital signs were: blood pressure of 118/68 mmHg; pulse of 82 beats per minute, respiratory rate of 16 breaths per minute, temperature was 98.4°F/36.8°C; and SpO₂ was 100%. She was holding an emesis bag and appeared uncomfortable, holding her head. She had a normal physical exam with no temporal artery tenderness, no temporomandibular joint pain, and no scalp swelling or abnormality. Her pupils were equal and reactive to light. Fundoscopic examination showed a normal appearance of the retina without papilledema. There was no neck stiffness or midline cervical neck pain, however, she noted tenderness along the paracervical neck muscles. Cranial nerves 2-12 were intact, and bilateral upper and lower extremity deep tendon reflexes were normal. She had no notable motor or neurological deficits on the exam. She demonstrated normal gait and movement.

Treatment: After discussion of various treatment options, she was given a bilateral GONB using 4 mL of 1% lidocaine without epinephrine with successful relief of her pain within 30 minutes.

Case 3

History: A 58-year-old male with a history of cluster headaches presented to urgent care for an ongoing right-sided severe headache for the past hour. He had 2 prior cluster headache attacks over the past 3 days. His pain was over the right peri-cranial area, and he described stabbing pains. He is on verapamil for prophylaxis. Prior intracranial imaging has been normal.

Physical exam: His vital signs were: blood pressure of 146/88 mmHg; pulse of 98 beats per minute; respiratory rate of 22 breaths per minute, temperature of 98.2°F/36.7°C, and SpO₂ of 97%. He was restless, pacing the room, and appeared very uncomfortable. He was noted to have conjunctival injection, eye watering, and right-sided nasal congestion. He was tender over the right peri-cranial and GON area.

Treatment: He was placed on high-flow oxygen therapy and received a right GONB with 1.5 mL of 1% lidocaine, 1.5 mL of 0.5% bupivacaine, and 1 mL of 40 mg/mL methylprednisolone. He had notable relief of his headache within 30 minutes and was discharged home in stable condition.

Takeaway Points

- The GONB is a simple and minimally invasive procedure for treating headaches with minimal side effects.
- Patients who cannot tolerate other therapies (or for whom different treatments are contraindicated) can often receive a nerve block.
- GONB has been proven through randomized controlled trials to reduce headaches within a short period with minimal systemic effects.
- Patients often experience a long-term reduction in pain beyond the duration of anesthetics and corticosteroids, as well as decreased frequency of headaches and need for rescue medications.
- Clinicians are encouraged to consider this technique as an effective treatment option for headaches in acute care settings. ■

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ABSTRACTS IN URGENT CARE

AI Performs Well in Virtual Urgent Care Visits

Take Home Point: This study indicates that an artificial intelligence (AI) algorithm was better at adhering to clinical guidelines and identifying critical red flags during virtual urgent care (UC) consultations, while physicians were better at adapting recommendations to changing information obtained during a patient consultation.

Citation: Zeltzer D, Kugler Z, Hayat L, et al. Comparison of Initial Artificial Intelligence (AI) and Final Physician Recommendations in AI-Assisted Virtual Urgent Care Visits. *Ann Intern Med.* 2025;178(4):498-506. doi:10.7326/ANALS-24-03283

Relevance: This study focused on AI's recommendations for diagnosis and management in a virtual urgent care setting, whereas most previous data and existing studies focus on AI's performance on narrow tasks and not its ability to support diagnosis and management.

Study Summary: This was a retrospective cohort study using data from Cedars-Sinai Connect (CS Connect), a virtual primary and urgent care clinic. Patients initiated visits by entering clinical concerns into virtual structure online chat and an algorithm using this information and data from the patient's electronic health record (EHR) provided initial feedback about conditions with related symptoms (diagnosis). The patient could then initiate a virtual consultation with a physician. An AI algorithm also suggested management recommendations for treating physicians, including medication, diagnostic tests, and referral options. The physician providing care had the ability to review AI recommendations, however, it is unknown if they did so. Study analysis focused on common conditions such as respiratory, urinary tract, vaginal, eye, and dental illnesses. Following the visit, cases were reviewed by 4 experts specializing in internal, family, and emergency medicine.

During the study period, 1,023 visits were made, and 461 cases were analyzed. The mean age of patients in the

study was 45.3 years and 70.2% of the patient were female. The authors found physician decisions were classified as concordant with AI recommendations in 262 cases (56.8%). Of the non-concordant cases, across all symptom types, AI recommendations were rated higher than physician decisions in 14.4% to 40.8% of cases. The highest proportion was observed in urinary symptoms with 40.8% rating AI better (confidence interval [CI], 33.9% to 48.2%) compared with 9.2% rating physicians better (CI, 4.8% to 16.8%). Examples of optimal AI recommendations include ordering urinalysis and urine culture instead of treating empirically in a patient with recurrent urinary tract infections. However, physicians were rated better in 36% of all cases. The primary reasons for physician superiority included avoiding inappropriate emergency department (ED) referrals (8.0%), better handling of evolving or inconsistent patient-reported histories (6.2%), and making necessary in-person referrals.

Editor's Comments: The physicians in the study had the ability to view the AI recommendations prior to and during the virtual consultation, however, it was uncertain if they followed any of the recommendations. Of the initial study cohort, AI withheld recommendations in 133 cases (13%), thus requiring human intervention for the consultation. The single-center design, mostly female participation, and limited category of symptoms limits the generalizability of these findings. Additionally, the small sample size limits the ability to evaluate for potential algorithmic bias. However, AI's better adherence to guidelines around recurrent urinary infections and antibiotic stewardship in upper respiratory tract infections does hold promise for potentially incorporating AI into virtual urgent care consultations to promote better clinical decision making by UC clinicians. ■

Oral Cephalosporins for Treatment of Acute Pyelonephritis in the Emergency Department

Take Home Point: This study noted that there was no difference in rates of pyelonephritis treatment failure in emergency department patients treated with cephalosporins versus guideline-endorsed antibiotics (fluoroquinolones, trimethoprim-sulfamethoxazole) who were discharged home.



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Citation: Koehl J, Spolsdoff D, Negaard B, et. al. Cephalosporins for Outpatient Pyelonephritis in the Emergency Department: COPY-ED Study. *Ann Emerg Med.* 2025 Mar;85(3):240-248. doi: 10.1016/j.annemergmed.2024.10.013

Relevance: Since the Infectious Diseases Society of America (IDSA) publication in 2010 of guidelines for the treatment of acute pyelonephritis and urinary tract infection (UTI), *E. coli* resistance levels to both fluoroquinolones and trimethoprim-sulfamethoxazole (TMP-SMX) have doubled. Identifying alternative treatment strategies will help with reducing antimicrobial resistance (AMR) in the general population.

Study Summary: This was a multicenter, retrospective observational cohort study at 11 geographically diverse, U.S. hospital EDs. The authors identified patients from ICD-10 coding who were treated and discharged home with uncomplicated pyelonephritis after an ED visit. The study's primary outcome was the rate of treatment failure of cephalosporins compared with IDSA guideline-endorsed first-line treatments (fluoroquinolones, TMP-SMX) at 14 days. Treatment failure was defined as recurrence of urinary symptoms, repeat ED visit or hospitalization for a urinary tract infection, or receipt of a new antibiotic prescription for urinary tract infection.

The authors identified 851 patients for analysis, 647 in the cephalosporin group, and 204 in the fluoroquinolones/TMP-SMX group. They found no significant difference in treatment failure in the cephalosporin group compared with the fluoroquinolones/TMP-SMX group (17.2% of cephalosporin vs 22.5% of fluoroquinolones/TMP-SMX group; difference=5.3%, 95% CI, -0.118 to 0.01). There was no significant difference in treatment failure in patients who received shorter courses than recommended by the IDSA guidelines in the cephalosporin group (<10 days - 18.0% vs ≥10 days - 16.6%, 95% CI, -0.046 to 0.074), fluoroquinolone group (<7 days - 33.3% vs ≥7 days - 25.0%, 95% CI, -0.171 to 0.338), or TMP-SMX group (<10 days - 22.7% vs ≥10 days - 15.4%, 95% CI, -0.085 to 0.231).

Editor's Comments: There are several confounding factors that were not taken into consideration by the authors, which include distinguishing patients who received only oral antibiotics compared to those who received a dose of intravenous medication prior to discharge and whether patients were seen in other facilities prior to presentation at the study facility. Issues surrounding the bioavailability of certain cephalosporins based on which cephalosporin was prescribed (ie, cefpodoxime or cefdinir) were not in-

vestigated. An additional factor that was also not considered was the lack of adherence to the IDSA guidelines by the disproportionate number of patients in the cephalosporin group compared to that of the fluoroquinolones/TMP-SMX group at a rate of 3:1, which suggests a shift of practice that already acknowledges the rise of AMR in the population. ■

Can We Treat Toddler's Fractures in a Walking Boot?

Take Home Point: Results of this study suggest that a removable boot (RB) without physician follow-up was non-inferior to casting in patients with toddler's fracture (TF) regarding pain at 4 weeks postinjury.

Citation: Boutin A, Colaco K, Stimec J, et. al. Removable Boot vs Casting of Toddler's Fractures: A Randomized Clinical Trial. *JAMA Pediatr.* 2025 Apr 21:e250560. doi: 10.1001/jamapediatrics.2025.0560

Relevance: Toddler's fractures are one of the most common lower limb injuries sustained by young children and presently treated with traditional casting and fracture clinic follow-up, which has potential for complications. With the emerging shift towards splinting for upper limb injuries, could this be a similar therapeutic strategy for managing TF?

Study Summary: This was a pragmatic, multicenter, assessor-blinded, 2-arm, noninferiority randomized clinical trial to determine if RB without scheduled physician follow-up was noninferior to casting with respect to pain scores measured at 4 weeks postinjury in children with radiograph-visible TF based in 4 Canadian tertiary children's hospitals. Patients were randomly assigned in a 1:1 ratio to receive RB or casting. At 4 weeks, following removal of the immobilization device at least 1-week prior to the appointment, enrolled participants received a virtual visit, where blinded assessors observed the child and determined the Evaluation Infant Douleur (EVENDOL) pain score during ambulation.

In all, 129 children were recruited into the study: 65 in the RB group; and 64 in the cast group. Of these, 118 children (92%) completed the 4-week follow-up. The mean (SD) EVENDOL pain score was 1.21 (1.54) in the RB group and 1.76 (2.13) in the cast group (difference, -0.55; 95% CI, -1.23 to 0.13). At 4-weeks post injury, a higher proportion of patients had returned to baseline activities "almost all of the time" in the RB (77%) vs cast group (41%) (differ-

ence 36%; 95% CI, 9%-63%). Both groups had skin complications, which were slightly higher in the RB group but not statistically significant (72% versus 50%, difference 22%; 95% CI, -6% to 50%).

Editor's Comments: There was no blinding of the caregivers, which had the potential to lead to some reporting bias. There may be some limited generalizability of the study population due to its recruiting methodology of patients presenting to a tertiary children's hospital. This study does show the possibility for some changes in UC practice and moving toward a "less is more" approach. UC clinicians are advised to follow their local orthopedic protocols for follow-up. This topic of research could be replicated in an urgent care setting to determine if similar results are seen. ■

Non-Surgical and Non-Interventional Treatments For Lower Back Pain

Take Home Point: This is a systemic review and meta-analysis of randomized controlled trials that compared active pharmacologic and non-pharmacologic treatments against placebo in the treatment of acute nonspecific low back pain. Non-steroidal anti-inflammatory drugs (NSAIDs) were found to be the only treatment that was efficacious when compared to placebo.

Citation: Cashin A, Furlong B, Kamper S, et. al. Analgesic effects of non-surgical and non-interventional treatments for low back pain: a systematic review and meta-analysis of placebo-controlled randomised trials. *BMJ Evid Based Med.* 2025 Mar 18;bmjebm-2024-112974. doi: 10.1136/bmjebm-2024-112974.

Relevance: Lower back pain is a common presentation with a majority classified as non-specific causation. Cases are projected to increase in the coming years. Identifying appropriate and efficacious therapies will help UC clinicians in these types of consultations, including management of patient expectations.

Study Summary: This was a systematic review and meta-analysis of presently available published evidence of randomized placebo-controlled trials of non-surgical and non-interventional treatments for patients with nonspecific acute and chronic low back pain. The authors performed searches using the PRISMA (Preferred Reporting Items for

Systematic reviews and Meta-Analyses) guidelines. Studies included non-surgical and non-interventional treatments that aimed to improve pain. All analyses were grouped by intervention class (pharmacological or non-pharmacological intervention) due to different study designs.

The authors analyzed 301 trials (377 treatment arms of interest). The most common interventions for acute non-specific low back pain were NSAIDs (n=27); opioids (n=26); laser and light (n=25); acupuncture (n=24); and mobilization (n=19). The authors found 1 pharmacological treatment (NSAIDs; moderate certainty evidence) was found to be efficacious. For nonspecific chronic back pain, three non-pharmacological treatments (exercise, spinal manipulative therapy, taping; moderate certainty evidence) and 2 pharmacological treatments (antidepressants, transient receptor potential vanilloid 1 agonist (TRPV1); moderate certainty evidence) were found to be efficacious.

Editor's Comments: This study provides further indication that for acute nonspecific lower back pain, there is very little evidence of efficacy for many of the currently utilized treatments and therapies. The study did rely on the quality of data gathering from the original investigations, and the authors admit limitations in the deciphering of what constituted placebo in the studies analyzed. While more studies on this topic are needed, it is critical that UC clinicians utilize the data available to prescribe effective and evidence-based treatments for acute and chronic nonspecific low back pain. ■

Patient Satisfaction and the Type of Appointment

Take Home Point: Readily available and in-person (face-to-face) appointments were associated with increased patient satisfaction.

Citation: Burch P, Whittaker W, Lau Y. Relationship between the volume and type of appointments in general practice and patient experience: an observational study in England. *Br J Gen Pract.* 2025 May 2;75(754):e375-e381. doi: 10.3399/BJGP.2024.0276.

Relevance: Patient satisfaction is a surrogate for quality of care in medical practice. For UC, it is a potential ongoing revenue stream as it leads to return visits. Understanding some of the drivers of patient satisfaction in general practice and urgent care is important, particularly with the rise of virtual care.

Study Summary: This was a review of available data from the General Practice Patient Survey (GPPS), the largest patient experience database in England. Patient-reported indicators from the GPPS examined patient satisfaction with appointment times, overall satisfaction with the general practice itself, ability to consult with a preferred doctor, and unmet health needs.

The authors reviewed appointment data from 5,278 GP practices, correlating the GPPS to those practices. They found higher levels of satisfaction for face-to-face appointments with their preferred doctor. Patients were also more satisfied when they were able to see their doctor within 24 hours of requesting an appointment. There were low levels of satisfaction with telephone appointments.

Editor's Comments: There may be limited generalizability for this study to urgent care given its predominance for general practice (family medicine) visits to a known doctor. Additionally, given that this was focused on physicians, whereas in urgent care in the United States, the visits are generally conducted by non-physician clinicians. There are, however, some conclusions, particularly around the higher satisfaction for face-to-face consultations that may be taken into consideration by UC centers that are looking to leverage virtual consultations. Further research is needed in the area of patient satisfaction for UC clinics. ■

Does the Soft Shell Cap Reduce Sports-Related Concussions?

Take Home Point: In this study, the use of soft-shell helmet covers marketed as the Guardian Cap (GC) during high-school football practice was not associated with lower risk of sport related concussion (SRC) during practice or games.

Citation: Hammer E, Mosiman S, Joachim M, et al. The association between Guardian Cap use during practices and sport-related concussion risk in high school American football players. *Br J Sports Med.* 2025;59:257–262.

Relevance: SRCs are a major concern due to short-term and long-term consequences, and preventing them remains a priority for athletes, parents, medical providers, and sport-governing organizations.

Study Summary: This was a prospective cohort study from 41 high schools in Wisconsin during a football season. Athletes self-selected to wear soft-shell helmet covers on

their regular practice helmets (GC group) or not wear the covers (non-GC) during practice. None of the athletes wore the covers during games. Prior to the start of the season, players reported their demographic data (sex, age, grade in school, height, weight), history of SRC, and previous football playing experience, and completed the head injury Symptom and Severity score from the Sports Concussion Assessment Tool V.5 (SCAT5). Within 72 hours of injury sustained during a practice or game, players were determined to have sustained a SRC as defined by the Amsterdam International Consensus Statement on Concussion in Sport.

Included in the study were 2,610 high school football players (99.1% male), of which 1,422 (54.5%) wore the covers. The authors found 180 athletes (6.9%) sustained SRCs during the study period: 64 (35.6%) SRCs occurred during practices; and 116 (64.4%) SRCs occurred during games. Of the 64 SRCs sustained during practice, 33 (51.6%) occurred in GC athletes and 31 (48.4%) in non-GC athletes—equating to SRC rates of 0.49 and 0.54 SRCs per 1,000 practice exposures in the GC and non-GC cohorts, respectively. GC use was not associated with decreased risk of SRC during practice in the univariable analysis (relative risk [RR] 1.04; 95% CI, 0.58 to 1.86; $p=0.90$). Of the 116 SRCs sustained during games, 68 (58.6%) occurred in GC athletes and 48 (41.4%) in non-GC athletes with rates of 4.80 (GC) and 4.22 (non-GC) SRCs/1000 game exposures. There was no difference in time to return to sport between the GC and non-GC cohort.

Editor's Comments: The lack of randomization and the self-selection of wearing soft-shell helmet covers has the potential to affect the final analysis of this study. None of the athletes wore GC during games, which may have the potential to affect interpretation of the results as well. Additionally, this study focused purely on football and did not consider other high impact sports like hockey or lacrosse where the use of GC may have some benefit. Overall, these results need to be viewed critically, and continued caution is needed when advising parents and student athletes on the effectiveness of soft-shell helmet covers to ensure it does not create a false sense of safety. ■

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11.83
MINUTES
AVERAGE STAT READ



26.27
MINUTES
AVERAGE ROUTINE READ





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

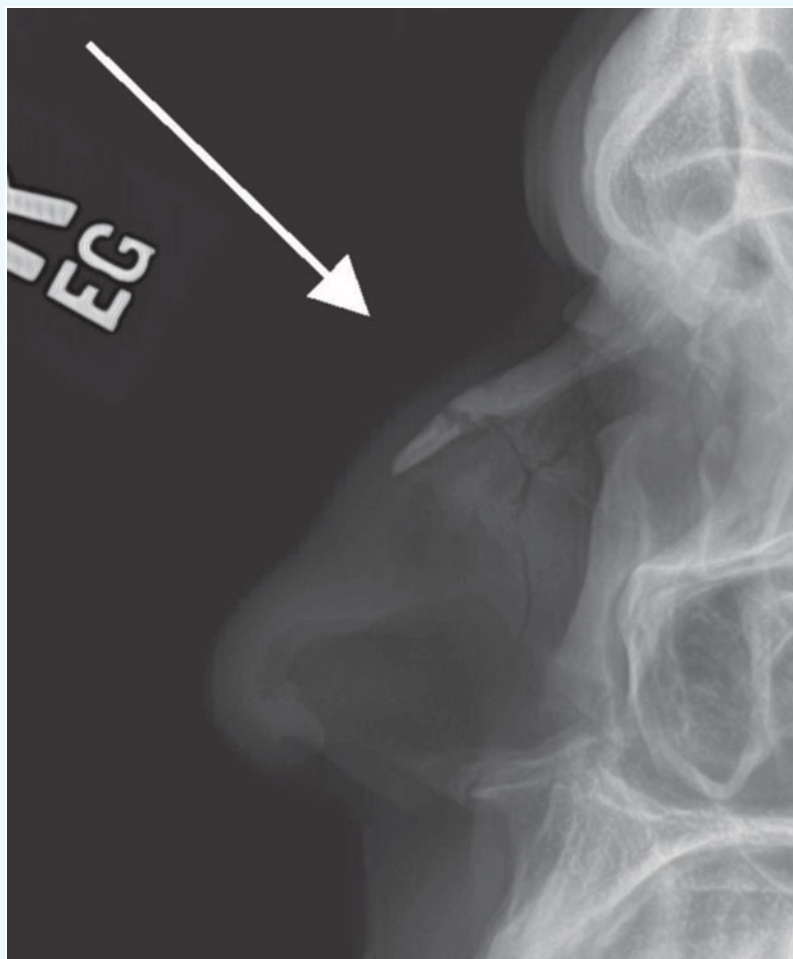
42-Year-Old With Facial Injury



A 42-year-old man presents to urgent care on a Sunday afternoon. He explains that he was playing a game of pick-up football in his neighborhood and suffered a rough kick to the face from another player. His nose is swollen, and he's clearly in pain. An x-ray is ordered to capture a lateral view of the nasal bones.

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

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

**Differential Diagnosis**

- Fractures of the nasal bone and anterior nasal spine
- Fracture of the orbit and zygoma
- Nasal soft tissue injury

Diagnosis

The correct diagnosis in this case is fractures of the nasal bone and anterior nasal spine. As seen in the x-ray, there is a linear fracture through the nasal bone. Irregularity of the anterior nasal spine with overlying soft tissue swelling can be observed.

What to Look For

- Fractures of the anterior nasal spine in maxillofacial trauma are common, and missed diagnosis of these types of fractures happens often because the structure can be overlooked in evaluations
- Evaluate for other fractures of the facial bones
- It is important to evaluate for septal hematoma as this requires intervention to prevent necrosis and infection

Pearls for Urgent Care Management

- Initial treatment includes ice, oral pain medications, and head elevation
- For displaced fractures, discuss with a specialist about preferred timing of reduction



3-Week-Old With Scaly Skin Rash



A 3-week-old girl presents to urgent care with widespread scaly skin. On physical examination, her vital signs are normal. She is noted to have ectropion and large, thick, plate-like scales covering most of her body. The patient had a personal history of prematurity and collodion membrane at birth. There is no family history of dermatological or genetic disorders.

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

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



Differential Diagnosis

- Bullous congenital ichthyosiform erythroderma
- CHIME syndrome
- Congenital nonbullous ichthyosiform erythroderma
- Lamellar ichthyosis

Diagnosis

The correct diagnosis in this case is lamellar ichthyosis. On the image above, diffuse shiny, plate-like scales and underlying pink erythema may be seen on the face, trunk, and arms. Laboratory testing in this case confirmed a deficiency of transglutaminase-1.

Lamellar ichthyosis is a rare, genetic disorder, resulting from variants in the cornified envelope of keratinocytes in the skin. The hallmark of the disease is a collodion membrane (a translucent, thick, cellophane-like membrane) at birth, which is shed, and followed by diffuse erythematous, scaly skin with thick plate-like scales. Babies may have trouble feeding, dehydration, electrolyte imbalance, breathing problems, and unstable body temperature.

What to Look For

- Rash is described as diffuse erythroderma, scaly skin, and thick plate-like scales
- Greatest involvement is seen in the trunk and lower extremities
- Palms and soles may be affected variably
- Scalp involvement may lead to scarring alopecia

Pearls for Urgent Care Management

- Evaluate the infant's fluid status and nutrition status as dehydration is common
- Evaluate the infant for evidence of systemic infection and heat loss due to the impaired epidermal barrier
- Initial treatment is topical application of large amounts of petroleum-based emollients
- Immediate referral to a multidisciplinary team including a dermatologist is indicated



56-Year-Old With Episodes of Chest Pain

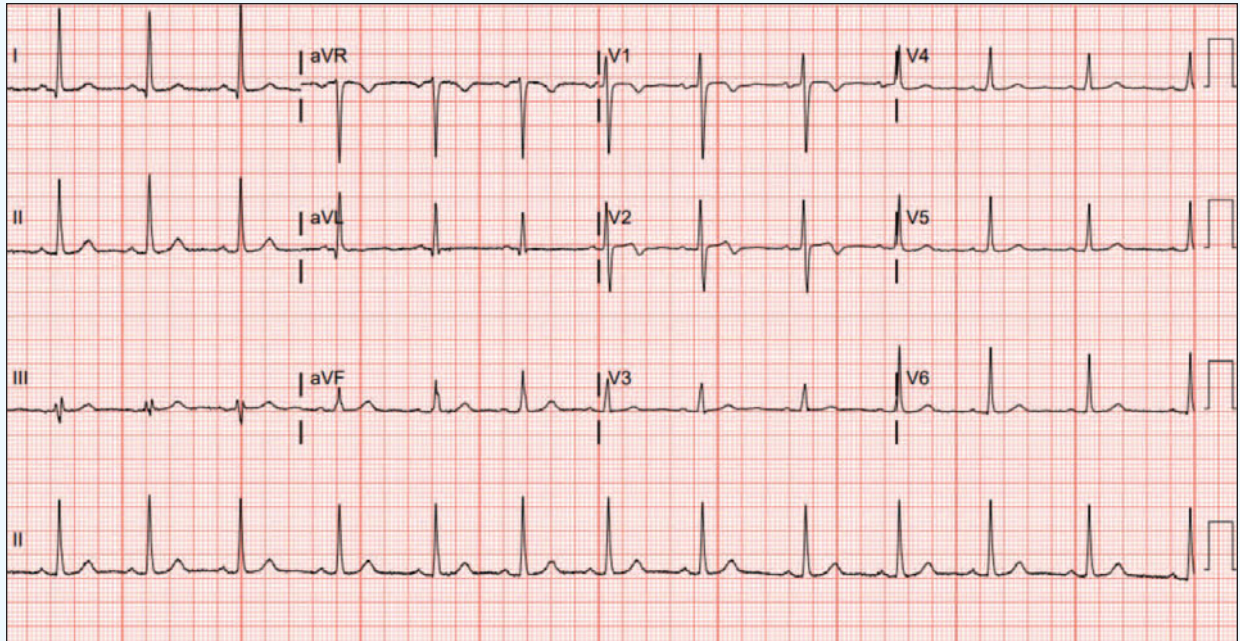


Figure 1: Initial ECG

A 56-year-old female with no past medical history presents to urgent care with 2 episodes of chest pain that woke her up this morning. She had 2 additional episodes while walking and while bathing earlier in the day. The episodes lasted about 10 minutes each, and she is currently free from chest pain. The pain is pressure-like and left-sided, radiating to her back. An ECG is obtained.

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

Case presented by Catherine Reynolds, MD, McGovern Medical School at UTHealth Houston.

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

ECG STAMPEDE

Differential Diagnosis

- Brugada syndrome
- Left ventricular hypertrophy
- Wellens syndrome
- ST-Elevation myocardial infarction (STEMI)

Diagnosis

The diagnosis in this case is Wellens syndrome. The ECG demonstrates a normal sinus rhythm at 72 beats per minute. There are biphasic T waves with terminal negativity in V1 and V2. There is no significant ST segment elevation, no precordial Q waves, and preserved R wave progression (R wave >3 mm in V3). Wellens syndrome is suggested in this patient with anginal episodes who is currently chest pain free.¹



Figure 2: Biphasic T waves (▼▲) with terminal negativity (▲) consistent with type A Wellens pattern.

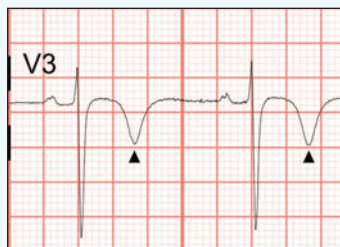


Figure 3: Deeply inverted T waves (▼) consistent with type B Wellens pattern.

Discussion

Wellens syndrome refers to an electrocardiographic pattern observed in patients with severe narrowing of the proximal left anterior descending artery (LAD). This pattern is typically seen in the precordial leads (V2 and V3) on the ECG: Type A presents with biphasic T waves and is seen in approximately 25% of cases (Figure 2); while type B has deeply inverted, symmetric T waves and is seen in approximately 75% of cases (Figure 3).^{2,3} The Wellens pattern is like T waves observed in patients who have recently undergone reperfusion via percutaneous coronary intervention (PCI) (ie, reperfusion T waves). Wellens syndrome is believed to occur when an occluded LAD spontaneously reperfuses.⁴ Wellens syndrome occurs in patients who are not currently experiencing chest pain. When these patients

develop chest pain, the ECG may show “pseudonormalization” of the T waves, where they become upright and appear normal. If the occlusion persists, it can progress to an anterior ST-elevation myocardial infarction.

Unlike in Brugada syndrome or STEMI, the Wellens pattern typically shows minimal or no ST segment elevation. Although this pattern doesn’t meet criteria for STEMI, patients with Wellens syndrome are at high risk for LAD occlusion and require urgent coronary angiography. Patients with Wellens syndrome should be transferred to a PCI-capable facility.

In patients with left ventricular hypertrophy, it is common to see T wave inversion in the left-sided leads (V5 and V6) and ST elevation in the precordial leads. However, it’s crucial to recognize that these changes differ from the distinctive T wave patterns seen in Wellens syndrome and should not be mistaken for them.

What To Look For

- Biphasic (type A) or deeply inverted (type B) T waves in V2-3, which may extend to V1-6
- Minimal or no elevation of the ST segment
- Lack of precordial Q waves
- Preserved R wave progression
- Recent history of chest pain, but chest pain free on evaluation
- May have normal or minimally elevated cardiac enzymes

Pearls For Initial Management, Considerations For Transfer

- These patients have an impending anterior wall myocardial infarction and must be transferred for urgent cardiac catheterization
- Stress test should be avoided, as it will precipitate an acute infarction
- The patient’s condition may change at any time, and they are critical in nature. If they have another episode of chest pain, repeat their ECG and look for an anterior STEMI or “pseudonormalization” of the anterior T waves—this means they are experiencing an acute reocclusion of their LAD

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Credentialing: The Gatekeeper of Access and Reimbursement

■ Phyllis Dobberstein, CPC, CPMA, CPCO, CEMC, CCC

In the healthcare ecosystem, credentialing is more than a bureaucratic hurdle—it's the linchpin of successful revenue cycle management. For urgent care centers, credentialing determines whether providers can be reimbursed for the care they deliver to insured patients and whether they can participate in insurer networks.

Credentialing is the formal process by which payers—commercial insurance companies, Medicare, and Medicaid—verify the qualifications, training, licensure, and work history of care providers. It is a prerequisite for reimbursement, as only credentialed providers can bill for services rendered to insured patients under most plans. Not to be confused with contracting—which involves negotiating the terms of reimbursement and services—credentialing is the process of validating the provider's qualifications to practice under those contracted agreements.

In urgent care, payer reimbursements hinge on network participation. If a provider or urgent care center isn't both credentialed and contracted as part of the payer's network, patients won't be able to take advantage of their insurance coverage to pay for the visit, often leading them to seek care elsewhere. This is particularly risky when opening a new urgent care center. Seeing patients before credentialing and contracting are complete can result in low patient volumes and poor revenue.

Even if a visit can be reimbursed out-of-network, insurer payments are often issued directly to the patient, and it can be difficult for the urgent care to collect that payment retrospectively.

The Credentialing Process and Its Pitfalls

Credentialing is notoriously slow and complex. On average,

it can take 8 to 12 months from application to approval. This is due to variability across payers, evolving requirements, and administrative bottlenecks. A few common pitfalls include:

- Missed application deadlines
- Incomplete documentation
- Failure to update payer records
- Confusing payer-specific rules

Some states have also passed laws to standardize credentialing timelines. For example, Washington mandates that health insurance carriers must process completed applications within 90 days, with an average response time not to exceed 60 days.

Provider Types and Credentialing Eligibility

Credentialing rules vary based on provider type. Physicians, nurse practitioners, and physician assistants must each meet different criteria. Some payers, especially Blue Cross Blue Shield organizations, require nonphysician practitioners to be credentialed and to bill under their own National Provider Identifier, sometimes resulting in lower reimbursement when compared to that of physicians.

Moreover, provider categories matter. Providers with a background in emergency medicine, for example, may struggle to get credentialed as primary care providers, especially when a center aims to contract under a primary care designation rather than urgent care.

Credentialing requirements differ notably between urgent care and primary care contracts:

- **Primary care** typically requires individual provider credentialing, patient assignments, and delivery of specific services like wellness visits, vaccinations, and chronic disease management.
- **Urgent care**, on the other hand, may only require facility-level credentialing and typically earns a flat rate per patient visit. It excludes routine preventive care in many cases.



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Hybrid Models

Centers operating both urgent care and primary care services under one roof often need 2 separate tax IDs, separate payer contracts, and separate credentialing tracks. Each line of business may require its own providers, billing processes, and even distinct physical spaces to remain compliant with payer policies.

Running a parallel model—distinct but co-located urgent and primary care operations—can optimize patient access while minimizing operational conflicts. It also allows clear differentiation in billing and credentialing for each service line.

The Strategic Role of Credentialing in Startup Success

Given the stakes, many centers opt to outsource credentialing to specialists who understand payer nuances, state laws, and evolving compliance mandates. Hiring professionals early—preferably before site selection and lease signing—can ensure a smoother center opening and better payer engagement.

Credentialing professionals provide value by:

- Navigating closed networks and identifying payer opportunities

- Interpreting ambiguous or conflicting payer requirements
- Maintaining up-to-date credentialing statuses
- Reducing denials and legal risks through clean, compliant processes

Credentialing doesn't just support operations—it's central to strategic planning. When launching a new urgent care, understanding the payer landscape in advance is critical. Some insurers may not accept new providers in certain markets, citing saturation or vertical integration with their own care networks.

A payer landscape review, conducted during the feasibility phase, can reveal whether contracts are realistically obtainable and which networks to prioritize. This step often determines whether a startup can succeed—or should reconsider its market entry.

Credentialing is not merely a back-office function. It is a strategic lever that affects access, revenue, compliance, and growth. In an increasingly complex healthcare environment, successful urgent care and primary care operators treat credentialing as a core function—worthy of expert attention, dedicated resources, and careful planning. ■

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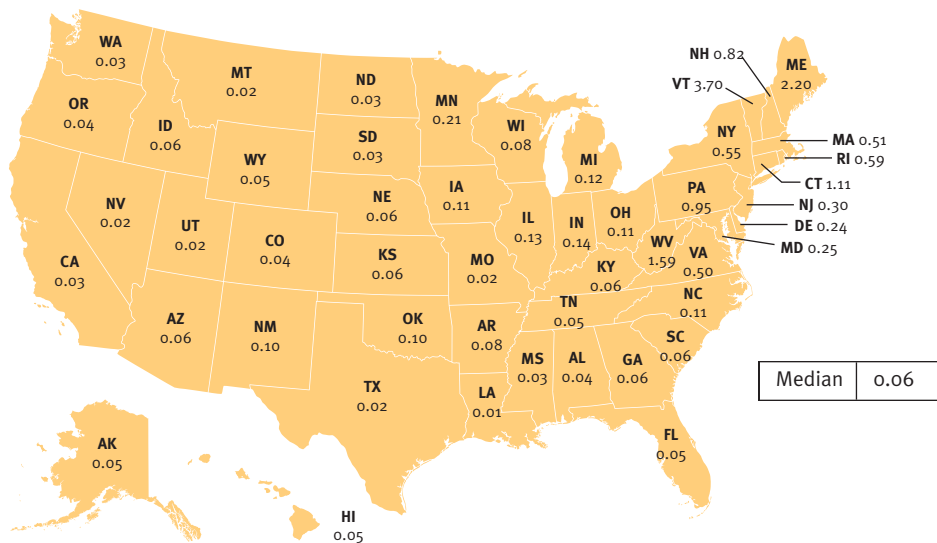




Northeast Leads in Lyme-Related Diagnoses in Urgent Care

■ Alan A. Ayers, MBA, MAcc

UC PATIENT VISITS WITH ANY LYME-RELATED DIAGNOSIS, PER 1,000 VISITS



Analysis of 34,686,786 patient visits with any Lyme-related diagnosis (ICD-10) code, in the Experity EMR from May 1, 2024 to April 30, 2025.

In the United States, 8 common species of ticks exist in different geographies that present risk of transmitting more than 10 different types of diseases. According to data from the Centers for Disease Control and Prevention, the most common ticks associated with human disease transmission in the United States are the American dog tick (*Dermacentor variabilis*, or *D. similis*), also known as a “wood tick,” and the blacklegged tick (*Ixodes scapularis*), commonly referred to as a “deer tick.”¹ The deer tick is associated with Lyme disease as well as other diseases. Both of these species exist in every state east of the Rocky Mountains.

Lyme disease symptoms can vary, but common early

symptoms include a characteristic erythema migrans (EM) rash, which often looks like a bull’s eye target, as well as flu-like symptoms such as fever, fatigue, headache, and muscle/joint aches.² It’s important to note that not all patients will develop a rash, and the flu-like symptoms can be easily mistaken for viral or other conditions.

Prompt treatment with antibiotics (usually doxycycline, amoxicillin, or cefuroxime)³ can prevent Lyme disease from spreading and causing more serious complications to the heart, nervous system, and joints. ■

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